Lab-Grown vs. Natural Diamonds: A Moderated Mediation Analysis of How Brand Type and Perceived Scarcity Influence Consumer Purchase Intentions

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Dissertation written under the supervision of Kurt P. Munz

Dissertation submitted in partial fulfilment of requirements for the MSc in International Management, specialization Marketing, at Universidade Católica Portuguesa and for the MSc in Marketing Management at Bocconi University, 12.09.2024

Abstract

Title: Lab-Grown vs. Natural Diamonds: A Moderated Mediation Analysis of How Brand Type and Perceived Scarcity Influence Consumer Purchase Intentions

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This study explored the influence of diamond origin (lab-grown vs. natural) on purchase intention through perceived scarcity, with brand type as a moderator. Given the recent rising prominence of lab-grown diamonds in the jewelry market, this research investigates how perceived scarcity influences purchase intention and whether luxury brands can increase the perceived scarcity of lab-grown diamonds.

A 2x2 factorial design between-subjects experiment was conducted, involving 253 participants who were randomly presented with one of four scenarios regarding diamond origin (lab-grown vs. natural) and brand type (luxury vs. no-name). The study employed a moderated mediation analysis using Hayes' PROCESS macro (Model 7). The findings show that diamond origin is directly associated with perceived scarcity, proving that lab-grown diamonds are perceived as less scarce than natural diamonds. Furthermore, perceived scarcity is positively associated with purchase intention, confirming that scarcity plays a crucial role in driving consumer demand. However, the moderating effect of brand type was found to be non-significant, suggesting that brand prestige does not significantly influence the relationship between diamond origin and perceived scarcity or purchase intention. These findings contribute to the understanding of how lab-grown diamonds are perceived in the luxury jewelry market and provide valuable insights for marketers looking to position sustainable alternatives within traditional luxury frameworks.

Keywords: Lab-grown diamonds, natural diamonds, scarcity, luxury brands

Resumo

Título: Diamantes cultivados em laboratório vs. diamantes naturais: Uma Análise de Mediação Moderada de Como o Tipo de Marca e a Escassez Percebida Influenciam as Intenções de Compra do Consumidor

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Este estudo explorou a influência da origem do diamante (cultivado em laboratório vs. natural) na intenção de compra através da perceção de escassez, com o tipo de marca como potencial fator moderador. Foi realizada uma experiência entre sujeitos com um desenho fatorial 2x2, envolvendo 253 participantes a quem foi apresentado aleatoriamente um de quatro cenários relativos à origem do diamante (cultivado em laboratório vs. natural) e ao tipo de marca (luxo vs. sem marca). O estudo empregou uma análise de mediação moderada utilizando a macro PROCESS de Hayes (Modelo 7). Os resultados mostram que a origem do diamante está diretamente associada à perceção de escassez, provando que os diamantes cultivados em laboratório são vistos como menos escassos do que os diamantes naturais. Além disso, a perceção de escassez está positivamente associada à intenção de compra, confirmando que a escassez desempenha um papel crucial na procura do consumidor. No entanto, o efeito moderador do tipo de marca não foi significativo, o que sugere que o prestígio da marca não influencia significativamente a relação entre a origem do diamante e a perceção de escassez ou a intenção de compra.

Palavras-chave: Diamantes cultivados em laboratório, diamantes naturais, escassez, marcas de luxo

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List of Abbreviations

CSO	-	Central selling organization
CSR	-	Corporate Social Responsibility
Cts	-	Carats
DPA	-	Diamond Producers Association
FTC	-	Federal Trade Commission
GIA	-	Gemological Institute of America
LGD	-	Lab-grown diamond
LVMH	-	Louis Vuitton Moet Hennessy
ND	-	Natural diamond
USD	-	US Dollar

1. Introduction

1.1. Problem Statement

With the emergence of laboratory-grown diamonds, which pose a sustainable alternative to naturally mined diamonds, the 86.5 billion USD diamond jewelry market (Statista, 2024e) is challenged and undergoing significant transformations. This shift represents both opportunities and challenges for brands in the luxury jewelry sector, particularly in terms of how consumers perceive the scarcity and value of lab-grown diamonds.

While traditional luxury diamonds have long been associated with exclusivity, prestige, and social status (Kapferer & Bastien, 2009), lab-grown diamonds offer a more environmentally conscious option, at a significantly lower cost. This has raised questions about how luxury brands can navigate this dynamic.

The key problem for both marketers and researchers lies in how consumers perceive these two types of diamonds and how this perception impacts their purchase intentions. As scarcity is a major driver of luxury consumption (Verhallen, 1982), understanding how it affects consumer behavior in this emerging market is crucial. Moreover, brand type, specifically luxury versus non-luxury brands, may further influence the perceived value of lab-grown diamonds. Despite the rising popularity of lab-grown diamonds, little is known about if and how luxury brands can influence the perceived scarcity of these diamonds to maintain their exclusivity.

1.1.1. Theoretical Relevance

The relationship between scarcity and consumer behavior has been extensively explored in luxury consumption. According to Brock's Commodity Theory (1986), scarcity enhances the value of a product, particularly when it is perceived as a luxury item. However, the dynamics of perceived scarcity may shift with lab-grown diamonds, which are more abundant and require fewer resources in production. Studies by Janssen et al. (2017) highlight how brand conspicuousness can diminish corporate social responsibility (CSR) perceptions in luxury brands, suggesting that traditional luxury practices might not align seamlessly with sustainable alternatives.

This study aims to contribute to the existing body of knowledge by examining whether lab-grown diamonds, marketed by luxury brands, can still evoke perceptions of scarcity. Furthermore, this research will test how perceived scarcity mediates the relationship between

diamond origin and purchase intention. This aligns with findings from Wiedmann et al. (2007), who propose that luxury value is co-created through a mix of financial, functional, individual, and social values. Additionally, the study will assess whether brand type moderates the relationship, building on the work of Vigneron & Johnson (2004), which underscores the importance of brand heritage and prestige in consumer evaluations of luxury items. Thus, this study aims to provide the framework for answering the following research questions:

RQ 1: Does perceived scarcity influence the purchase intention of lab-grown diamonds vs natural diamonds?

RQ 2: *Can luxury brands influence the perceived scarcity of lab-grown diamonds and therefore increase purchase intention?*

1.1.2. Managerial Relevance

This research will offer managerial insights on whether luxury brands can market lab-grown diamonds as scarce and exclusive, potentially increasing their appeal even in markets dominated by traditional diamonds. Understanding the role of perceived scarcity in the lab-grown diamond sector could help luxury brands strategically position these products to appeal to a wider demographic while preserving their luxury status.

1.2. Research Objectives

The primary objective of this study is to investigate how the diamond origin (lab-grown versus natural) influences consumer purchase intentions, particularly through the mediating effect of perceived scarcity. Specifically, the research seeks to explore whether lab-grown diamonds, when marketed by luxury brands, can still invoke perceptions of scarcity, which traditionally drives purchase intention in the luxury goods market.

Moreover, this study aims to assess whether brand type moderates the relationship between diamond origin and perceived scarcity. The study also seeks to understand whether the importance of CSR impacts luxury diamond purchases and how brands can balance environmental ethics with traditional markers of luxury such as exclusivity and scarcity.

1.3. Methodological Overview

1.3.1. Outline of Literature Review

The literature review will focus on three core areas. The first chapter explains the traditional diamond industry and the rise of lab-grown diamonds. Second, consumer motivations for luxury purchases are discussed as well as the role of perceived scarcity, and the influence of brand type on consumer behavior. Lastly, theories on scarcity will be presented. This literature review will verify that there is indeed a gap in existing research. Keywords used to find relevant literature and to gain a thorough understanding of the topic were entered into scientific databases like Google Scholar, Emerald Insight, ScienceDirect, Wiley Online Library, and the Bocconi library database. Some of the keywords used are: scarcity marketing, lab-grown diamonds, natural diamonds, luxury value creation, symbolic value of brands, and sustainability and luxury.

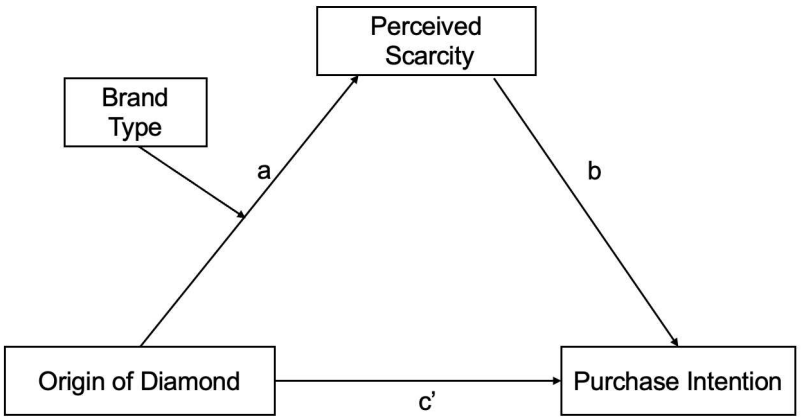
1.3.2. Outline of Research Method

This study employs a quantitative, 2x2 factorial between-subjects experimental design to test the hypotheses. Participants are randomly assigned to one of four groups, each presented with a different scenario involving either a natural or lab-grown diamond, paired with either a luxury or non-luxury brand. The participants completed a survey designed to measure their perceived scarcity of the product and their purchase intention. Moderated mediation analysis will be performed using Hayes' PROCESS macro (Model 7), which allows for testing both direct and indirect effects of diamond origin on purchase intention, with perceived scarcity as the mediator and brand type as the moderator. The proposed relationship between origin of diamond, brand type, perceived scarcity, and purchase intention is graphically summarized in Figure 1.

As a last step, limitations as well as managerial and theoretical implications are discussed to draw attention to potential areas for future research.

The data used for the analysis is collected from a sample of 253 participants, primarily through online survey distribution channels.

Figure 1: Study model



2. Literature Review

2.1. Diamond Industry

This section will explain how to distinguish between natural-mined diamonds and laboratory-grown diamonds and their properties and applications. To better understand the supply and demand of diamonds, an industry overview will provide insights into the market value, symbolic value, and perceptions of both diamond groups, which differ in their origins.

2.1.1. Natural Mined Diamonds

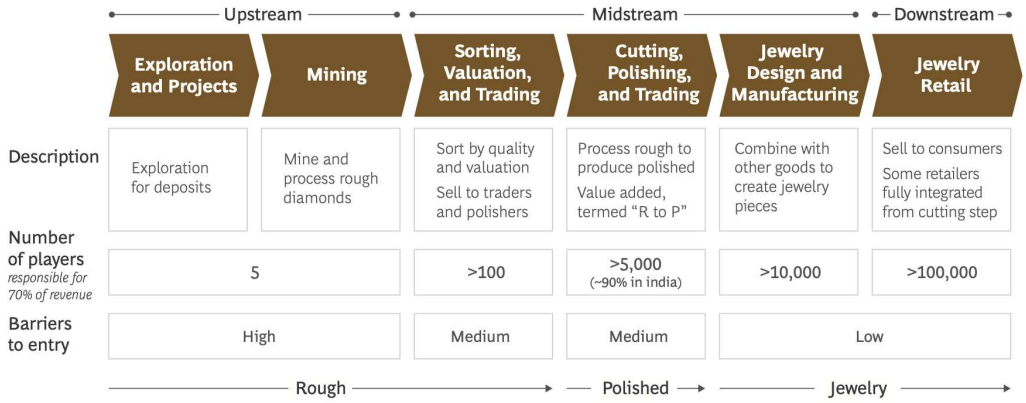
Diamonds are undoubtedly the most famous and popular gemstones of all time. These minerals are natural gemstones composed of only one element, namely carbon. The carbon atoms within diamonds are bonded very strongly, making it the hardest-known substance. This characteristic is also represented in its name, which comes from the Greek word "adamas," which means “indestructible”. They were formed millions to billions of years ago under extremely high temperatures and pressure about 140 kilometers beneath the earth´s surface in the earth´s mantle and were then explosively carried out by volcanoes to the Earth’s surface (Gemological Institute of America, n. d.).

The largest diamond-producing countries are, ranked by production size, Russia, Botswana, Angola, Canada, the Democratic Republic of Congo, and South Africa. Putting the country-specific production results into relation, Russia reproduced 37.32 million carats in 2023, while South Africa “only” reproduced 5.89 million carats in 2023 (Kimberley Process, 2024). In total, the production of rough diamonds noted 111.5 million carats, accounting for a production value of 12.72 billion US Dollars (Singla, 2024). Diamonds are mainly used in two different branches, namely the industrial and the jewelry business.

To understand where the value in diamonds is generated, this paragraph will explore the natural diamond´s value chain.

A diamond's journey represents a complex supply chain, which ranges from mining to retail, where multiple stakeholders such as miners, cutters, polishers, traders, and retailers are involved. The value chain can be divided into three streams: upstream, midstream, and downstream, as seen in Figure 2.

Figure 2: The natural diamond value chain (Boston Consulting Group & De Beers, 2024)



Upstream includes the exploration and mining of rough diamonds, which encompasses the process of taking the diamonds out of the ground. This part of the production stream is highly concentrated by only five main players, accounting for 70% of revenues (Boston Consulting Group, 2024), namely ALROSA, Anglo American (De Beers), Rio Tinto, Petra Diamonds, and Catoca (ALROSA, 2022). It is worth mentioning that the two largest players together represent 59% of the market share.

Following the extraction, the midstream phase is entered where the diamonds undergo two different phases of sorting. First, they are sorted by industrial grade or jewelry grade where on average only 20-30% of the mined diamonds are of gem quality and can be further used for the jewelry market (Gemological Institute of America, n.d.).

When qualified as gems, they are then graded based on three factors: size, color, and clarity, which is crucial to measure their potential future value. After that, they are delivered to centers for cutting and polishing, transforming a rough diamond into a sparkling gemstone. Following cutting and polishing, traders purchase the diamonds and resell them to stores or jewelry manufacturers, 90% of all diamonds are polished and cut in India (Boston Consulting Group, 2024). Before the downstream phase, the diamonds can be combined with other goods to create a jewelry piece.

Finally, they are ready to be sold by jewelry retailers to their customers. The sales price is, among other factors, informed by the quality of the polished diamond.

The universal method to objectively assess the quality of a diamond refers to the 4Cs: carat, color, clarity, and cut, dictating how the diamond appears and how high quality it is. This process was initiated by the Gemological Institute of America (GIA) and De Beers in 1939.

The carat weight measures the stone's size, with one carat equaling 0,2 grams. This precise measurement significantly influences the gem's price (Gemological Institute of America, n.d.). When inspecting the color, even a slight change in hue, often undetectable to the naked eye, can greatly affect a gemstone's quality and price. The GIA color scale grades diamonds from D to Z, with D indicating the highest quality (colorless) and Z representing lower quality diamonds with a yellowish tint. Hence, as the color decreases, the quality increases, making colorless diamonds the most desired ones (Gemological Institute of America, n.d.).
The third "C," clarity, pertains to identifying and assessing the internal characteristics of the diamond. Since no diamond is perfectly pure, these internal marks are graded on the Clarity Scale (Gemological Institute of America, n.d.).
The cut is the last and the hardest property to evaluate in terms of a diamond's quality. Not only does it refer to the shape of the diamond but also its ability to reflect light, as well as its design and craftsmanship (Gemological Institute of America, n.d.).

2.1.2. De Beers Commercializing Eternal Love

Diamonds have held symbolic value across various cultures in the past, but the modern interpretation of diamonds appeals to the emotional state as symbols of eternal love and commitment, which is mainly a consequence of De Beers' marketing campaigns.

The first diamond engagement ring in history was witnessed in the presence of the Habsburg dynasty in the 15th century, when Archduke Maximilian of Austria proposed to Mary of Burgundy in 1477, marking one of the earliest instances of diamonds symbolizing romantic commitment and marriage (American Gem Society, 2023). However, this gesture was mainly present in the European aristocracy and nobility, executed by the upper society and therefore not widely spread. Despite this early association, it was not until the 20th century that diamonds became recognized as the ultimate symbol of love.

The notion that diamonds are “rare, valuable, and essential signs of esteem” is a more recent development in the history of the diamond trade (Epstein, 1982).
Up to the late nineteenth century, diamonds could only be found in a few Indian riverbeds and Brazilian jungles, with global production amounting to just a few pounds annually. However, in 1870, massive diamond mines were explored near the Orange River in South Africa, leading to a flood of diamonds on the market. British financiers quickly realized their investment in

these mines was at risk, as diamonds had little intrinsic value and their price almost solely relied on their scarcity. Fearing that new mines would reduce diamonds to semiprecious gems, major investors have decided to merge their interests to control production and maintain the illusion of diamond scarcity (Epstein, 1982).

This is the birth hour of De Beers Consolidated Mines, Ltd. founded in 1888 by Cecil Rhodes, which has proven to be one of the leading diamond mining sources for diamond retail and industrial manufacturing. By controlling the majority of the world´s diamond mines, their business practices followed a cartel arrangement (Epstein, 1982). Thanks to their monopoly, they could inflate diamond prices artificially.

