MASTER THESIS

The impact of CSR on financial performance of global fashion brands with the moderating role of brand luxury

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ABSTRACT

The fashion industry's societal and environmental impacts are causing a growing demand for greater Corporate Social Responsibility (CSR). However, companies that engage in CSR activities are required to make a costly investment, and it is not guaranteed that these activities will enhance their financial performance. Even though numerous studies have investigated the impact of CSR on financial performance, the results remain inconclusive. Several studies suggest that there are factors missing in this relationship, such as industry-specific differences or variables that moderate the relationship. With a focus on the fashion industry and the moderating factor of brand luxury, this study empirically examines the impact of CSR on the financial performance of 93 global fashion brands with annual revenue of 400 million US dollars throughout 2017-2020. For this purpose, a regression analysis using either fixed effects or random effects is carried out based on the Hausman test result. The results show that the impact of CSR is significantly positive for the financial measures of Return on Assets (ROA) and Return on Equity (ROE), and Tobin's Q. Brand luxury was not found to have a significant moderating impact on the relationship between CSR and financial performance. More specifically, this study adds to the limited fashion industry research that has been conducted on the impact of CSR on financial performance and the role of brand luxury in moderating that relationship.

Keywords: Fashion industry, brand luxury, corporate social responsibility (CSR), financial performance

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LIST OF ABBREVIATIONS

CSR	Corporate Social Responsibility
FTI	Fashion Transparency Index/Fashion Transparency Index Score
GO	Governance Score
KSF	Know, Show & Fix Score
PC	Policy & Commitments Score
ROA	Return on Assets
ROE	Return on Equity
SI	Spotlight Issues Score
TR	Traceability Score

1 Introduction

Recently, the fashion industry has come under pressure from society for its negative impact on the environment and workers' rights. Therefore, fashion brands are increasingly practicing Corporate Social Responsibility (CSR) to integrate social and environmental concerns into their business operations and interaction with stakeholders. While CSR activities require companies to make a costly investment, they are not guaranteed to improve their financial performance. Despite numerous studies examining the impact of CSR on financial performance, the results remain inconclusive. Many studies have hypothesized missing factors in this relationship, such as industry-specific factors or variables that moderate the relationship. Thus, the purpose of the research is to empirically investigate the impact of CSR on financial performance in the fashion industry while accounting for the potential moderating influence of brand luxury. This chapter begins with a background, followed by a problem statement, relevance, scope, and finally, the delimitations of the study.

1.1 Background

The global fashion industry is expected to grow from 1.5 trillion dollars in 2020 to around 2.25 trillion dollars by 2025, indicating that global demand for textile and clothing is increasing (Shahbandeh, 2021). However, the global fashion industry, which is based on increasing sales turnover and shortening product cycles, is the world's second most polluting sector after oil, and it often works at the expense of its workers (D'Ambrogio, 2014). Fashion brands have been blamed for poor labor welfare, severe environmental pollution, and a massive amount of clothing disposal at the end of the product life cycle. With growing awareness about the fashion industry's societal and environmental impact, customers, employees, investors, suppliers, and governments are steadily voicing a demand for greater CSR (Strähle & Köksal, 2015). CSR is a "concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis" (Dahlsrud, 2008, p. 7). As traditionally profit-driven companies develop CSR strategies, the challenge is to integrate environmental and social matters with those of financial performance. In this context, many studies have examined the impact of CSR on financial performance across a variety of industries, but none of them seem conclusive. In the fashion industry, stakeholder concerns about its negative impact on society and the environment are more acute than in any other industry. Thus, the fashion industry suffers a greater responsibility to fulfill its social and environmental responsibilities. CSR is important to fashion brands, but very few studies have specifically addressed its impact on the fashion industry's

financial performance. Prior research indicates that the objective of a firm shifts from being short-term to long-term relationships with stakeholders (Ruf et al., 2001). Companies that comply with the interests of stakeholders tend to get a favorable response which improves companies' ability to attract resources, to negotiate with suppliers, to charge premium prices for the commodities and services, and to increase more market opportunities, which further lowers the company's cost of capital and improves financial performance (Ruf et al., 2001). However, an increasing body of research indicates that CSR activities might adversely affect financial performance since they do not maximize shareholder profits. Consequently, companies raise operating costs and thereby sacrifice profits to improve CSR performance by donations, improving production processes, and investing in other projects.