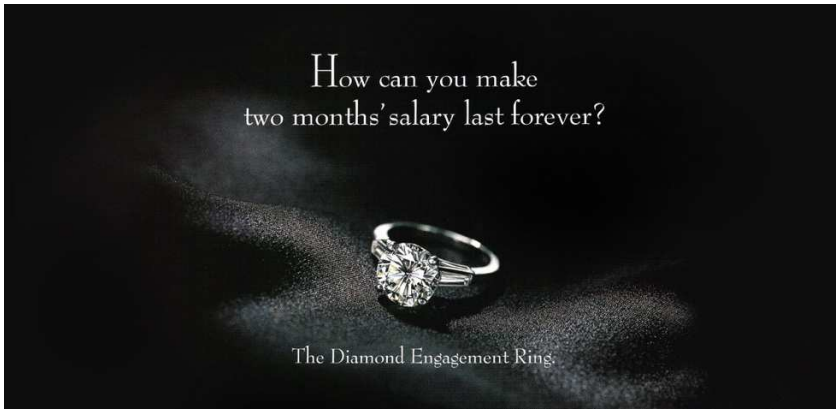
In the late 1930s, however, diamond sales were dropping due to the Great Depression and the diamond market was consequently at risk and urgently needed a solution to maintain its business.

Having control of the supply of an otherwise bountiful mineral, and appointing celebrities for endorsements, DeBeers persuaded the public that diamonds are desirable and scarce (Memme, 2019). For this to be successful, they not only had to manipulate supply but also demand, recognizing that diamonds are mostly purchased by men, but desired and worn by women. More specifically, De Beer´s iconic campaign of 1947 named “A Diamond is Forever”, by Frances Gerety (a copywriter at N.W. Ayer & Son), has shown long-lasting success, and created demand by linking diamonds with engagement rituals (Epstein, 1982). At that time, the US seemed to be the only potential market, where marketing efforts could be deployed, as Europe was on the brink of a war.

By associating diamonds with eternal love, De Beers has leveraged the diamond´s earth properties, namely durability, and hardness, to symbolize unbreakable bonds, preventing the customer from reselling their diamonds which are meant to be for “forever”. This campaign has enabled De Beers to commercialize love, romance, and marriage into a commodity, creating a need for diamond engagement rings, especially in Western culture (Epstein, 1982). Before the 1930s, it was not the norm to gift a woman a diamond engagement ring to ask for eternal love. Today, approximately 80 percent of engagement rings in the US feature a diamond (Cawley, 2014).

There was even put a price on love, men were told to spend one- or two-months’ salary on the engagement ring, initiated by the marketing slogan "How can you make two months' salary last forever?", which can be seen below in Figure 2 (Cawley, 2014).

Figure 3: De Beers' marketing campaign (Picciotto, 2020)



Nevertheless, the diamond market was rechallenged in the 1990s when the concern about "blood diamonds" was brought to public light. The term will be discussed in the following part.

2.1.3. Ethical and Sustainability Concerns

Even though the communication around diamonds mainly focuses on the emotional sphere connected to these stones, diamonds are not sparkling in every aspect and have also been associated with highly negative images, attached to blood.

The so-called "conflict diamonds" or "blood diamonds" have gained attention in the 1990s, displaying the biggest scandal within the industry. The critics are mainly concerned with missing transparency, the abuse of human rights, child labor, bribery, corruption, and money laundering (Moraes et al., 2015). Rough diamonds have contributed to financing wars against governments in countries like Sierra Leone, the Republic of Congo, Angola, and Liberia since the 1990s (Human Rights Watch, 2018). As a result, the diamond business is facing an increasing need for sustainability and transparency.

The Kimberly Process, established in 2003, is the industry's attempt to demonstrate a substantial commitment to addressing the challenges posed by conflict diamonds by promoting ethical business practices. Its goal is "to prevent the flow of conflict diamonds while helping to protect legitimate trade in rough diamonds" (Kimberley Process, n. D.). Through stringent certification and tracking mechanisms, the Kimberley Process promotes ethical diamond sourcing and informs consumers about the origins of their diamonds. However, the certification scheme's effectiveness is questioned, with critics highlighting its limitations in tackling the complexities of conflict diamonds, especially given the evolving trade dynamics and loopholes

in the certification process. Additionally, there is currently minimal tracking available for concerned consumers (Mckay, 2024).

Besides the critical aspects of unethical business practices, there is also a significant environmental impact, mainly resulting from degradation from mining activities, pollution, soil erosion, destruction of wildlife, and high CO2 emissions (Moraes et al., 2015). As reported by the Imperial College London in 2021, each carat mined, weighing circa 200 milligrams, is responsible for consuming 108.5 kilos of CO2.

In spite of these obstacles, it should not be neglected that the naturally mined diamond industry is vital to the economies of several countries such as Botswana, contributing significantly to their GDP and employment rates. Hence, the diamond supply chain continues to be an essential component of the world economy.

2.1.4. Lab-Grown Diamonds

For the environmentally conscious consumer concerned with sourcing sustainable diamonds, diamonds grown in laboratories can be the answer. These diamonds, known as lab-grown diamonds (LGD) are also referred to as man-made, synthetic, or artisan. They should not be interchanged with imitations like moissanite, cubic zirconia, and other stimulants, engineered to mimic diamonds, as these in contrast are composed of a different chemical composition and lack the physical properties of diamonds and therefore also sell at lower prices.

To make it even official that lab-grown diamonds are considered diamonds, the Federal Trade Commission (FTC) expanded its definition of the term “diamond” from its previous definition “A diamond is a natural mineral consisting essentially of pure carbon crystallized in the isometric system”, removing the word “natural” (Rapaport News, 2018). Regardless of the new definition, if a diamond is created in a lab, this should be clearly and visibly disclosed. Using merely the term “diamond” for laboratory diamonds is likely to be deceptive to consumers, believing they are buying an earth-mined diamond (Federal Trade Commission, 2022).

In 1945, the first documented production of man-made diamonds was carried out by the company General Electric (GE). However, manufacturers have only been growing commercial quantities in the 1980s when the quality of the lab stones was good enough to be used in jewelry, but still improving over the ensuing decades (Shigley & Gemological Institute of America (GIA), 2022). Finally, in the mid-2010s, colorless lab-grown diamonds became available in the jewelry market in retail quantities.

The chemical, optical, and physical characteristics and crystal structure of lab-grown diamonds are nearly identical to those of naturally occurring diamonds. They are as well composed of carbon atoms, and just as hard as real diamonds, however, they lack the earth component as well as the prestige and status of an earth-grown diamond. To the unaided eye, laboratory-grown diamonds appear identical to natural diamonds, only a laboratory with advanced instruments can identify the difference in origin (Gemological Institute of America, 2024). Compared to the supply chain of natural-mined diamonds, lab-grown diamonds require fewer steps, time, and natural resources, they cut down the growth time significantly, from millions of years to a couple of months. So far, there are two different methods to grow lab-grown diamonds.

The traditional method used is the high-pressure, high-temperature (HPHT) method, where the synthetics are put under the same conditions as natural diamonds experience in the earth (temperatures of 1300-1600° C and pressure of 5-6GPa).

The more recently developed alternative method is called chemical vapor deposition (CVD) where gas that contains carbon is pumped into a vacuum chamber, allowing the diamond to crystallize around a diamond seed using more moderate temperatures (700-1300°C) (Gemological Institute of America, 2024).

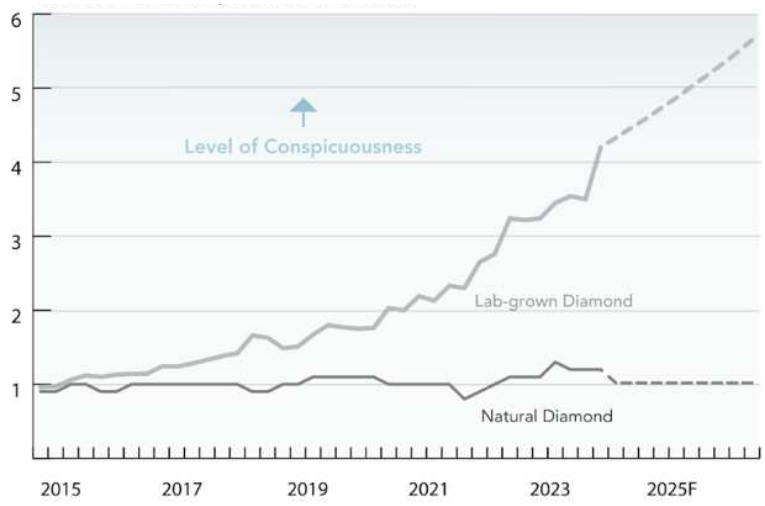
These new methods have made it possible to produce lab-grown diamonds up to 12 carats which is far more than what is generally used in jewelry pieces. For reference, most engagement rings range from 0.5 to 3 carats, which is already considered a very large diamond ring.

The market value for lab-grown diamonds in 2021 amounted to 20 billion USD and is expected to reach nearly 52 billion USD by 2030 (Statista, 2024). The market share for lab-grown diamond jewelry also foresees a huge increase from 1.7 percent in 2016 to almost 10 percent in 2030 (Statista, 2024a).

The only number associated with lab-grown diamonds seeing a decline is the price, which has experienced a huge downfall since 2016. When in 2016 people had to spend 10,600 USD on a 1.5-carat lab-grown diamond, seven years later in 2023 the amount to spend on the same stone was only 2,445 USD, which is less than a quarter. To put this into relation, a 1.5-carat earth-mined diamond cost 12,125 USD in 2016 and even increased in price to 13,635 in 2023 (Statista, 2024c). Today, the cost of lab-grown diamonds ranges between 60 to 85 percent less than their earth-mined counterpart (Queensmith, 2024).

This, in turn, means that customers of lab-grown diamonds get more carats for less money, which is portrayed in Figure 4.

Figure 4: Carat sizes one gets for a 6,000 USD budget (Zimnisky, 2024)



The trajectory for carat size that can be purchased for 6,000 US Dollars is going upwards, demonstrating that within a few years, one could afford a lab-grown gem almost hitting the six-carat mark. Whereas today, one "only" gets a four-carat man-made stone for the same amount of money (Zimnisky, 2024).

However, predicting the future value of lab-grown diamonds is rather difficult because of their disruptive nature. They only entered the mass market slowly in 2015 and are therefore not rich in historical data. It can be assumed that man-made stones will most likely not maintain their value, considered a disadvantage compared to natural diamonds which are expected to retain value over time (Zimnisky, 2019a).

Among the reasons for the rapid fall in prices of lab diamonds are their technological advancements and the increased availability of machinery. The lab-grown diamond market is heavily expanding thanks to economies of scale, allowing for greater production capacity at an increased speed (Queensmith, 2024).

Another reason is market saturation which derives from more companies entering the LGD market, thereby intensifying competition. This ultimately forces the companies to drop prices to attract customers.

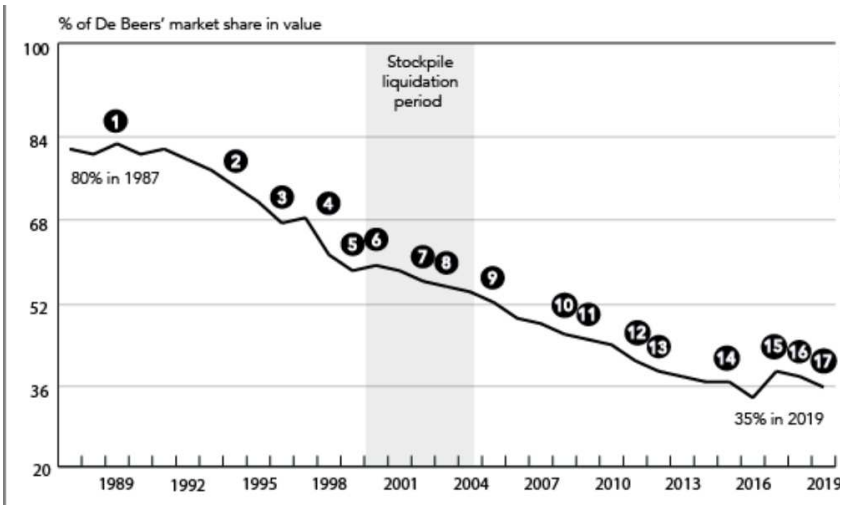
Furthermore, especially younger generations are feeling addressed by LGDs, due to their ethical and sustainable advantage, pressuring lab-grown diamond prices down (Queensmith, 2024) to make them affordable for this group of prospective customers.

Improved quality, new color options, and the opportunity for customization spark consumer interest and make lab-grown diamonds a more affordable, sustainable, and ethical alternative to earth-mined diamonds.

2.1.5. Diamond Jewelry Market

As mentioned previously, De Beers' legacy has had a significant impact on the evolution of the diamond jewelry industry. It was not until the mid-1990s that the supply of diamonds was strictly controlled by De Beers through their central selling organization (CSO), thereby influencing prices and artificially creating scarcity.

Figure 5: De Beers´ market share 1987-2019 (Zimnisky, 2019b)



As seen in Figure 5 after proving full market control over decades, their market position was about to weaken in the 1990s due to the discovery of new mines in countries like Canada, Russia, and Australia, which decided not to distribute their rough diamonds through the CSO but independently (Zimnisky, 2019b).

Other instances like ethical and regulatory pressures posed by the global awareness of "conflict diamonds" and "blood diamonds", and anti-trust suits in 2001 restricted De Beers from continuing their business the way they did for most of the 20th century (Spar, 2006).

With the cartel collapse at the beginning of the 2000s, the market has significantly changed, faced with increased global competition and the rise of lab-grown diamonds. In response to these challenges, De Beers shifted from its traditional cartel model adopting a more conventional business approach. This included restructuring its operations, focusing on the independent marketing of its brand "Forevermark" and entering the retail market directly. This strategic pivot marked the end of the cartel's dominance as De Beers could no longer hold its position to control the diamond supply and pricing, illustrated by their share which declined from over 80% to around 30%.

Today, the market for diamonds, used in jewelry, has reached 86.5 billion USD in sales in 2023. Notably, the USA is by far the largest market for diamond jewelry, valued at 47.7 billion USD in 2022, accounting for almost half of the market value of diamond jewelry. China and India represent, in a distant place, the second and third largest markets, valued at 8.8 billion USD and 5 billion USD in 2022 respectively (Statista, 2024e). The largest contributor to diamond jewelry sales are natural diamonds, forecasted to reach 72 billion USD in sales in 2024.

Lab-grown diamonds are projected to achieve 11 billion USD in sales, from which 7 billion USD are considered incremental sales, not competing with natural diamond jewelry (Statista, 2024d).

Regarding the country-specific share of lab-grown diamonds, a US-centricity can be depicted, representing 75 percent of all LGD retail sales. The younger generation in the US is especially incentivized by the fact that they are getting bigger or higher-quality stones for the same money (Boston Consulting Group & De Beers, 2024). Conversely, in China, diamonds serve as a source of wealth for future generations, and because of the lab-created diamond´s low resale value, they are not gaining much traction. The same goes for India, as they also focus on the cross-generational value natural diamonds provide, hence LGD penetration remains low due to their low resale value (Boston Consulting Group & De Beers, 2024).

Taking a closer look at the long-term supply projections of natural diamonds in Figure 6, the remaining diamond mines in 2040 and beyond are about to decrease with almost 20 existing diamond mines reaching exhaustion within the next decade (Zimnisky, 2019a). This poses a threat to diamond supply in the future.

Figure 6: Remaining diamond mines in 2040 and beyond (Zimnisky, 2019a)

Mine	Location	Annual Production	Remaining LOM	Final Year of Prod.
Jwaneng (underground)	Botswana	13.0	24	2043
Karowe (underground)	Botswana	0.3	24	2043
Finsch	South Africa	1.9	25	2044
Arkangelskaya/Karpinskogo-1	Russia	4.2	38	2057
Venetia	South Africa	6.0	40	2059
Luaxe (production)	Angola	8.0	38	2062
Orapa	Botswana	11.0	45	2064
Mir (resumption)	Russia	3.0	42	2065
Udachnaya	Russia	5.7	55	2074
Debmarine	Namibia	2.0	69	2085
Botuobinskaya	Russia	1.9	>75	2100+
Verkhne-Munskoe	Russia	1.8	>75	2100+
Star-Orion South (production)	Canada	1.8	>75	2100+
Cullinan	South Africa	1.7	>75	2100+

Year	# of Mines	Production
2040	14	-60
2050	11	-50
2075	5	-10

Diamond jewelry occurs in the luxury jewelry market, as well as in the premium segment, and outpaced most other jewelry segments in 2021, accounting for around 26 percent of the 320 billion USD jewelry market (Bain & Company & AWDC, 2022), as illustrated in Figure 7.

Figure 7: Jewelry market composition (Bain & Company & AWDC, 2022)

At the top level of the pyramid, illustrated in Figure 7, jewelry from luxury brands has its place, noting that these brands have not adopted the integration of lab-grown diamonds at scale see Figure 8. Their strategy behind the support of natural diamonds is to promise and promote naturality (Boston Consulting Group & De Beers, 2024). Only some luxury houses have experimented with the introduction of LGDs in selected lines, but positioning these differently from natural diamonds, using other shapes or colors. For example, the brand "FRED" by LVMH launched its first synthetic diamond called "FRED Audacious Blue" in 2023 for 375,000 €. It is characterized by its special blue color and the "FRED Hero Cut", differentiating itself from natural diamonds (LVMH, 2023). Another LVMH brand, Tag Heuer, also attempted a small move in the direction of lab-grown diamonds by launching a luxury watch featuring lab-grown diamonds for 360,000€.

The list below in Figure 8 provides an overview of the most prominent jewelry brands and their strategy regarding lab-grown diamonds.

Figure 8: Sample of lab-grown diamond integration from prominent jewelers (Zimnisky, 2022)

Company	Offer Lab-Grown Diamonds	Market LGD as Bridal Jewelry
Blue Nile**	Yes	Yes
Tiffany & Co.	No	N/A
Bulgari	No	N/A
Kay Jewelers	Yes	Yes
Chow Tai Fook	No	N/A
JCPenney	Yes	Yes
Luk Fook	No	N/A
Pandora	Yes	No
Zales	Yes	Yes
Swarovski	Yes	No
Tanishq	No	N/A
Cartier	No	N/A
Brilliant Earth	Yes	Yes
Macy's	Yes	Yes
James Allen	Yes	Yes
Prada	No	N/A
Chaumet	No	N/A
Van Cleef & Arpels	No	N/A

There is evidence, that luxury brands like Tiffany & Co., Bulgari, Cartier, Prada, Chaumet, and Van Cleef & Arpels neither market LGD as bridal jewelry nor do they offer LGD in general. Whereas LGD-only producers like Blue Nile, Kay Jewelers, JCPenney, Brilliant Earth, Macy´s, James Allen always offer LGD as well as LGD bridal jewelry. Furthermore, there are mass market fashion brands like Swarovski and Pandora, who sell LGD but not as bridal jewelry, which might be due to their overall low and affordable price point of jewelry.

However, some existing companies known for selling exclusively natural diamonds also started to appear in the lab-grown diamond jewelry segment, with a different positioning. They either source and sell diamonds themselves or invest in laboratories growing them. The most prominent examples are De Beers and LVMH.

In 2018, De Beers launched its lab-grown diamond brand called “Lightbox”, which posed a strategic move. With the launch of the brand, De Beers competed on prices by keeping the prices constantly low, with the positive side effect of elevating the natural diamond value and perception, see Figure 9. This was a move for diversification, balancing innovation and tradition, and marketing the lab-grown diamond as “fun and play”. With this marketing approach, De Beers intended to not attach any symbolic meaning to the colorful lab-created stones, but rather promoting them as a sophisticated fashionable jewelry item. Furthermore, they first also not operated in the bridal jewelry segment to not compete against their own natural diamond brand while preserving the emotional value of natural stones.

LVMH luxury ventures, in turn, invested 90 million USD in Isreali start-up Lusix, a leading producer of lab-grown diamonds. Lusix claims to produce exclusively grown diamonds powered by 100% solar energy, branded as “sun-grown diamonds”. This move is also not about replacing natural diamonds, but using what is different, allowing for new shapes and textures. Furthermore, consumers are being given the choice between natural diamonds and lab-grown diamonds. This poses that lab-grown diamonds might be tapping into the luxury segment.

Figure 9: Price evolution of natural vs. lab diamonds for 1-carat (Zimnisky, 2023)

Another important trend is the rising importance of branded jewelry, specifically of international brands. In 2022, the demand for branded diamond jewelry increased significantly, 92 percent of all acquisitions were from well-known brands, including bridal and non-bridal diamond jewelry (De Beers Group, 2022). With 44 percent in 2016, the frequency of branded acquisitions has more than doubled since. Consumers seek an emotional alignment and value with a brand’s image, narrative, and what their core principles are based on. The role of luxury brands will be explained in the next chapter.

2.2. Luxury Purchase Motivation

To fully understand why (natural) diamonds belong to the luxury category, a definition of the term is needed and what implication luxury value and the role of brands have on the purchase motivation of these precious gems. This study tries to understand if lab-grown diamonds can

also be classified as luxury with the help of a luxury brand or if they belong to another category. Furthermore, it investigates if the luxury value can be communicated through perceived scarcity.

Many researchers from the past and present explain luxury by using quotes that are connected to their individual experiences and cultural domain, which keeps the concept still subjective, situational, and debatable (Wiedmann et al., 2007).

Although there is no universal definition that describes the idea, luxury generally refers to an idealized and inaccessible lifestyle for the sake of pleasure and indulgence. The definition of luxury has varied over time, whilst in the past possessing a specific object (like a car) has been considered luxury, we nowadays see it as a multidimensional concept. Therefore, the primary source of the issues surrounding the definition and assessment of luxury is its subjective nature. There are several different theories explaining the motivation for luxury consumption, but the oldest and most famous of these explanations is conspicuous consumption originating from Veblen (1899). Veblen assumes that people consume in a highly visible way to signal wealth to others who then infer status and power (Ko et al., 2019). Thorstein Veblen introduced in 1899 a concept that highlights the social dimension of consumption in the luxury sector. The Veblen effect explains how the demand for luxury goods increases as the prices of them rise, contradicting the traditional law of demand. It can be stated that luxury follows the anti-laws of marketing, which means unlearning the classical marketing principles (Kapferer & Bastien, 2009).

According to Veblen, consumers buy luxury goods to showcase wealth and distinguish themselves from others, making luxury brands crucial for status signaling. Conspicuous consumption therefore refers to the act of purchasing luxury goods not only for their functional utility but also to signal social status, wealth, and exclusivity to others. In the context of this study, a diamond engagement ring was chosen to assess the purchase intention of diamonds as it has the potential to display wealth and commitment, making brand choices essential in reinforcing social standing. Lab-grown diamonds, despite their ethical advantages, may face challenges in this context if they are perceived as less luxurious or prestigious than natural diamonds.

2.2.1. Luxury Products

According to Janssen et al. (2014), "a defining characteristic of luxury products is their scarcity or limited availability". When those rare perceived luxury products over-diffuse, they progressively lose their luxury character.

From a list of many characteristics, Heine and Phan (2011) studied that the major six characteristics to distinguish a luxury product are higher quality and price, aesthetics, rarity, symbolic meaning, and extraordinariness. These characteristics have something in common: they are all set apart from necessary and everyday products (Moraes et al., 2015). Another approach to validate a luxury product is created by Kapferer and Bastien (2009) who have set up structural criteria that have been tested by De Barnier et al. (2012), which encompass all the attributes a luxury product should entail (ranked from most to least discriminatory power):

1. *Elitism (very few people can buy it; it is very expensive);*
2. *Creativity (it is magical, very creative; high craftsmanship);*
3. *Uniqueness (rare; unique);*
4. *Distinction (for refined people; it shows who one is);*
5. *Refinement (attractive, dazzling);*
6. *Quality (superior; top quality);*
7. *Power (known, leading brand).*

2.2.2. Luxury Branding

Luxury brands not only sell products like any other brand but also market the story and customer experience behind them, attaching symbolic value to them. In contrast, no-name brands or brands with low brand awareness most likely lack the symbolic association of exclusivity, heritage, desirability, and other factors crucial to luxury (Kapferer & Bastien, 2009).

Managing a luxury brand successfully rests on a paradox, brands in the luxury sector need to be high in awareness and exclusive and rare at the same time (Kapferer & Valette-Florence, 2018; Wang et al., 2024).

The consumer´s perception of brands is a crucial part of customer-based brand equity (Keller, 1993), which is defined as how a brand´s success can be directly linked to customer´s attitudes towards the brand. Luxury brands are not inherently luxurious but must be perceived as such

by consumers (Hudders, 2012). This emphasizes the need to manage these perceptions effectively.

Almost all luxury brands rely on a compelling story of their origin, emphasizing the tradition and heritage, the brand's innovation, and design. The characteristics of a luxury brand include both the physical attributes of the product, and the symbolic values that the brand provides to the luxury consumers (Zhou, 2024).

Important researchers have identified key attributes luxury brands constitute, including heritage (Vigneron & Johnson, 2004), superior quality (Kapferer, 1997), higher prices (Keller, 2009), authenticity (Ko et al., 2019), and strong symbolic associations linked with desirability and exclusivity (Bastien & Kapferer, 2012). These attributes differentiate luxury brands from non-luxury brands or mass-market brands. Consumers evaluate luxury brands based on a combination of these attributes, prioritizing some over others when assessing the brand's luxury status (Vigneron & Johnson, 2004). Because luxury brands create desirability, it is expected that also non-customers of luxury brands may have brand knowledge such that there would be little or no difference between the luxury brand perception of customers versus non-customers (Romaniuk & Huang, 2019).

Successful brands manage to build up a whole identity, that covers the idea of prestige, an intangible supplement, “the beyond the actual product”, where the product itself only fulfills one of the brand manifestations. Brand identity entails brand ethics, which is the comprehensible aspect of a brand that consists of its values, worldview, and idealized representation; and brand aesthetics, which is the sensory aspect that influences the brand's tangible and physical manifestations or any possible interface between the brand and its customers (Chevalier & Mazzalovo, 2020).

Branded jewelry, especially from well-known luxury brands like Tiffany & Co., carries significant symbolic value, which often outweighs the intrinsic qualities of the products themselves. This brand value is built on trust, heritage, and emotional connection, making branded jewelry a desirable investment for consumers seeking exclusivity and status.

Since a significant part of luxury value and consumption stems from the value creation through the brand rather than the actual product itself, this study wants to investigate: *Can luxury brands influence the perceived scarcity of lab-grown diamonds, and therefore also increase purchase intention?*

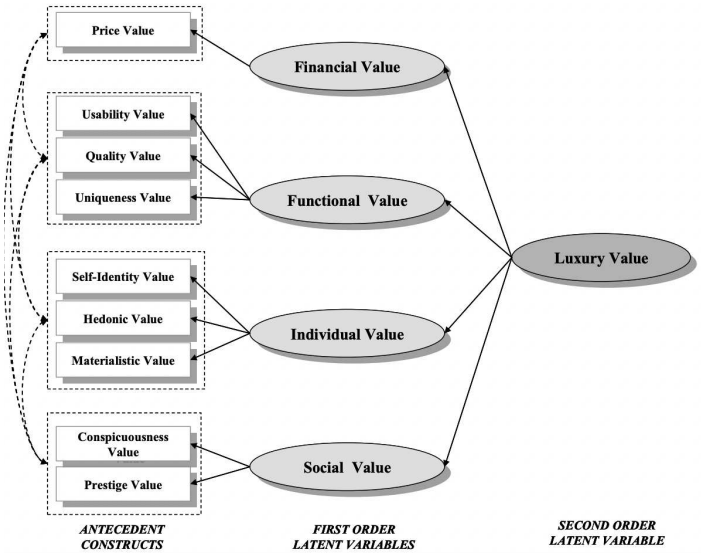
Little has been done to explain whether the perception of scarcity of lab-grown diamonds would be more favorable if introduced by a renowned luxury brand, which is why the above-mentioned research question is proposed.

2.2.3. Luxury Value Creation

It is important to understand how luxury is viewed based on personal value perceptions of luxury brands to understand the consumer´s experiences with it.

According to recent studies, the desire for and consumption of luxury products is influenced by several customer-perceived value factors, including financial, functional, individual, and social perspectives (Wiedmann et al., 2007), as seen in Figure 10.

Figure 10: Conceptual model measuring luxury value perception (Wiedmann et al., 2007)



These first-order values combined form the overall luxury value, indicating that luxury perception arises from a mix of financial, functional, individual, and social factors. The dotted arrows suggest relationships or influences among the antecedent constructs that contribute to the first-order values.

2.2.4. Luxury and Sustainability

As lab-grown diamonds pose a more sustainable alternative to natural diamonds, it is crucial to discuss the connection between sustainability and luxury, which are still perceived as rather conflicting ideas (Kunz et al., 2020).

Beckham and Voyer (2014) found that while luxury buyers often react positively to sustainable luxury products, they generally prefer not to purchase them.

It is also observed that consumers´ CSR beliefs about responsible luxury brands are negatively influenced by the relative brand conspicuousness, meaning that CSR beliefs are less favorable for more conspicuous brands (Janssen et al., 2017).

Adding to this, Davies et al. (2011) argues that the consideration of sustainability and ethics in purchasing behavior is significantly lower for luxury purchases rather than other purchases. This underlines, that sustainability and luxury are not only a question of compatibility in general, but also of how important sustainability in luxury purchases for consumer can be.

The narrative of traditional luxury as being associated with rarity, exclusivity and premium price often does not consider sustainability. However, there is a rising consumer demand for sustainable and ethical practices, which will most likely reshape the luxury industry. Lab-grown diamonds, as a more sustainable and environmentally friendly alternative to natural diamonds, represent this shift in consumer values.

Nonetheless, Janssen et al. (2014) also suggest, that luxury products that are durable and scarce (such as high-end jewelry) are perceived as more socially responsible than abundant ones, which poses a good fit with CSR. Attention must be paid to the type of products, as “ephemeral” luxury goods, like luxurious fashion, are not associated with CSR.

While sustainability adds value for an increasing number of consumers, tension remains between the traditional characteristics of luxury, such as exclusivity and scarcity, and the availability of lab-grown diamonds.

2.2.5. Luxury and Scarcity

As seen in the literature on luxury, scarcity and rarity are fundamental drivers of luxury perception. Kapferer (2012) set up a basic equation, stating that luxury equals rarity. This means that the luxury status of a product, which is necessary for asking high prices, will be diluted when its penetration rate goes up as too many people own it. When consumers believe that a product is scarce, it enhances its desirability (Verhallen, 1982). In the diamond industry, natural

diamonds are often framed as scarce due to the finite nature of diamond mines, and this scarcity has been central to their positioning as luxury items (Vigneron & Johnson, 2004).
Furthermore, luxury brands typically control the amount of luxury items within a given time frame, which can enhance the scarcity value of their products (Zhou, 2024). Additionally, as luxury brands generally have exclusive sales channels, the restriction in sales channels further increases the scarcity of luxury goods. The high price of luxury goods also determines that luxury goods are scarce goods.
As there is a not neglectable interplay between scarcity and luxury, especially between scarcity and diamonds, the next chapter investigates the concept and theories of scarcity to better understand how scarcity can enhance and create value, and ultimately drive purchase intention.

2.3. The Concept of Scarcity

As already pointed out earlier, scarcity is embedded in the idea of luxury and simultaneously closely tied to the distinctive features of natural mined diamonds. This is the most significant difference between lab-grown and natural diamonds, as the former cannot compete on the limitedness of natural resources. Nonetheless, there are also other ways to create perceived scarcity, besides natural limitedness.
This chapter sheds light on the theory of scarcity, the psychological mechanisms behind it, and its implications for marketers.

Scarcity is a basic economic problem, referring to a gap between the availability of limited resources and the limitless wants of people. This problem forces people to make decisions on how to allocate scarce resources efficiently to satisfy basic needs and as many additional wants as possible (Shi et al., 2020). The concept of scarcity in economic theory is crucial to understanding several marketing heuristics and psychological theories grounded on it.
However, scarcity in consumer behavior and marketing slightly differs from the economic theory, as it not exclusively refers to the natural limitedness of resources but also to a simulated or perceived limitation. To highlight limited availability, companies, and brands induce artificial scarcity by shortening supply and producing less than what is demanded.
There are two types of product scarcity, which systematically influence consumer choices: supply-based and demand-based scarcity.
Demand-based scarcity refers to high consumer demand exceeding its supply, driven by popularity and high demand. Strategic demand-induced scarcity happens with the launch of a

new product or scarcity appeals for marketing communications, whereas non-strategic scarcity occurs due to external factors such as panic buying. It communicates the widely spread usage and likeability of a product, indicating value to consumers who rely on other people´s opinions (Gupta et al., 2023; Ku et al., 2013).

On the contrary, supply-based scarcity occurs because of production constraints or other problems in the supply chain, driven by limited availability. Similarly, it can be strategic, stimulated by limited editions, or non-strategic, as a result of raw material shortage, insufficient production, or other external factors (Hamilton & Hosany, 2023). Finally, scarcity induced by supply can increase the desirability of a product by cueing signals of status and product quality (Lynn, 1992), as well as exclusivity and uniqueness (Ku et al., 2012).
As product scarcity is driven by both sides, a co-creation of value between marketers and consumers dictates the effectiveness of scarcity tactics (Hamilton & Hosany, 2023).

From a social psychology perspective, research on scarcity aims to explore the underlying mechanism of the heuristic of scarcity. Heuristics serve as a mental shortcut to simplify problems and avoid cognitive overload by experimental and trial-and-error methods.
The scarcity "heuristic" is defined by Cialdini (2001) stating "that opportunities seem more valuable to us when they are less available". Thus, scarcity results in higher desirability of products/ opportunities, shorter search time, and greater satisfaction with the acquired product (Lynn, 1991).
Therefore, the use of scarcity tactics in marketing is strongly connected to the studies of behavioral psychology and consumer behavior.

2.3.1. Theories on Scarcity

The psychological rationale behind scarcity can be explained by the four major theories on scarcity marketing, evaluating the effectiveness of scarcity to specific consumer characteristics that guide the relationship between perceived scarcity and value, desirability, and purchase intention. It is crucial to stress that these theories are not mutually exclusive and the effects of scarcity differ across consumer segments (Hamilton & Hosany, 2023).

a) Commodity Theory
b) Conformity Theory

c) Regret Theory
d) Reactance Theory

a) The Commodity theory by Timothy Brock (1986) was one of the first attempts to explain the psychological effects of scarcity on the enhancement of the value of anything that can be possessed. It builds on the idea that “any commodity will be valued to the extent that it is unavailable”, and that “threat increases commodity-seeking behaviors”. To fully understand this theory, however, an extended definition of its three core concepts is needed - i.e., commodity, value, and unavailability, which has been further developed by Lynn (1991).

To begin with, a “commodity” can be described as anything, experiences, messages or objects, fulfilling three criteria. Firstly, it must be useful or create some utility for the subject. Secondly, commodities must have the potential to be possessed. Lastly, a commodity must be transferable from one person to another. Given this definition, commodities are any marketable items or services.

“Value” is defined as a commodity's ability to influence attitudes and behavior (Brock, 1968). Enhancing a commodity's value increases its perceived utility, making it more desirable. For marketers, the relevance lies in how scarcity can boost a product's value and desirability, aligning with their goal to make products more sought after.

Finally, the term “unavailability” refers to scarcity and limited availability of a commodity, defined by Brock (1968) as constraints on supply, acquisition costs, possession restrictions, and delays in provision. In marketing, this concept is reflected in practices like limited editions, exclusive distribution, prestige pricing, and order size restrictions, making products less accessible.

These strategies align with commodity theory, which predicts significant psychological effects of unavailability in consumer behavior. However, this theory fails to explain the underlying psychological factors of perceived scarcity effects on value.

Commodity theory initially suggested that scarcity increases a commodity's value because owning scarce items can create a sense of personal uniqueness or distinctiveness. This idea led to the development of a separate theory about the need-for-uniqueness theory, which posits that people desire to feel moderately unique (Fromkin, 1970; Snyder & Fromkin, 1980). Research supports that individuals react negatively to being too similar to others, and owning scarce items can enhance their sense of uniqueness since material possessions are often viewed as an extension of the self (Belk, 1988). Therefore, the need-for-uniqueness theory can explain why scarcity increases a commodity's perceived value.

b) The conformity theory, proposed by Jones (1984), explains scarcity as the result of adherence to group norms. Individuals, therefore, try to align their beliefs, attitudes, and behaviors with group norms. Consumers showing a higher need for conformity tend to value a product more as many people are purchasing it, which can be proven by the unavailability of the product (Shi et al., 2020). The product must neither be limited by its supplier nor exclusive in nature, scarcity occurs because the product´s supply simply cannot meet demand (Van Herpen et al., 2009). In this scenario, scarcity signals popularity, people want to conform to this preferred product, which in turn leads to an increase in demand. A typical example that underlines this theory are empty supermarket shelves, which showcase customer purchase intentions (Shi et al., 2020). It can be said that conformity theory explains the effects of demand-based scarcity.

c) The third theory on product scarcity is the regret theory which refers to the consumer's desire to avoid making the wrong choice and future regret. In fact, product scarcity requires people to decide between buying now versus risking missing out on the purchase opportunity due to the desired item being out of stock soon (Shi et al., 2020). Therefore, people showing a higher desire for future regret will purchase a product not because of its utility but because of their concern that the product could be unavailable in the future.
This phenomenon especially occurs when people are faced with time pressure and coupons with expiration dates, which, under special circumstances, can even lead to hoarding behavior (Sterman & Dogan, 2015).

d) Lastly, the theory of the psychology of reactance appears when individuals feel threatened by their freedom to choose products, resulting in them becoming unpleasantly more motivated to get the restricted product in order to restore their freedom. This behavior is also called motivational arousal (Brehm, 1966). It creates an urgent desire for the individual to engage in an activity he cannot enjoy unlimitedly anymore, which ultimately enhances its perceived value and attractiveness.
Although used less frequently in the literature, reactance theory can help explain consumer demand for products limited by government policies or market regulation such as pirated media or by parents restricted products like Softdrinks. Hence, in this scenario, perceived scarcity triggers psychological reactance stimulating the individual to acquire the desired but restricted product (Shi et al., 2020).

2.3.2. Strategic Use of Scarcity in the Diamond Industry

Diamonds are an interesting case for the theory of scarcity, they can be classified as naturally scarce, as their natural resource is finite and therefore only exists in limited quantity. However, the diamond industry has also been historically influenced by artificial scarcity, thus their perceived scarcity is also a product of effective marketing strategies.

For decades, De Beers has been using scarcity tactics to enhance its diamonds´ value by marketing them as rare and scarce, as mentioned in the chapter about diamonds.
According to Barton et al. (2022), scarcity can increase brand exclusivity, simultaneously increasing value to consumers during consumption and after purchase. This perceived scarcity comes at a cost, consumers had to pay higher prices for diamonds for decades because of the restriction of diamond supply by De Beers. Diamonds, however, are products affiliated with the category of luxuries rather than necessities, which gives consumers the option to refrain from buying them. Nevertheless, consumers who opt for these products or require scarce necessities will most likely take these costs (Hamilton & Hosany, 2023).
Recent studies have shown that for high visibility, hedonic, advertising-driven, and experiential products supply-based scarcity works most efficiently (Barton et al., 2022; Gupta et al., 2023). For instance, for products with high symbolic value, there is a significant positive relationship between the need for uniqueness and perceived value. Contrarily, demand-based scarcity works best for low-visibility, utilitarian, and low-involvement products (Hamilton & Hosany, 2023).

De Beers is an example of a company strategically using both supply-, and demand-based scarcity. The supply-based scarcity is exploited by restricting diamond supply as well as to market diamonds as a rare and precious gem, used to ask for high prices (Bergenstock & Maskulka, 2001). In fact, a diamond is a highly visible and conspicuous product, which is why supply-induced scarcity creates more favorable responses from consumers (Barton et al., 2022). At the same time, De Beers managed to also stimulate consumer demand through the popular advertisement “A Diamond is Forever”.
To conclude, De Beers skillfully manipulated supply and demand to cultivate the perception of diamonds as a luxurious, forever-lasting, exclusive, and scarce commodity (Hamilton & Hosany, 2023). Nonetheless, a key factor in a brand´s ability to leverage product scarcity in the long run is how differentiated its products are perceived to be. For decades, De Beers managed to keep the perception of scarcity high with few and not-authentic substitutes on the market. With the rise of lab-grown diamonds, the perceived scarcity of diamonds could be challenged

as it appeals to a once hesitant, but growing, customer base with its green and ethical benefits (Danziger, 2021). As perceived differentiation between lab-grown and natural diamonds diminishes, De Beers' ability to leverage scarcity strategically may decrease (Hamilton & Hosany, 2023).

In 2016, the Diamond Producers Association (DPA), an international alliance of the biggest diamond mining companies, launched its campaign "Real is Rare. Real is Diamond" to counteract the threat posed by the lab-grown diamonds industry, emphasizing the commodity theory while also targeting people with a high need for uniqueness (De Angelis et al., 2021). This campaign was aimed at demonstrating the natural diamond´s authentic luxury position.

To summarize, perceived scarcity enhances a commodity's value and increases the urgency to possess the specific commodity, resulting in a higher purchase intention. However, most of the research on scarcity only focuses on existing products and brands familiar to the individual. Familiarity with a brand suggests consumers have more confidence in the brand, hence leading to an increased purchase intention (Laroche et al., 1996). Similarly, scarce products of symbolic brands increase the willingness to purchase, as strong symbolic brands signal the individual´s status and identity (Shi et al., 2020). Unfortunately, there is only little knowledge and no empirical evidence about the scarcity of unfamiliar brands and products.

3. Methodology

The following sections outline the methodology employed in this study to investigate the proposed hypotheses and study model. They contain the theoretical framework and hypotheses, a proposal of the quantitative research method, a detailed description of the research design, data collection procedures, and analytical techniques used to explore the hypotheses. Furthermore, information on the scales of the study variables is provided.

3.1. Theoretical Background and Hypotheses

All hypotheses proposed in this section are based on the literature review presented in chapter two. This subchapter also provides detailed explanations of the reasoning behind the hypotheses and presents the research questions. The research questions proposed by the author are the following:

RQ 1: Does perceived scarcity influence the purchase intention of lab-grown diamonds versus natural diamonds?

RQ 2: Can luxury brands influence the perceived scarcity of lab-grown diamonds and therefore increase purchase intention?

Due to the absence of literature on new/ unknown brands and products and their perceived scarcity, the proposed study aims to investigate a specific quantitative research model that entails different testing conditions. It is also not explored yet, particularly for the diamond jewelry industry, whether perceived scarcity is created through the brand or stems from the product itself.

Several researchers have anticipated that scarcity, whether real or perceived, is central to luxury consumption, hence this research investigates the different effects of diamond origin on scarcity perception and purchase intention. Specifically in industries like diamond jewelry, the perceived scarcity is often closely tied to high symbolic value and signaling social status. This study explores how scarcity can create value by leveraging purchase intention.

H1: Diamond origin is directly associated with purchase intention.

H2: Diamond origin is directly associated with perceived scarcity.

The purchase intention of consumers for either lab-grown or natural diamonds might change depending on their price and their perceptions regarding their scarcity and environmental impact (De Angelis et al., 2021).

For example, Tiffany & Co.'s distinctive blue box packaging and decades of heritage elevate their diamond rings far beyond the value of the physical materials. This luxury branding creates symbolic, and hence emotional value.

In contrast, non-branded jewelry brands or brands with low brand awareness lack this symbolic association, making it harder to charge a premium price or generate the same level of consumer desire. This differentiation of brand type or status of the brand is critical in understanding the impact of a brand on perceived scarcity. While lab-grown diamonds are becoming more popular due to their sustainability and affordability, the absence of a prestigious brand name may hinder their perceived scarcity.

The author suggests, that when lab-grown diamonds are coupled with a prestigious brand, the perception of scarcity can significantly influence consumer behavior. This would imply that consumers may perceive branded luxury diamonds as more exclusive or valuable, regardless of their origin. This is supported by the fact that the symbolic value perceived by the customer often arises from the marketing communication of the brand (Tan & Ming, 2003). Therefore, this research also investigates the importance of luxury branding in shaping consumer perceptions of value and scarcity in the diamond jewelry market.

H3: Brand type moderates the relationship between diamond origin and perceived scarcity.

H4: Perceived scarcity is positively associated with purchase intention

H5: The relationship between diamond origin and purchase intention is mediated by perceived scarcity.

H6: The indirect effect of diamond origin on purchase intention through perceived scarcity is moderated by brand type.

3.2. Proposal of the Quantitative Research Method

The choice of a quantitative research method for this study is driven by the need to objectively measure and analyze the relationships and effects between several variables. A quantitative

experiment research design was chosen as it allows for testing between subjects and the outcomes can be generalized. This study is conducting a between-subjects 2x2 factorial design, assigning respondents randomly to one of four groups. All four groups are presented with the same scenario with different manipulations and are then asked to answer the same questions. This allows the researcher to efficiently measure the effect of the treatment conditions and compare between-subjects.

The main variables included are diamond origin (lab-grown vs. natural), brand type (luxury vs. no-name), perceived scarcity, and purchase intention.

With the use of quantitative methods, a wide range of data and information can be collected, providing a clear, data-driven understanding of consumer perceptions, attitudes, valued features, characteristics, and behaviors. It simultaneously allows for anonymously capturing relevant information such as socio-demographics. Additionally, it offers flexibility in data collection and ease of reaching data from a large number of respondents. Lastly, using a predesigned structured questionnaire is very cost-effective, collects data fast and the social desirability bias is lower.

The application of a moderated mediation analysis is particularly suitable for this proposed research as it allows for a nuanced exploration of how the direct effect of diamond origin on purchase intention is mediated by perceived scarcity, while also examining how this mediating effect may vary depending on the type of brand (moderator).

This approach helps to establish a causal pathway and uncovers the conditions under which the mediation effect is strengthened or weakened. Furthermore, it provides deeper insights into the complex interplay between product and brand attributes and the consumer decision-making processes.

Overall, the quantitative research method, in particular the moderated mediation model, provides robust, generalizable results that can contribute to both, academic knowledge and practical implications for the diamond industry.

3.3. Experimental Design and Procedure

The quantitative data necessary for the proposed research method was assessed through the survey software platform Qualtrics. Firstly, participants were getting familiarized with the context of the study.

The study adheres to the principles of ethical research, ensuring the privacy and protection of participants' data. Participants were informed that their responses would be collected anonymously and used solely for academic research purposes. Once participants provided informed consent, they completed self-report questionnaires online via Qualtrics.

The survey aimed to measure participants' purchase intention of an engagement ring featuring either a lab-grown diamond or a natural diamond from either a luxury or "no name" brand, which was self-invented. The product choice for the engagement ring seems logical because they are often viewed as symbolic and significant purchases. The high emotional value and financial investment, as well as their relevance in demand to the diamond market and the accompanying luxury and scarcity considerations, make them an ideal product for studying purchase intention on diamonds. Furthermore, the purchase of engagement rings might resonate with both women and men, as men often take the lead in purchasing them but women are the ones who will wear them.

To avoid incompleteness of the data extracted from the survey, respondents had to answer each question before moving on to the next one, this was programmed in Qualtrics as "force response".

Participants stated their experience with lab-grown diamonds to test their knowledge, received a small introduction about the difference between lab-grown and natural diamonds, and were then asked about their general willingness to pay for diamonds and if they have ever purchased diamond jewelry before. Before being supplied with the randomly assigned scenario, they were also asked a question about the importance of corporate social responsibility (CSR). This was intentionally asked before being presented with the scenario to exclude any potential influence of their decision from the scenario on this topic and to investigate internal validity related to the potential presence of confounding variables within the study. In this case, a higher level of CSR could make individuals perceive natural diamonds more negatively, and lab-grown diamonds more positively.

Next, the between-subjects setup splits the respondents with the help of the randomizer into four different groups, see Table 1.

Table 1: Experimental groups

Origin of Diamond/ Brand	Tiffany & Co. (1)	Sparkling Diamonds (0)
Lab-Grown Diamond (1)	(1,1) N=65	(1,0) N=63
Natural Diamond (0)	(0,1) N=67	(0,0) N=58

Respondents were first presented with their individual scenarios. Price and a picture of the diamond engagement ring were intentionally not given, as these could influence the purchase intention from a perspective that is not relevant to the author. Furthermore, both factors, namely the independent variable as well as the moderator variable were manipulated by randomly assigning the scenarios to participants and controlling the conditions. These manipulations allow for examining their direct effects on perceived scarcity and purchase intention, as well as their interaction effects.

The four different scenarios are:

- **Group (0,1)** Imagine you are about to buy/ choose an Engagement Diamond Ring (for yourself or your loved one) and you come across a natural Diamond Ring by the luxury brand Tiffany & Co.
- **Group (0,0)** Imagine you are about to buy/ choose an Engagement Diamond Ring (for yourself or your loved one) and you come across a natural Diamond Ring by a new brand named "Sparkling Diamonds".
- **Group (1,1)** Imagine you are about to buy/ choose an Engagement Diamond Ring (for yourself or your loved one) and you come across a Lab-Grown Diamond Ring by the luxury brand Tiffany& Co.
- **Group (1,0)** Imagine you are about to buy/ choose an Engagement Diamond Ring (for yourself or your loved one) and you come across a Lab-Grown Diamond Ring by a new brand named "Sparkling Diamonds".

After being presented with the individual scenario, respondents were asked to answer questions about perceived scarcity, brand image, and purchase intention of lab-grown versus natural diamonds. After that, respondents had to indicate their general favorability of the origin of diamonds in general, and in the context of engagement rings. This was followed by a control question, designed to evaluate participants' familiarity with the brand featured in the scenario. The purpose of this question is to determine whether respondents were engaging with the survey conscientiously or merely clicking through it randomly. "Sparkling Diamonds" is a fictitious brand, and thus participants should not recognize it. Additionally, this question intends to assess the extent to which those presented with the Tiffany brand were genuinely knowledgeable about it, as opposed to having only little brand awareness. Lastly, the respondents completed a sociodemographic questionnaire, asking for their age, gender, yearly salary, and nationality.

Overall, this survey setup ensures that the hypotheses can be tested, and the research questions can be answered.

3.4. Sample

Before distributing the survey to a large audience, a pre-test was conducted whereby three different people were asked to fill it out and report issues. After all problems were solved and the length was appropriate, the survey was ready to be sent out. The distribution of the survey was executed via different social media platforms such as LinkedIn and Instagram, as well as through one-by-one outreach and group outreach. Furthermore, friends and family were asked to share the survey with their network.

The distribution techniques include a mix of non-probability sampling methods, entailing convenience sampling, snowball sampling, and social media sampling.

Due to a lack of resources and or access, the author mainly relied on its network and the network of their friends and family. Therefore, the sampling lacks representativeness as it cannot represent all segments of the population, and potentially accounts for limited inferential power, and potential selection bias.

In total, 330 participants filled out the questionnaire, which was live from the 13th of August until the 27th of August 2024. As 77 participants did not complete the questionnaire to 100%, they were excluded from the sample. This leaves us with a sample size of 253 participants who filled out the questionnaire. To be included in the analysis, participants had to meet no specific criteria, there was also no requirement for a specific age or gender.

The final sample included 253 participants. On average, participants were 41.02 years old (SD = 15.97 years) with an age range of the sample between 19 and 87 years, the exact distribution can be seen in Figure 11. A bit more than two-thirds of women (172; 68.0%) and less than one-third of men (79; 31.2%) were included in the final sample.

The biggest share of income is represented by 82 participants (32%), who earn more than 90,000 € per year. The second biggest group contains 54 participants (21.3%) accounting for less than 30,000 € of income per year, closely followed by 51 participants (20.2%) earning between 50,000 and 69,999 € yearly. The smallest groups of income are represented by 34 respondents (13.4%) indicating a yearly income between 30,000 and 49,999 €, and 33 individuals (13%) indicating a yearly income between 70,000 and 69,999 €.

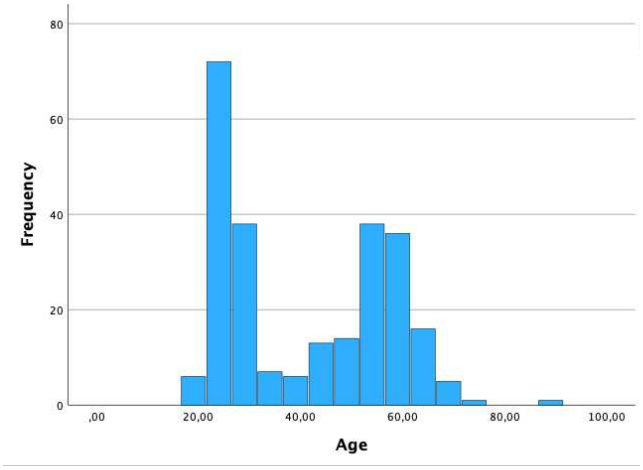
Of all participants, 83.5 % hold a German nationality. Other nationalities represented in the survey are (listed by representative size) Austrian, French, Italian, Hungarian, Swiss, Lebanese, Swedish, Mexican, Australian, American, British, Chinese, Spanish, Belgian, and Finnish.

Regarding awareness of lab-grown diamonds, 180 participants (71.1%) stated that they had heard about them before, of which 23 respondents (12.8%) have also purchased them in the past.

Almost half of the respondents (131; 51.8%) already have previous experience in buying or choosing diamond jewelry.

The general willingness to pay for diamond jewelry is dominated by 78 participants (30.8%) stating that they would pay less than 2000 €, closely followed by 75 participants (29.6%) willing to pay between 20001 and 4000€. 56 people (22.1%) responded they are willing to spend more than 6,000 € on diamond jewelry, and 44 respondents (17.4%) stated to be willing to pay between 4,001 and 6,000 €.

Figure 11: Age distribution of survey respondents



3.5. Measures

In this study, several key variables were measured to examine the effects of diamond origin, brand type, and perceived scarcity on consumer purchase intentions. The primary variables included diamond origin (X), perceived scarcity (M), brand type (W), and purchase intention (Y). Each variable was carefully operationalized and measured using validated scales where appropriate. Below is a detailed description of each measure used in the analysis.

Independent variable.

The origin of the diamond was randomly assigned to survey respondents in the context of an experiment. The variable named is coded dichotomously, where lab-grown diamond is coded as “1” and natural diamond as “0”.

Dependent variable.

Purchase intention was assessed after being presented with the scenario, to assess the respondent´s likelihood of purchase intention towards the presented engagement ring in the corresponding scenario. One item was measured on a 7-point Likert scale, ranging from 0 (not likely at all) to 6 (extremely likely), asking "Please state your likelihood of purchase intention for the presented engagement ring, under the condition that you generally want to buy/ choose a diamond engagement ring. - How likely are you to purchase this specific diamond engagement ring?”.

Participants who chose a likelihood of smaller or equal to 2 had the chance to further explain why they definitely would not buy the product, to gain more insights about their reasoning.

Moderator.

Brand type was also randomly assigned to survey respondents in the context of the experiment. A fictional brand named “Sparkling Diamonds” was created to test the effect of a no-name brand with no brand awareness against a well-established luxury brand with high assumed brand awareness. Tiffany & Co was chosen to represent the brand type luxury brands as they are very well-known for their high-quality craftsmanship and their diamond engagement rings which come in their iconic blue boxes. The US-American luxury jewelry brand, founded in 1837 by Charles Lewis Tiffany is one of the most successful high-end jewelry retailers with a longstanding history and tradition, therefore widely known among the population.

The no-name brand is coded as “0”, and Tiffany & Co as “1” respectively.

Mediator.

Perceived scarcity was assessed asking 4 questions about the perceived scarcity of the presented engagement ring in the randomly assigned scenario. Four items were assessed using a 7-point Likert scale, ranging from 0 (not agree at all) to 6 (strongly agree). Three of the four items were provided by Janssen et al. (2014): “This product is made of rare and precious materials”, “This product cannot easily be found”, and “This product is unique, original”. Additionally, the author

added a question to assess their perceived availability of the product "I believe that the availability of this diamond engagement ring is limited".

Cronbach's α for the scale was .87, representing very high covariations of items. This high Cronbach's α indicates a very high level of internal consistency among the items measuring perceived scarcity. To conclude, this reflects the strong covariation among the items, confirming that they reliably assess the same underlying construct of perceived scarcity.

Control Variables.

The author identified also other important factors that could have an impact on the purchase intention, they therefore have been used as control variables.

Corporate Social Responsibility was assessed using the item "How important are ethical and sustainable business practices to you?" on a 7-point Likert scale, ranging from 0 (not important at all) to 6 (very important).

Other control variables are used such as age, gender, yearly income, willingness to pay for diamond jewelry, previous experience in buying diamond jewelry, familiarity with the brand and education about lab-grown diamonds.

3.6. Analysis

After having reached a sufficient amount of responses for the survey, the questionnaire data was extracted and inserted into SPSS. To test the six hypotheses, a moderated mediation regression was conducted using PROCESS Macro version 4.2 (Hayes, 2022). First, the data of the 253 participants in the final sample was prepared in SPSS. Then, a moderated mediation analysis was performed using Model 7 of Hayes' (2018) PROCESS macro. PROCESS macro's Model 7 conducts a moderated mediation regression, a statistical technique used to examine whether the indirect effect of an independent variable on a dependent variable, mediated through a third variable, is influenced by a moderator. The model tests the significance of the mediation effect while also assessing whether the strength or direction of the mediation varies depending on different levels of a moderating variable.

In this study, the origin of the diamond (lab-grown vs natural diamond) served as the independent variable (X), purchase intention as the dependent variable (Y), type of brand (luxury vs no-name) as the moderator (W), and perceived scarcity as the mediator (M). In the moderated mediation analysis, the effect of diamond origin on purchase intention was examined

both directly and indirectly, accounting for the mediator and the potential moderating influence of brand type.

The PROCESS macro employed bootstrapping, a resampling method, to estimate the indirect effect of diamond origin on purchase intention. Bootstrapping involves the generation of multiple samples from the data and performing moderated mediation analyses on each, which creates a distribution of indirect effects. Based on these, confidence intervals for the estimated indirect effect can be calculated. Significant effects can be identified by the confidence interval of the bootstrapping results when they do not include zero, the effect can be considered statistically significant. In this study, bootstrap confidence intervals based on 5,000 bootstrap samples and 95% confidence intervals were used to determine the significance of the indirect effects. Using a high number of bootstrap samples, e.g. 5000, as well as a narrow confidence level, such as 95%, ensures the robustness and reliability of the moderated mediation analysis results and is standard practice.

4. Results

4.1. Preliminary Analysis

Before proceeding with the moderated mediation analysis, a series of correlation analyses have been carried out. Table 2 shows descriptive statistics of the study variables. This includes means, standard deviations, ranges, correlations, and Cronbach´s α. The relationships between variables are examined using Pearson correlations. Significant correlations between study variables include the moderately positive correlations of yearly income with willingness to pay for diamonds ($r = 0.431$, $p < 0.01$), indicating that higher income levels are associated with a greater willingness to spend on diamond jewelry. This suggests that financial capacity plays a significant role in diamond-related purchasing decisions.

Previous purchase experience has a significant negative correlation with yearly income ($r = -0.353$, $p < 0.01$) and WTP for diamonds ($r = -0.460$, $p < 0.01$), implying that individuals who had previously purchased diamonds may currently have lower incomes or a reduced willingness to pay for additional diamond purchases.

Perceived scarcity is negatively correlated with diamond origin ($r = -0.332$, $p < 0.01$), suggesting that lab-grown diamonds are perceived as less scarce than natural diamonds. This supports the hypothesis that diamond origin influences scarcity perceptions.

Purchase intention is positively correlated with perceived scarcity ($r = 0.365$, $p < 0.01$), indicating that when diamonds are perceived as more scarce, purchase intentions increase. This relationship aligns with the core assumption in the model regarding the role of perceived scarcity in driving purchase intention.

Brand familiarity is highly correlated with the brand type ($r = 0.581$, $p < 0.01$), meaning that the luxury brand Tiffany & Co. is significantly more familiar to respondents than the no-name brand “Sparkling Diamonds”. This question serves as a manipulation check, to assess whether respondents paid attention to the survey, therefore it was expected that individuals supplied with the no-name brand show low brand familiarity. Hence, the manipulation check was successful, although some outliers stated a high brand familiarity with the fictional brand.

Other significant relationships include that income is positively correlated with age ($r = 0.368$, $p < 0.01$), reflecting the typical increase in income with age due to career progression.

The importance of CSR is also positively correlated with age ($r = 0.225$, $p < 0.01$), indicating that older respondents tend to place higher importance on ethical and sustainable business practices.

These preliminary findings show important relationships that align with the hypotheses of the study. Specifically, the negative correlation between the diamond origin and perceived scarcity, as well as the positive relationship between perceived scarcity and purchase intention, support the mediation hypothesis proposed in the moderated mediation model. Additionally, the significant role of willingness to pay may warrant consideration in the interpretation of results, as they could influence the overall model.

Based on these correlations, the main moderated mediation analysis will further investigate how these variables interact in a more complex model, examining direct and indirect effects.

Table 2: Means, standard deviations, and correlations between study variables

Means, Standard Deviations, and Correlations between study variables (N=253)

				Correlations											
Variable	***M***	***SD***	**Range**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**
1. Gender	1,70	,48	1-2												
2. Age	41,02	15,97	19-87	,070											
3. Yearly Income	3,21	1,54	1-5	-,280**	,368**										
4. WTP Diamonds	2,31	1,13	1-4	-,090	,154*	,431**									
5. Previous Purchase Experience Diamonds	1,48	,50	1-2	-,064	-,292**	-,353**	-,460**								
6. Education LGD	1,37	,63	1-3	,113	,128*	-,056	-,133*	,184**							
7. Importance CSR	4,14	1,63	0-6	,105	,225**	,106	,013	-,097	-,008						
8. Diamond Origin	,51	,50	0-1	,132*	,028	-,061	,025	-,043	,081	-,028					
9. Brand Type	,52	,50	0-1	-,097	-,034	-,070	-,124*	,053	-,001	,096	-,028				
10. Perceived Scarcity	3,10	1,58	0-6	,005	-,049	,001	-,059	-,036	,050	,085	-,332**	,104			
11. Brand Familiarity	2,27	2,17	0-6	,027	-,045	,120	,102	-,133*	-,097	,113	-,025	,581**	,160*		
12. Purchase Intention	2,61	1,79	0-6	,061	-,068	,004	-,017	-,047	,054	,092	-,024	,093	,365**	,253**	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note. The range displays the observed range of values in the dataset. N= 253

1. Gender: 1 = male; 2 = female.
3. Yearly Income: 1 = < 30,000 €; 2 = 30,000-49,999 €; 3 = 50,000-69,999 €; 4 = 70,000-90,000 €; 5 = > 90,000 €
4. WTP Diamonds: 1 = < 2,000€; 2 = 2,000-4,000€; 3 = 4,001-6,000€; 4 = >6,000€
5. Previous Purchase Experience Diamonds: 1 = yes; 2 = no
6. Education LGD: 1 = yes; 2 = no; 3 = not sure
8. Diamond Origin: 0 = natural diamond; 1 = lab-grown diamond
9. Brand Type: 0 = "Sparkling Diamond"; 1 = Tiffany & Co.

4.2. Test of Hypotheses

All hypotheses have been tested using moderated mediation regression (Model 7) of Hayes' (2022) PROCESS macro for SPSS. In Step 1, the study variables origin of the diamond, brand type, perceived scarcity, and purchase intention were assigned their respective roles as predictor, outcome, moderator and mediator variables in the regression. In Step 2, the settings of moderated mediation regression were set to using 5,000 bootstrap samples and 95% confidence intervals. All the moderated mediation regression results can be found in the appendix.

H1: Diamond origin is directly associated with purchase intention.

The analysis revealed a marginally significant direct effect of diamond origin on purchase intention. The coefficient for diamond origin is 0.39 (SE = 0.22), with a t-value of 1.76 and a p-value of 0.08, which suggests that natural diamonds tend to have a slightly higher purchase intention than lab-grown diamonds. However, this relationship is not statistically significant at the 0.05 level. The 95% bootstrapped confidence interval [-0.05, 0.83] contains zero, indicating that the direct effect is not significant. Therefore, hypothesis 1 must be rejected. The origin of the diamond is not significantly linked to purchase intention.

H2: Diamond origin is directly associated with perceived scarcity.

The regression results show that the independent variable diamond origin has a significant negative effect on perceived scarcity. The coefficient for diamond origin is -1.01 (*SE* = 0.27), with a *t*-value of -3.74 and $p < 0.001$. The 95% confidence interval [-1.55, -0.48] includes no zero, indicating statistical significance. The inverse relationship suggests that an increase in the origin of diamonds comes with a decrease in perceived scarcity. Thus, lab-grown diamonds are perceived as significantly less scarce than natural diamonds. Therefore, the statistical analysis does support H2. The origin of diamonds is a significant predictor of perceived scarcity.

H3: Brand type moderates the relationship between diamond origin and perceived scarcity.

The interaction term between diamond origin and brand type (luxury vs. no-name) on perceived scarcity is not statistically significant. The coefficient for the interaction effect (X_isLab * M_Luxury) is -0.04 (*SE* = 0.37), with a *p*-value of 0.91. The bootstrapped confidence interval [-0.78, 0.70] includes zero, indicating that brand type does not significantly moderate the relationship between diamond origin and perceived scarcity. Hence, H3 is not supported.

H4: Perceived scarcity is positively associated with purchase intention.

The non-standardized regression coefficient for the relationship between perceived scarcity and purchase intention shows a strong positive and significant association (B = 0.45, SE = 0.07), and the t-value of 6.47 ($p < 0.001$) confirms this relationship. The 95% bootstrapped confidence interval [0.32, 0.59] does not contain zero, indicating a significant positive association. Thus, Hypothesis 4 is supported. Diamonds perceived as being more scarce lead to higher purchase intention.

H5: The relationship between diamond origin and purchase intention is mediated by perceived scarcity.

The indirect effect of diamond origin on purchase intention through perceived scarcity is significant. The bootstrapped confidence interval is [-0.46, -0.20], which does not contain zero. This suggests that perceived scarcity mediates the relationship between diamond origin and purchase intention. Specifically, lab-grown diamonds are perceived as less scarce than natural diamonds, and this lower perception of scarcity subsequently decreases purchase intention. The indirect effect estimate (B = -0.33, SE = 0.07) shows that for each unit change in diamond origin (lab-grown vs. natural), purchase intention decreases by 0.33 units via the mediation of perceived scarcity.

Thus, H5 is supported. The influence of diamond origin on purchase intention operates through perceived scarcity, where the lower perceived scarcity for lab-grown diamonds reduces purchase intention.

H6: The indirect effect of diamond origin on purchase intention through perceived scarcity is moderated by brand type.

The index of moderated mediation is -0.0198, with a bootstrapped confidence interval of [-0.39, 0.30], which contains zero. This indicates that the indirect effect of diamond origin on purchase intention through perceived scarcity does not significantly differ based on brand type. Thus, H6 is not supported.

To summarize, the total effect of diamond origin on purchase intention was tested, indicating a weak positive relationship (B = 0.39, SE = 0.22). However, this result was not statistically significant (t = 1.76, p = 0.08). This suggests that the relationship between diamond origin and purchase intention operates primarily through perceived scarcity, as evidenced by the

significant mediation effect. The brand type does not significantly alter this relationship, indicating that there is no moderation effect.

The overall variance explained in purchase intention by the model ($R^2 = 0.1437$) suggests that 14.37% of the variability in purchase intention can be attributed to the combined effects of diamond origin, perceived scarcity, and brand type. The overall model is significant ($F(2, 250) = 20.98$, $p < 0.001$), meaning the predictors explain a significant portion of the variance in purchase intention. The strongest contribution to purchase intention stems from the mediation pathway ($X \rightarrow M \rightarrow Y$).

The model was also tested for significant effects of control variables like CSR importance, and yearly salary, however these did not show a significant effect.

The results show that perceived scarcity plays a significant mediating role in the relationship between diamond origin and purchase intention. As for scarcity, approximately 11.91% ($R^2 = 0.1191$) of the variance can be explained by diamond origin, brand type, and their interaction. The model is significant ($F(3, 249) = 11.22$, $p < 0.001$) meaning that the independent variables collectively explain a significant portion of the variance in perceived scarcity.

Natural diamonds are perceived as scarcer, which drives higher purchase intentions than lab-grown diamonds. However, the moderation effect of brand type on the relationship between diamond origin and perceived scarcity was not significant.

5. Discussion

This study aimed to explore the influence of diamond origin, brand type, and perceived scarcity on consumers´ purchase intention, by performing a moderated mediation analysis. Specifically, it was suggested that the diamond origin could be linked to purchase intention (H1) and to perceived scarcity (H2). Based on these hypotheses, it was also suggested that the brand type moderates the relationship between diamond origin and perceived scarcity (H3) and that perceived scarcity is positively associated with purchase intention (H4). Furthermore, it was proposed that the relationship between diamond origin and purchase intention is mediated by perceived scarcity (H5). Lastly, the moderated mediation analysis proposes that the indirect effect of diamond origin on purchase intention through perceived scarcity is moderated by brand type (H6). H1, H3, and H6 are not significant, implying that there is no moderation effect of brand type. However, H2, H4, and H5 are found to be statistically relevant, emphasizing that there is a mediation effect of perceived scarcity.

Potential reasons for the non-significance of diamond origin and purchase intention.

The direct effect of diamond origin on purchase intention was not statistically significant although the results suggest a weak tendency for natural diamonds to be associated with slightly higher purchase intentions compared to lab-grown diamonds. This result is rather unexpected as previous literature has suggested that consumers may perceive natural diamonds as more authentic and emotionally valuable, thus driving higher purchase intentions (Kapferer & Bastien, 2009). These findings indicate that this effect may not be as pronounced as expected, particularly when other factors like brand type and perceived scarcity are considered.

There could be several reasons that might explain the varying results.

Firstly, this study analyses the effects of diamond origin on purchase intention at a between-person level, whereas a within-person basis could give more insights on the different effects. This study approach compares diamond origin effects between participants where they are either presented with a lab-grown or a natural diamond, whereas within-person studies would present the participant with both. Between-person studies might be less appropriate to uncover the different effects of diamond origin on purchase intention, as it could also be that an individual generally would not want to purchase an engagement ring featuring a diamond, regardless of their origin. So, their preference for either a lab-grown diamond or a natural diamond cannot be reflected in the survey, which is why we do not see if a low purchase intention is because they do not want to buy a diamond engagement ring in general or is it

because they would prefer the other diamond origin. Although the survey asked why they would not buy the diamond ring when they selected a purchase intention of >=1, however, these results are not meaningful enough. Individuals barely received any information about the product they should purchase, meaning they had to make a very uninformed decision. They were only supplied with the brand name, the diamond origin, the carat size, and the fact that they would want to buy a diamond engagement ring. However, what was not mentioned were the price, the style of the ring and a picture attached, or other useful information about material or company practices. This could explain why the present study found no significant total effect or individual direct effects as expected.

The significant effect of diamond origin on perceived scarcity.

The results confirmed that diamond origin is significantly associated with perceived scarcity. Natural diamonds are perceived as significantly more scarce than lab-grown diamonds, which aligns with existing literature on natural diamonds being viewed as finite and rare due to their geological formation over millions of years (Epstein, 1982; Zimnisky, 2019a). Lab-grown diamonds, on the other hand, are associated with technological reproducibility, thus diluting their scarcity perception. This significant effect supports the argument that consumers associate the natural origin of diamonds with exclusivity and rarity, a critical component of luxury perception (Vigneron & Johnson, 2004).

Potential reasons for the non-significance of brand type as a moderator.

The third hypothesis stating that brand type moderates the relationship between diamond origin and perceived scarcity is not supported by the results of the data. This finding suggests that the luxury brand (Tiffany & Co.) does not significantly alter how consumers perceive the scarcity of lab-grown versus natural diamonds. Despite Tiffany's strong brand heritage and association with exclusivity, its brand awareness does not sufficiently elevate the perceived scarcity of lab-grown diamonds, as hypothesized. This result on the one hand aligns with recent studies that suggest sustainability efforts in luxury may not always overcome traditional luxury cues like rarity and natural origin (Janssen et al., 2017; Kapferer & Bastien, 2009).

On the other hand, this also implies that peoples´ scarcity perceptions are strongly tied to the nature of the product itself, rather than to the popularity of the brand. Furthermore, the results theoretically also align with Tiffany & Co´s vision, stating that:

> *"Our position is lab-grown diamonds are not a luxury material. We don't see a role for them in a luxury brand. They have their use and they have their place, but I think luxury consumers will continue to desire the rarity and amazing story of natural diamonds."*
> *- Tiffany & Co*

It is therefore clearly stated that a luxury brand like Tiffany & Co. does not make an effort to integrate lab-grown diamonds into its portfolio for authenticity reasons, and also does not want to be perceived as such.

Besides the brand statement, reasons for the non-significance could be multifaceted. First of all, the sample was not very representative in terms of typical luxury consumer and therefore not a good fit to properly answer this question, as brand prestige might have less impact on their perceptions. Furthermore, the manipulation of brand type (luxury vs. no-name) may not have been strong or clear enough to elicit differences in perceived scarcity. Participants might not have fully internalized the brand as intended, evidenced by the fact that some participants reported familiarity with the fictional brand, indicating potential issues with the manipulation check.

Another reason could be, that participants relied on simple heuristics that lab-grown diamonds equal less scarcity, which cannot be easily overridden by brand associations. To build on this, there might be a perceived inconsistency between traditional luxury brands, known for their natural diamonds, offering lab-grown diamonds, which in turn could dilute the influence of the brand on scarcity perceptions. This would imply, that consumers prefer product authenticity over brand prestige.

The significant effect of perceived scarcity on purchase intention.

Perceived scarcity was found to have a strong, positive relationship with purchase intention. This result aligns with the fundamental principles of luxury marketing, where scarcity enhances desirability and, consequently, consumer purchase intention as well as greater satisfaction with the product (Lynn, 1992). Scarcity further signals exclusivity, which is crucial in driving consumer purchase intentions, especially in high-value, emotional, and symbolic purchases like diamond jewelry (Verhallen, 1982). These findings support the theory that perceived scarcity can serve as a key driver of consumer decisions, especially for luxury products where social signaling and status are at play (Veblen, 1899).

The significant effect of perceived scarcity as a mediator.

The mediation analysis yielded that perceived scarcity significantly mediates the relationship between diamond origin and purchase intention. Specifically, lab-grown diamonds are perceived as less scarce, which accordingly reduces purchase intention. This is also supported by literature, indicating that scarcity is not just a characteristic of natural resources but a powerful psychological driver in consumer decision-making (Cialdini, 2001). This mediating effect also highlights the crucial role scarcity plays in luxury consumption and aligns with theories from behavioral psychology and marketing, such as Commodity Theory (Brock, 1986). More specifically, the commodity theory explains why natural diamonds, perceived as scarce, lead to higher purchase intention because scarcity is the fundamental psychological driver that enhances value. Even though lab-grown diamonds are more affordable and environmentally sustainable, the diminished perception of their scarcity may undermine their appeal in the luxury market (Danziger, 2021).

Potential reasons for the non-significance of the moderated mediation by brand type.

The moderated mediation analysis did not find support for the hypothesis that brand type moderates the indirect effect of diamond origin on purchase intention through perceived scarcity. Although it was assumed in the hypothesis that a strong luxury brand like Tiffany & Co. could mitigate the lower perceived scarcity of lab-grown diamonds, the results did not show a significant moderation effect. This suggests that the brand's luxury status cannot override the consumer's inherent perceptions of scarcity tied to the diamond's origin. These findings challenge the notion that luxury brands can fully compensate for not being inherently luxurious through their brand equity (Hudders, 2012), specifically in the case of the lower perception of lab-grown diamonds.

Potential reasons for the non-significance could be again multidimensional. There could again be the case that participants do not recognize or place importance on the brand distinction therefore the moderation effect may not be meaningful. Furthermore, brand type might not have been the most suitable moderating variable in this case, other factors such as general attitudes toward luxury brands might have been a better fit. The brand type might be too simplistic, as it cannot effectively measure participants´ perceptions of luxury and brand quality. Especially in light of the between-subjects experiment, one cannot capture the individuals´ different perceptions of the brand. It may be that consumers generally perceive diamonds as having a certain luxury status, regardless of the brand. In this case, the moderating effect of brand type on the relationship between perceived scarcity and purchase intention could be diluted.

Furthermore, as lab-grown diamonds are relatively new on the market, respondents´ knowledge and perception about the gems might not have been sufficient so even a luxury brand cannot elevate their value. On the other hand, it could be that the effect of diamond origin on perceived scarcity is so strong, that the role of the brand might be overshadowed. Lastly, the brand type in general might not be an important topic for people when buying engagement rings or they simply don´t admire Tiffany & Co. as a luxury brand. More important factors could be price, emotional value, or sustainability. Since the price was not included in the scenarios, participants could have lacked important information to differentiate between luxury and no-name brands. Price is often a key indicator of scarcity and exclusivity, especially in the luxury goods market.

5.1. Limitations and Areas of Future Research

Sample and generalizability.

There are multiple limitations to this study. First, the use of hypothetical scenarios and convenience sampling limits the generalizability of the findings to real-world scenarios and a broader consumer segment. Through this sampling technique, participants may overrepresent specific income brackets and cultural backgrounds and therefore are not suitable to represent the whole population. Moreover, the sample size of 253 is acceptable, larger samples always allow for more reliable and generalizable insights. With the distribution to a wide age range, the study was on the one hand able to capture different opinions from different age groups but on the other hand failed to make assumptions for different generations due to the uneven age distribution.

Additionally, the sample is culturally and geographically specific, with the majority of respondents coming from Western countries, particularly from Germany. As mentioned in the literature review, cultural affiliation plays a significant role in how consumers perceive luxury, scarcity, and brand value. For example, consumers from Western countries may place more emphasis on brand prestige and social status. Consumers from other regions, such as Asia, might prioritize other factors like resale value and financial investment. This lack of representativeness of different cultures limits the generalizability of the findings across global markets, particularly in emerging economies where the perception of luxury value may differ. Future research could therefore consider conducting cross-cultural comparisons to account for these differences.

Brand perception.

Second, the brand types presented might not have been distinctive enough. Both brands were very briefly described; Tiffany & Co. as a luxury brand, and "Sparkling Diamonds" as a new brand. Hence, from the description, it seems not clear enough whether "Sparkling Diamonds" could also carry the luxury brand status or not. The author in this case assumed it not to be a luxury brand yet, as these only form over time. Furthermore, Tiffany & Co. was only one example of a luxury brand, it could be that people specifically dislike Tiffany & Co. but admire another luxury jewelry brand, therefore Tiffany & Co. could lack the representativeness of luxury brands in general, which is important to consider for future studies. These could incorporate multiple luxury and non-luxury brands to truly understand brand perception and its effect on perceived scarcity and purchase intention.

Moreover, the moderator brand type was found to be not significant, therefore more work is needed to understand how consumers perceive the relationship between brand prestige and perceived scarcity in the context of diamonds.

Product choice.

Third, the product choice of an engagement ring might not have resonated with every respondent. Many people in the sample are already engaged (and married) or do not plan to get married. Hence, future research could test a wider range of diamond jewelry, not just engagement rings.

It is furthermore challenging to assess the purchase intention because women in most cases do not buy the engagement ring themselves and therefore maybe could not relate to it as much. Men on the other hand might not have familiarized themselves with diamond engagement rings before as there might have been no occasion yet. Therefore, it could be that they have not been informed enough to make a reliable and meaningful decision on purchase intention.

Simplicity of scenario design.

The aforementioned argument is closely linked to the next limitation, namely the simplicity of the scenario design. The study presented a very simplified purchase scenario of an engagement ring, which is not capable of fully capturing the complexity of real-world purchasing decisions. Multiple factors such as emotional considerations, price sensitivity, social influences, and brand loyalty are not included in the study, which questions the validity of purchase intention. Future studies could incorporate these factors to better simulate the actual decision-making process for purchase intention.

Perceived scarcity as the only mediator.

Lastly, this study heavily focused on perceived scarcity being the main factor for the differences in purchase intention for lab-grown diamonds versus natural diamonds. However, there also might be other factors, such as authenticity or CSR practices, that could be important to explain more of the variance in purchasing behavior. Although CSR practices were briefly mentioned in this study, it was not studied enough to validate their importance in the diamond purchase intention.

5.2. Theoretical Implications

The theoretical implications of this study are essential for understanding how consumers' perceptions of luxury and scarcity influence purchase intention, particularly in the context of lab-grown versus natural diamonds. This research contributes to several key areas in consumer behavior, luxury branding, and scarcity marketing literature, offering new perspectives on how these factors interact.

These study findings align with and expand upon commodity theory (Brock, 1986), which suggests that scarcity increases the perceived value of a commodity. Previous studies have applied this theory to luxury goods, showing that exclusivity and limited availability often enhance desirability and consumer demand (Lynn, 1992; Verhallen, 1982). However, the present research extends this theory by investigating how perceived scarcity mediates the relationship between diamond origin (lab-grown versus natural diamond) and purchase intention.

The result that lab-grown diamonds are perceived as less scarce compared to natural diamonds and, consequently, lead to lower purchase intentions supports the central idea of commodity theory. It highlights that even in the context of sustainable alternatives, scarcity remains a critical driver of consumer decision-making. Moreover, this aligns with Veblen's (1899) concept of conspicuous consumption, where consumers derive status and prestige from owning scarce and exclusive luxury goods. This study confirms that scarcity continues to serve as a significant luxury signal and outweighs the product's intrinsic characteristics (such as sustainability).

The research also contributes to the existing body of literature on luxury branding, particularly regarding how brand type influences consumer perceptions. Studies by Kapferer and Bastien

(2009) have emphasized the importance of brand heritage, exclusivity, and symbolism in luxury branding. This study explores how a well-established luxury brand (Tiffany & Co.) versus a no-name brand (Sparkling Diamonds) impacts perceived scarcity and purchase intention for lab-grown diamonds.

Although brand type was not found to moderate the relationship between diamond origin and perceived scarcity significantly, this finding still holds theoretical value. It suggests that consumers may not always perceive lab-grown diamonds as luxury items, even when associated with a high-status brand. This points to a potential gap in brand equity theory (Keller, 1993), which posits that strong brands can elevate the perceived value of their products. The non-significance of the moderating effect could suggest that more research is needed to understand the limits of brand influence, especially in emerging categories like sustainable alternatives to traditional luxury products.

The study also contributes to the emerging literature on sustainability and luxury consumption. Davies et al. (2012) argued that sustainability and ethics play a lesser role in consumer decision-making when purchasing luxury goods, as luxury is traditionally associated with scarcity rather than sustainability. However, as sustainable luxury products (such as lab-grown diamonds) gain traction, this study underscores the complexities in consumer perceptions. While lab-grown diamonds offer ethical and environmental benefits, their perceived lack of scarcity diminishes their luxury status in the eyes of consumers. This is also supported by Kunz et al. (2020) who suggest that many luxury consumers view sustainability and luxury as somewhat conflicting.

Future research could explore how luxury brands could bridge this gap, possibly by creating narratives emphasizing sustainable luxury goods' uniqueness and exclusivity.

5.3. Practical Implications

The practical implications derived from this study are important for stakeholders in the luxury and jewelry industry, particularly in the context of scarcity marketing, branding, and the use of sustainable alternatives for traditional luxury products. This study provides insights that can be helpful for brands to optimize their marketing strategies to better align with consumer preferences and purchasing behavior.

One of the key practical implications of this study is the need for more effective marketing strategies for lab-grown diamonds. The research shows that lab-grown diamonds are perceived

as less scarce, which leads to lower purchase intentions. However, this does not mean that lab-grown diamonds cannot be successfully marketed as luxury items, as proven by LVMH with their brands FRED and Tag Heuer.
Brands should focus on creating a sense of exclusivity around lab-grown diamonds, even if they are not naturally scarce. As the literature on scarcity suggests, perceived rarity can be engineered through marketing tactics such as limited editions, exclusive distribution, prestige pricing, and order size restrictions. Marketers should avoid commoditizing lab-grown diamonds by keeping them widely available at low prices, which would erode their perceived value as a luxury item. Instead, strategies that limit the availability or increase the perceived exclusivity of these diamonds can elevate their desirability and justify higher price points.

Luxury brands can create a narrative around the technological sophistication and ethical superiority of lab-grown diamonds. Consumers, especially younger generations, are increasingly interested in the sustainability and ethical sourcing of products. By leveraging this, brands can reposition lab-grown diamonds as the sustainable luxury choice for the eco-conscious, socially responsible consumer.

Moreover, the study highlights that while Tiffany & Co. was used as the luxury brand in the experiment, it did not significantly moderate the relationship between diamond origin and purchase intention. This suggests that simply attaching a luxury brand to lab-grown diamonds may not be enough to increase purchase intention. Brands need to invest in consumer education about the benefits of lab-grown diamonds, emphasizing their sustainability, ethicality, and quality.
While Kapferer and Bastien (2012) argue that luxury consumers are willing to pay a premium for authenticity, heritage, and uniqueness, lab-grown diamonds may not have the same heritage and authenticity as natural diamonds. Therefore, brands can capitalize on lab-grown diamonds´ uniqueness through innovative designs, bespoke offerings, and exclusive collections. In this context, authenticity may not necessarily mean being naturally mined but being true to the brand's values of quality and craftsmanship.

For luxury brands, the research highlights the importance of balancing tradition and innovation. Brands that have built their identity around natural diamonds, like Tiffany & Co., may not be open to positioning lab-grown diamonds as part of their luxury offering. However, brands like De Beers´ "Lightbox" brand, which positions lab-grown diamonds as "fun and affordable"

rather than luxury, demonstrates a potential strategy for luxury brands looking to enter the lab-grown diamond market without diluting the prestige of their natural diamond collections. This implies, that luxury brands can integrate lab-grown diamonds without competing against their natural diamonds, but this is a matter of positioning and differentiating them correctly.

However, luxury brands that successfully integrate sustainability into their value proposition without compromising on exclusivity, are likely to appeal to both traditional luxury consumers and those driven by environmental concerns. As sustainability is becoming a more significant factor in purchasing decisions, brands that fail to adapt to this shift could face the risk of losing relevance in the eyes of modern consumers.

Retailers, particularly those selling engagement rings, should consider how they display and market lab-grown diamonds versus natural diamonds. Given that perceived scarcity influences purchase intentions, physical stores could use displays that emphasize the rarity and exclusivity of natural diamonds. For lab-grown diamonds, retailers could focus on the ethical and sustainable advantages, while also creating a sense of exclusivity through limited-time offers, special collections, or personalized services. This again, would support the need for differentiation, so that the value of natural diamonds does not get diminished by the low price for lab-grown diamonds. The distinction between natural diamonds and lab-grown diamonds may be most evident in the bridal segment, where the traditional value of natural diamonds contrasts sharply with the perceived characteristics of lab-grown diamonds.

6. Conclusion

The first research question aimed to find out whether perceived scarcity influences the purchase intention of lab-grown diamonds versus natural diamonds. This study confirmed that perceived scarcity plays a critical role in mediating the relationship between diamond origin and purchase intention. Specifically, natural diamonds were perceived as more scarce than lab-grown diamonds, leading to higher purchase intentions.

However, the second research question, which asked whether luxury brands can influence the perceived scarcity of lab-grown diamonds to increase purchase intention, yielded a more complex result. The study did not find a significant moderating effect of brand type on the relationship between diamond origin and perceived scarcity.

Currently, the price of lab-grown diamonds is almost true to production cost, which contradicts the anti-laws of marketing that the presumed price should always be higher than the actual price (Kapferer & Bastien, 2009). Since no rarity nor exclusivity is displayed in the lab-grown diamond price, this does not resonate with luxury pricing, as authentic luxury items do not sell at production cost. Therefore, with the current market positioning of lab-grown diamonds, they are more likely to appear as a distinct category from natural diamonds, targeting the mass market or entry luxury market rather than the high-end jewelry market. Nonetheless, there are a few exceptions in which they can be branded as luxury, for instance in the case of LVMH´s experiments with lab-grown diamonds.

While this was an unexpected finding, it indicates that branding alone may not compensate for the perceived lack of rarity in lab-grown products. Therefore, the long-term value of lab-grown diamonds depends on how brands will market them in anticipation of the future.

To summarize, this study has demonstrated that perceived scarcity is a powerful determinant of purchase intention in the luxury diamond market. However, the recent emergence of lab-grown diamonds is challenging traditional luxury dynamics. As the luxury industry evolves, luxury brands must adapt their strategies to meet the changing values of consumers, especially those who prioritize sustainability and ethicality. While lab-grown diamonds seem to have a promising future, understanding how to communicate their value and right to exist effectively, remains a key challenge for marketers and researchers.

Bibliography

ALROSA. (2022, December 19). *Market share of the leading diamond mining companies worldwide in 2022*. https://alrosa.ru/en/business/diamond-industry/

American Gem Society. (2023, December 11). *Learn About the History & Traditions of Diamond Engagement Rings*. https://www.americangemsociety.org/buying-diamonds-with-confidence/the-history-of-the-diamond-as-an-engagement-ring/#:~:text=In%201477%2C%20Archduke%20Maximillian%20of,among%20European%20aristocracy%20and%20nobility.

Bain & Company & AWDC. (2022). The Global Diamond Industry 2021–22. In *Bain & Company* [Report]. https://www.bain.com/globalassets/noindex/2022/bain_report_diamond_report-2021-22.pdf

Barton, B., Zlatevska, N., & Oppewal, H. (2022). Scarcity tactics in marketing: A meta-analysis of product scarcity effects on consumer purchase intentions. *Journal of Retailing*, *98*(4), 741–758. https://doi.org/10.1016/j.jretai.2022.06.003

Bastien, V., & Kapferer, J. (2012). More on luxury Anti-Laws of Marketing. In *Gabler Verlag eBooks* (pp. 19–34). https://doi.org/10.1007/978-3-8349-4399-6_2

Beckham, D., & Voyer, B. G. (2014). Can sustainability be luxurious? A mixed-method investigation of implicit and explicit attitudes towards sustainable luxury consumption. *ACR North American Advances*. https://www.acrwebsite.org/volumes/v42/acr_v42_17922.pdf

Belk, R. W. (1988). Possessions and the Extended Self. *Journal of Consumer Research*, *15*(2), 139–168. https://doi.org/10.1086/209154

Bergenstock, D. J., & Maskulka, J. M. (2001). The de beers story: are diamonds forever? *Business Horizons*, *44*(3), 37–44. https://doi.org/10.1016/s0007-6813(01)80033-1

Boston Consulting Group & De Beers. (2024). The future of the natural diamond industry. In *https://www.bcg.com/publications/2024/future-of-natural-diamond-industry*. Retrieved July 15, 2024, from https://web-assets.bcg.com/87/88/44ce24b646969ef49aa5a9c4b8b6/bcg-the-future-of-the-natural-diamond-industry-may.pdf

Brehm, J. W. (1966). A Theory of Psychological Reactance. *Academic Press*.

Brock, T. C. (1968). Implications of Commodity Theory for Value Change. In *Elsevier eBooks* (pp. 243–275). https://doi.org/10.1016/b978-1-4832-3071-9.50016-7

Catry, B. (2003). The great pretenders: the magic of luxury goods. *Business Strategy Review*, *14*(3), 10–17. https://doi.org/10.1111/1467-8616.00267

Cawley, L. (2014, May 16). *De Beers myth: Do people spend a month's salary on a diamond engagement ring?* BBC News. https://www.bbc.com/news/magazine-27371208

Chevalier, M., & Mazzalovo, G. (2020). *Luxury Brand Management in Digital and Sustainable Times*. https://doi.org/10.1002/9781119706328

Cialdini, R. B. (2001). *Influence: Science and Practice*. Fourth Edition. Allyn & Bacon:2001. https://www.researchgate.net/publication/229067982_Influence_Science_and_Practice

Danziger, P. N. (2021, December 10). Lab grown or natural diamonds? the choice is getting clearer for consumers and retailers. *Forbes*. https://www.forbes.com/sites/pamdanziger/2021/02/14/lab-grown-or-natural-diamonds-the-choice-is-getting-clearer-for-consumers-and-retailers/?sh=3dad7fed62f9

Davies, I. A., Lee, Z., & Ahonkhai, I. (2011). Do consumers care about Ethical-Luxury? *Journal of Business Ethics*, *106*(1), 37–51. https://doi.org/10.1007/s10551-011-1071-y

De Angelis, M., Amatulli, C., & Petralito, S. (2021). Luxury and Sustainability: An experimental investigation concerning the diamond industry. In *Environmental footprints and eco-design of products and processes* (pp. 179–198). https://doi.org/10.1007/978-981-16-2454-4_9

De Barnier, V., Falcy, S., & Valette-Florence, P. (2012). Do consumers perceive three levels of luxury? A comparison of accessible, intermediate and inaccessible luxury brands. *Journal of Brand Management*, *19*(7), 623–636. https://doi.org/10.1057/bm.2012.11

De Beers Group. (2022). A New Diamond World. In *The Diamond Insight Report 2022*. https://www.debeersgroup.com/~/media/Files/D/De-Beers-Group-V2/documents/reports/2022/DeBeers_DIR2022.pdf

Epstein, E. J. (1982, February). Have You Ever Tried to Sell a Diamond? *The Atlantic*. https://www.theatlantic.com/magazine/archive/1982/02/have-you-ever-tried-to-sell-a-diamond/304575/

Federal Trade Commission. (2022, May 9). *The many facets of advertising diamonds with clarity*. https://www.ftc.gov/business-guidance/blog/2019/05/many-facets-advertising-diamonds-clarity

Fromkin, H. L. (1970). Effects of experimentally aroused feelings of undistinctiveness upon valuation of scarce and novel experiences. *Journal of Personality and Social Psychology*, *16*(3), 521–529. https://doi.org/10.1037/h0030059

Gemological Institute of America. (n.d.). *Gemological Institute of America | All about Gemstones - GIA*. https://www.gia.edu/

Gupta, M., Das, G., Septianto, F., & Hagtvedt, H. (2023). The impact of scarcity cues on purchase likelihood of art-infused products. *Journal of the Academy of Marketing Science*, *52*(2), 470–488. https://doi.org/10.1007/s11747-023-00945-3

Hamilton, R. W., & Hosany, A. R. S. (2023). On the strategic use of product scarcity in marketing. *Journal of the Academy of Marketing Science*, *51*(6), 1203–1213. https://doi.org/10.1007/s11747-023-00976-w

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A Regression-Based Approach*. Guilford Publications.

Heine, K., & Phan, M. (2011). Trading-Up Mass-Market Goods to Luxury Products. *Australasian Marketing Journal (AMJ)*, *19*(2), 108–114. https://doi.org/10.1016/j.ausmj.2011.03.001

Hudders, L. (2012). Why the devil wears Prada: Consumers' purchase motives for luxuries. *Journal of Brand Management*, *19*(7), 609–622. https://doi.org/10.1057/bm.2012.9

Human Rights Watch. (2018, May 10). Diamond trade still fuels human suffering. *Human Rights Watch*. https://www.hrw.org/news/2018/05/10/diamond-trade-still-fuels-human-suffering

Janssen, C., Vanhamme, J., & Leblanc, S. (2017). Should luxury brands say it out loud? Brand conspicuousness and consumer perceptions of responsible luxury. *Journal of Business Research*, *77*, 167–174. https://doi.org/10.1016/j.jbusres.2016.12.009

Janssen, C., Vanhamme, J., Lindgreen, A., & Lefebvre, C. (2014). The Catch-22 of Responsible Luxury: Effects of Luxury Product Characteristics on Consumers' Perception of Fit with Corporate Social Responsibility. *Journal of Business Ethics*, *119*(1), 45–57. https://doi.org/10.1007/s10551-013-1621-6

Jones, S. (1984). *The Economics of Conformism*. Basil Blackwell Publisher Ltd.

Kapferer, J. (2012). Abundant rarity: The key to luxury growth. *Business Horizons*, *55*(5), 453–462. https://doi.org/10.1016/j.bushor.2012.04.002

Kapferer, J., & Bastien, V. (2009). The luxury strategy: break the rules of marketing to build luxury brands. *Choice/Choice Reviews*, *50*(07), 50–3944. https://doi.org/10.5860/choice.50-3944

Kapferer, J., & Valette-Florence, P. (2018). The impact of increased brand penetration on luxury desirability: a dual effect. *Journal of Brand Management*, *25*(5), 424–435. https://doi.org/10.1057/s41262-018-0091-7

Keller, K. L. (1993). Conceptualizing, measuring, and managing Customer-Based Brand Equity. *Journal of Marketing*, *57*(1), 1. https://doi.org/10.2307/1252054

Keller, K. L. (2009). Managing the growth tradeoff: Challenges and opportunities in luxury branding. *Journal of Brand Management*, *16*(5–6), 290–301. https://doi.org/10.1057/bm.2008.47

Kimberley Process. (n.d.). *What is the KP | KimberleyProcess*. https://www.kimberleyprocess.com/en/what-kp

Kimberley Process: Annual Global Summary: 2023 Production, Imports, Exports and KPC Counts. (2024). In Kimberely Process Certification Scheme, *Summary Report*. https://kimberleyprocessstatistics.org/static/pdfs/public_statistics/2023/2023GlobalSummary.pdf

Ko, E., Costello, J. P., & Taylor, C. R. (2019). What is a luxury brand? A new definition and review of the literature. *Journal of Business Research*, *99*, 405–413. https://doi.org/10.1016/j.jbusres.2017.08.023

Kowalczyk, C. M., & Mitchell, N. A. (2021). Understanding the antecedents to luxury brand consumer behavior. *Journal of Product & Brand Management*, *31*(3), 438–453. https://doi.org/10.1108/jpbm-09-2020-3126

Ku, H., Kuo, C., & Kuo, T. (2012). The Effect of Scarcity on the Purchase Intentions of Prevention and Promotion Motivated Consumers. *Psychology and Marketing*, *29*(8), 541–548. https://doi.org/10.1002/mar.20541

Ku, H., Kuo, C., Yang, Y., & Chung, T. (2013). Decision-contextual and individual influences on scarcity effects. *European Journal of Marketing*, *47*(8), 1314–1332. https://doi.org/10.1108/03090561311324345

Kunz, J., May, S., & Schmidt, H. J. (2020). Sustainable luxury: current status and perspectives for future research. *BuR - Business Research*, *13*(2), 541–601. https://doi.org/10.1007/s40685-020-00111-3

Laroche, M., Kim, C., & Zhou, L. (1996). Brand familiarity and confidence as determinants of purchase intention: An empirical test in a multiple brand context. *Journal of Business Research*, *37*(2), 115–120. https://doi.org/10.1016/0148-2963(96)00056-2

LVMH. (2023, September 9). *FRED unveils Audacious Blue, the first lab-grown diamond from the Maison*. https://www.lvmh.com/en/news-lvmh/fred-unveils-audacious-blue-the-first-lab-grown-diamond-from-the-maison

Lynn, M. (1991). Scarcity effects on value: A quantitative review of the commodity theory literature. *Psychology and Marketing*, *8*(1), 43–57. https://doi.org/10.1002/mar.4220080105

Lynn, M. (1992). Scarcity's Enhancement of Desirability: The Role of Naive Economic Theories. *Basic and Applied Social Psychology*, *13*(1), 67–78. https://doi.org/10.1207/s15324834basp1301_6

Mckay, B. (2024, April 29). *Are diamonds bad for the environment? Stats, facts & quotes*. GreenMatch.co.uk. https://www.greenmatch.co.uk/blog/environmental-impact-of-diamond-mining

Memme, A. C. (2019). ELEVATING THE LAB-GROWN DIAMOND: A CRITICAL REVIEW OF THE CONTEMPORARY JEWELLERY INDUSTRY. In *Master of Arts* [Thesis]. University of Ryerson. https://rshare.library.torontomu.ca/articles/thesis/Elevating_the_Lab_Grown_Diamond_A_Critical_Review_of_the_Contemporary_Jewellery_Industry/14652327/1/files/28134081.pdf

Moraes, C., Carrigan, M., Bosangit, C., Ferreira, C., & McGrath, M. (2015). Understanding Ethical Luxury Consumption Through Practice Theories: A Study of Fine Jewellery Purchases. *Journal of Business Ethics*, *145*(3), 525–543. https://doi.org/10.1007/s10551-015-2893-9

Oluleye, G. & Imperial College London. (2021). Environmental Impacts of Mined Diamonds. In *Report*. https://www.imperial-consultants.co.uk/wp-content/uploads/2021/02/Final-report-Environmental-Impacts-of-Mined-Diamonds.pdf

Picciotto, E. (2020, April 21). De Beers most famous ad campaign marked the entire diamond industry. *The Eye of Jewelry*. https://theeyeofjewelry.com/de-beers/de-beers-jewelry/de-beers-most-famous-ad-campaign-marked-the-entire-diamond-industry/

Queensmith. (2024, April 30). *Lab Diamonds vs Real Diamonds comparison*. Queensmith. https://www.queensmith.co.uk/diamond-guides/lab-grown-diamonds/lab-diamonds-vs-natural-diamonds

Rapaport News. (2018, July 25). *Lab-Grown diamonds are diamonds, says FTC*. Rapaport Diamonds.Net. https://www.diamonds.net/News/NewsItem.aspx?ArticleID=62587&ArticleTitle=Lab-Grown+Diamonds+Are+Diamonds%2C+Says+FTC

Romaniuk, J., & Huang, A. (2019). Understanding consumer perceptions of luxury brands. *International Journal of Market Research*, *62*(5), 546–560. https://doi.org/10.1177/1470785319891109

Shi, X., Li, F., & Chumnumpan, P. (2020). The use of product scarcity in marketing. *European Journal of Marketing*, *54*(2), 380–418. https://doi.org/10.1108/ejm-04-2018-0285

Shigley, Dr. J. & Gemological Institute of America (GIA). (2022). *Laboratory-Grown diamonds*. https://static1.squarespace.com/static/55f1c5d5e4b0e83b4ef3e659/t/62a8d4ec5f65034bd643ee52/1655231726002/Shigley_James_paper.pdf

Singla, R. (2024, July 9). *Russia overtakes Botswana in Rough-Diamond production value in 2023*. Jewellery Monthly. https://jewellerymonthly.co.uk/russia-overtakes-botswana-in-rough-diamond-production-value-in-2023/

Snyder, C. R., & Fromkin, H. L. (2012). *Uniqueness: The human pursuit of difference*. Springer Science & Business Media.

Spar, D. L. (2006). Markets: Continuity and Change in the International Diamond Market. *The Journal of Economic Perspectives*, *20*(3), 195–208. https://doi.org/10.1257/jep.20.3.195

Statista. (2024a, April 19). *Global market share of lab-grown diamonds 2016-2030*. https://www.statista.com/statistics/1076048/global-market-share-of-lab-grown-diamonds/

Statista. (2024b, April 19). *Global market value of lab-grown diamonds 2021-2030*. https://www.statista.com/statistics/1076378/lab-grown-diamonds-market-value-globally/

Statista. (2024c, April 19). *Natural and synthetic diamonds price difference 2016-2023, by weight*. https://www.statista.com/statistics/828927/lab-created-diamonds-price-difference-from-natural-diamonds-by-weight/

Statista. (2024d, April 20). *Global diamond jewelry sales 2024, by diamond type*. https://www.statista.com/statistics/1423562/global-diamond-jewelry-sales-by-type/

Statista. (2024e, April 21). *Global diamond jewelry market value 2022, by country*. https://www.statista.com/statistics/585103/diamond-jewelry-market-value-worldwide-by-region/

Sterman, J. D., & Dogan, G. (2015). "I'm not hoarding, I'm just stocking up before the hoarders get here." *Journal of Operations Management*, *39–40*(1), 6–22. https://doi.org/10.1016/j.jom.2015.07.002

Tan, T., & Ming, M. (2003). Leveraging on symbolic values and meanings in branding. *Journal of Brand Management*, *10*(3), 208–218. https://doi.org/10.1057/palgrave.bm.2540117

Van Herpen, E., Pieters, R., & Zeelenberg, M. (2009). When demand accelerates demand: Trailing the bandwagon. *Journal of Consumer Psychology*, *19*(3), 302–312. https://doi.org/10.1016/j.jcps.2009.01.001

Verhallen, T. M. (1982). Scarcity and consumer choice behavior. *Journal of Economic Psychology*, *2*(4), 299–322. https://doi.org/10.1016/0167-4870(82)90034-4

Vigneron, F., & Johnson, L. W. (2004). Measuring perceptions of brand luxury. *Journal of Brand Management*, *11*(6), 484–506. https://doi.org/10.1057/palgrave.bm.2540194

Wang, X., Sung, B., & Phau, I. (2024). Examining the influences of perceived exclusivity and perceived rarity on consumers' perception of luxury. *Journal of Fashion Marketing and Management*, *26*(2), 365–382. https://doi.org/10.1108/jfmm-12-2020-0254

Wiedmann, K., Hennigs, N., & Siebels, A. (2007). Measuring consumers' luxury value perception: A cross-cultural framework. *ResearchGate*. https://www.researchgate.net/publication/228344191_Measuring_consumers'_luxury_value_perception_A_cross-cultural_framework

Wiedmann, K., Hennigs, N., & Siebels, A. (2009). Value-based segmentation of luxury consumption behavior. *Psychology and Marketing*, *26*(7), 625–651. https://doi.org/10.1002/mar.20292

Zhou, Y. (2024). Analysis of the reasons for the high price of luxury goods based on consumer psychology. *Journal of Education Humanities and Social Sciences*, *35*, 588–594. https://doi.org/10.54097/p9agt855

Zimnisky, P. (2019a, January 20). *Don't Give Up on the Diamond Industry Just Yet*. https://www.paulzimnisky.com/don-t-give-up-on-the-diamond-industry-yet

Zimnisky, P. (2019b, March 20). *A Brief History of De Beers*. https://www.paulzimnisky.com/a-brief-history-of-de-beers

Zimnisky, P. (2022, November 27). *Prominent Jewelers' Lab-Diamond Strategy Table*. https://www.paulzimnisky.com/Prominent-Jewelers-Lab-Diamond-Strategy-Table-

Zimnisky, P. (2023, January 2). *Lab-Diamond sales grow as prices fall*. https://www.paulzimnisky.com/Lab-Diamond-Sales-Grow-as-Prices-Fall

Zimnisky, P. (2024, June 24). *What a $6k Engagement Ring Budget Gets You Chart*. https://www.paulzimnisky.com/What-a-6k-Engagement-Ring-Budget-Gets-You-Chart

7. Appendix

Moderated Mediation Output SPSS

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2
*****************

          Written by Andrew F. Hayes, Ph.D.
www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************
************
Model  : 7
    Y  : PurchInt
    X  : X_isLab
    M  : PerScarc
    W  : M_Luxury

Sample
Size:  253

**************************************************************
************
OUTCOME VARIABLE:
 PerScarc

Model Summary
          R       R-sq        MSE          F        df1
df2          p
      ,3451       ,1191     2,2173    11,2239     3,0000
249,0000      ,0000

Model
              coeff         se          t          p
LLCI       ULCI
constant     3,4655      ,1955    17,7243      ,0000
3,0804     3,8506
X_isLab      -1,0131      ,2710    -3,7389      ,0002    -
1,5468     -,4795
M_Luxury       ,3218      ,2671     1,2049      ,2294     -
,2042      ,8478
Int_1         -,0434      ,3750     -,1158      ,9079     -
,7820      ,6952
```

```
Product terms key:
 Int_1    :        X_isLab  x        M_Luxury

Test(s) of highest order unconditional interaction(s):
       R2-chng           F        df1        df2           p
X*W      ,0000      ,0134     1,0000   249,0000      ,9079

*************************************************************
************
OUTCOME VARIABLE:
 PurchInt

Model Summary
          R       R-sq        MSE          F        df1
df2          p
      ,3791      ,1437     2,7744    20,9836     2,0000
250,0000      ,0000

Model
              coeff         se          t          p
LLCI       ULCI
constant      ,9972      ,2967     3,3611      ,0009
,4129     1,5815
X_isLab       ,3905      ,2220     1,7586      ,0799     -
,0468      ,8277
PerScarc      ,4560      ,0705     6,4653      ,0000
,3171      ,5949


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y
*****************

Direct effect of X on Y
     Effect         se          t          p       LLCI
ULCI
      ,3905      ,2220     1,7586      ,0799     -,0468
,8277

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 X_isLab     ->    PerScarc    ->    PurchInt

   M_Luxury     Effect     BootSE   BootLLCI   BootULCI
      ,0000     -,4620      ,1439     -,7683     -,2039
     1,0000     -,4817      ,1634     -,8308     -,1957

Index of moderated mediation (difference between conditional
indirect effects):
              Index     BootSE   BootLLCI   BootULCI
M_Luxury     -,0198      ,1755     -,3862      ,3007
```

```
************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap
confidence intervals:
  5000

------ END MATRIX -----
```

Moderated Mediation Output SPSS including Control Variables (Gender, CSR, WTP, brand familiarity, experience with LGD)

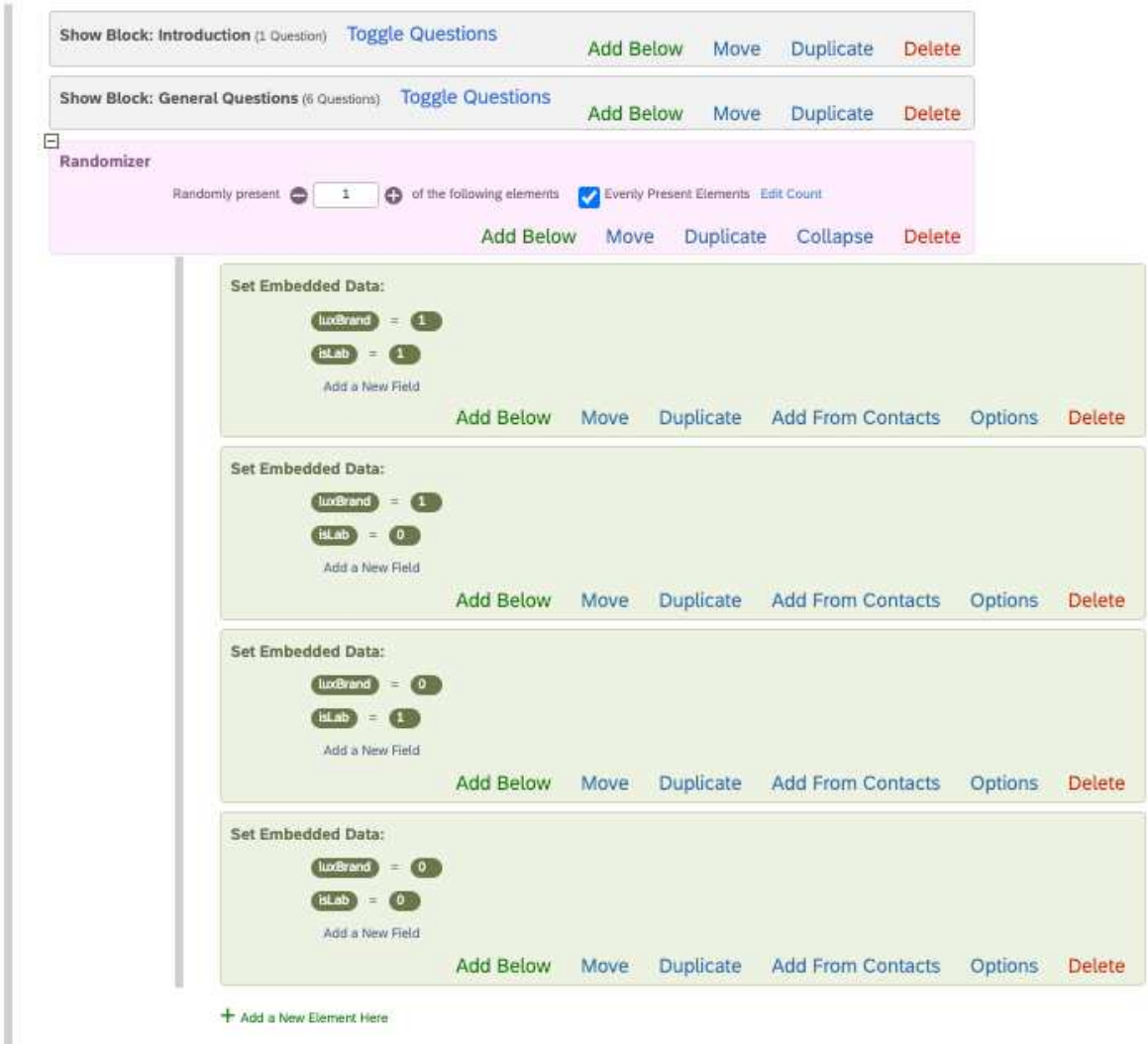
```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2
*****************

          Written by Andrew F. Hayes, Ph.D.
www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************
************
Model  : 7
    Y  : PurchInt
    X  : X_isLab
    M  : PerScarc
    W  : M_Luxury

Covariates:
 Gender   CSR      Salary   WTP      familar  LGDheard

Sample
Size:  253

**************************************************************
************
OUTCOME VARIABLE:
 PerScarc

Model Summary
          R       R-sq        MSE          F        df1
df2          p
      ,3860      ,1490     2,1950     4,7275     9,0000
243,0000      ,0000

Model
              coeff         se          t          p
LLCI       ULCI
constant     2,9651      ,5701     5,2015      ,0000
1,8423     4,0880
X_isLab     -1,0424      ,2735    -3,8115      ,0002    -
1,5812     -,5037
M_Luxury     -,0309      ,3087     -,1001      ,9204     -
,6390      ,5772
```

```
Int_1        -,0242      ,3770     -,0641      ,9490     -
,7668      ,7184
Gender         ,0631      ,2139      ,2948      ,7684     -
,3583      ,4844
CSR            ,0572      ,0589      ,9719      ,3321     -
,0587      ,1731
Salary       -,0152      ,0719     -,2112      ,8329     -
,1567      ,1264
WTP          -,0713      ,0939     -,7598      ,4481     -
,2562      ,1136
familar        ,1220      ,0557     2,1900      ,0295
,0123      ,2317
LGDheard       ,2091      ,1520     1,3751      ,1704     -
,0904      ,5086

Product terms key:
 Int_1    :        X_isLab  x        M_Luxury

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      ,0000      ,0041     1,0000   243,0000      ,9490

************************************************************
************
OUTCOME VARIABLE:
 PurchInt

Model Summary
          R       R-sq        MSE          F        df1
df2          p
      ,4317      ,1864     2,7012     6,9858     8,0000
244,0000      ,0000

Model
             coeff         se          t          p
LLCI       ULCI
constant       ,3116      ,6310      ,4939      ,6218     -
,9312     1,5545
X_isLab        ,3341      ,2226     1,5006      ,1348     -
,1045      ,7726
PerScarc       ,4069      ,0712     5,7185      ,0000
,2668      ,5471
Gender         ,1151      ,2315      ,4975      ,6193     -
,3408      ,5710
CSR            ,0435      ,0652      ,6664      ,5058     -
,0850      ,1719
Salary       -,0047      ,0787     -,0593      ,9527     -
,1597      ,1503
WTP          -,0139      ,1029     -,1354      ,8924     -
,2166      ,1887
```

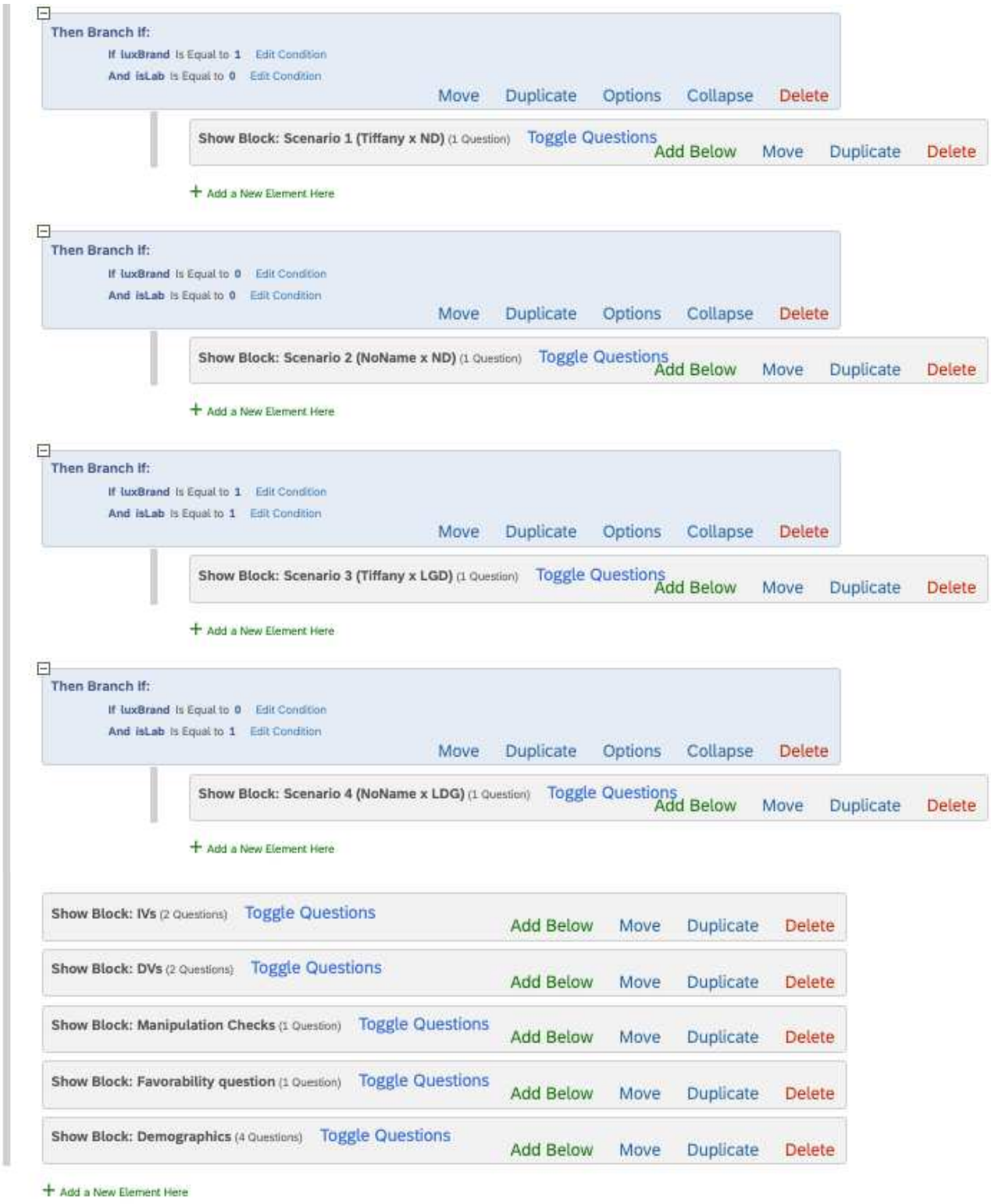
```
familar       ,1636      ,0494     3,3147      ,0011
,0664      ,2608
LGDheard      ,1217      ,1677      ,7255      ,4689     -
,2086      ,4520


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y
*****************

Direct effect of X on Y
     Effect         se          t          p       LLCI
ULCI
      ,3341      ,2226     1,5006      ,1348     -,1045
,7726

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 X_isLab     ->    PerScarc    ->    PurchInt

   M_Luxury     Effect     BootSE   BootLLCI   BootULCI
      ,0000     -,4242      ,1362     -,7092     -,1822
     1,0000     -,4340      ,1504     -,7559     -,1720

Index of moderated mediation (difference between conditional
indirect effects):
              Index     BootSE   BootLLCI   BootULCI
M_Luxury     -,0098      ,1539     -,3258      ,2922

********************** ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap
confidence intervals:
  5000

------ END MATRIX -----
```

N

Survey Flow



O


Then Branch If:
If luxBrand Is Equal to 1 Edit Condition
And isLab Is Equal to 0 Edit Condition
Move Duplicate Options Collapse Delete
Show Block: Scenario 1 (Tiffany x ND) (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Add a New Element Here
Then Branch If:
If luxBrand Is Equal to 0 Edit Condition
And isLab Is Equal to 0 Edit Condition
Move Duplicate Options Collapse Delete
Show Block: Scenario 2 (NoName x ND) (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Add a New Element Here
Then Branch If:
If luxBrand Is Equal to 1 Edit Condition
And isLab Is Equal to 1 Edit Condition
Move Duplicate Options Collapse Delete
Show Block: Scenario 3 (Tiffany x LGD) (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Add a New Element Here
Then Branch If:
If luxBrand Is Equal to 0 Edit Condition
And isLab Is Equal to 1 Edit Condition
Move Duplicate Options Collapse Delete
Show Block: Scenario 4 (NoName x LDG) (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Add a New Element Here
Show Block: IVs (2 Questions) Toggle Questions
Add Below Move Duplicate Delete
Show Block: DVs (2 Questions) Toggle Questions
Add Below Move Duplicate Delete
Show Block: Manipulation Checks (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Show Block: Favorability question (1 Question) Toggle Questions
Add Below Move Duplicate Delete
Show Block: Demographics (4 Questions) Toggle Questions
Add Below Move Duplicate Delete
Add a New Element Here

P