Several scholars have argued that the inconsistency of results may be a consequence of missing elements such as variables that exert a moderating effect (Orlitzky et al., 2003; Margolis et al., 2009). In order to assess the potential outcomes of CSR initiatives within the fashion industry, it is important to consider that this industry places a greater emphasis on brand image than other industries (Carrigan & Attalla, 2001). CSR initiatives and their potential outcomes differ between luxury and non-luxury brands within the fashion industry (Youn & Cho, 2021). In terms of non-luxury brands, previous research has proven that the main output of CSR is solid stakeholder relationships that result in employee attraction and motivation, a powerful brand, enhanced consumer perceptions, and profitability (Arrigo, 2013). Luxury brands, however, are both compatible and contrary to aspects of social and environmental engagement, making it difficult to assess the effects of CSR initiatives. Luxury fashion is built upon the concept of offering prestigious and high-quality products as well as limited access to them. When luxury products are perceived as long-lasting, the combination of rare raw materials, a small number of pieces, and a high price is mostly perceived as socially and environmentally responsible (Janssen et al., 2014). However, consumers who purchase luxury clothing are not intentionally concerned with CSR since they focus on quality, prestige, self-image, and price (Kapferer & Michaut-Denizeau, 2014). Thus, CSR may conflict with the self-enhancement concept inherent in most luxury brands, eventually resulting in lower brand value and thus lower financial performance. Some may even object to the use of recycled materials in luxury goods, highlighting a contradiction between sustainability and luxury, which is perceived as superficial and designed to be exclusive.

1.2 Problem statement

In most studies, the relationship between CSR and financial performance was studied across a wide range of industries without focusing on any particular industry, yielding inconclusive results. Concerns regarding the negative impact of the fashion industry on society and the environment are more acute than in any other industry. Therefore, the fashion industry bears an increased responsibility to make CSR investments. However, these investments are likely to be expensive and there are no clear indications as to how they will affect their financial performance. Despite the importance of CSR to fashion brands, few studies have been conducted on the effect of CSR on financial performance in the fashion industry. Thus, the central research goal of this thesis is to find out whether CSR has an impact on the financial performance of fashion brands. The first research question which is supposed to be answered is the following:

To what extent does CSR have an impact on the financial performance of fashion brands?

Many scholars have postulated that inconsistencies in results may result from the absence of variables that moderate the relationship between CSR and financial performance. Some studies have found that adding a moderating variable that can influence the strength of the relationship between CSR and financial performance can significantly enhance the accuracy of the results (Wang et al., 2016). Within the fashion industry, there are differences between luxury and non-luxury brands in the ways they implement CSR initiatives and their potential outcomes. Luxury brands are often both compatible and contrary to aspects of CSR, making it difficult to predict their outcomes. Despite this, no research has been conducted to assess whether brand luxury impacts the strength of the relationship between CSR and financial performance. Accordingly, the second aim of this thesis is to establish whether brand luxury moderates the relationship between CSR and financial performance among fashion brands. Thus, the second research question which is supposed to be answered is the following:

To what extent does brand luxury moderate the impact of CSR on the financial performance of fashion brands?

1.3 Relevance

This thesis provides theoretical contributions to the discussion of CSR in the fashion industry as well as the relationship between brand luxury and CSR. Furthermore, it extends the findings of previous research regarding the impact of CSR on financial performance. Existing research on the link between CSR and financial performance was conducted over a wide range of industries

instead of investigating a specific industry. The fashion industry has a reputation for low labor standards and negative environmental impact, which directly contradicts the definition of CSR and can harm a company's brand image. The fashion industry places a greater emphasis on brand image than other industries (Carrigan & Attalla, 2001). Most studies on the CSR of fashion brands fall into three categories: studies focusing on pursuing sustainable growth through the protection of workers' and suppliers' rights and the environment (Lion et al., 2016; Lueg et al., 2015); studies focusing on CSR communication because fashion companies use CSR as a marketing tool (Lee & Lee, 2018) and studies focusing on how consumers' cognitive responses to fashion companies' CSR affect consumer behavior (Hazel & Kang, 2018). However, studies on the effect of CSR on the financial performance of fashion brands have yet to be conducted. Thus, this thesis contributes to the rich literature by evaluating the impact of CSR on the financial performance of fashion brands. Hereby, it will uniquely add an industry-specific outlook on the link between CSR and financial performance since the fashion industry is especially involved with environmental and social debates. Furthermore, the study will utilize the moderating variable of brand luxury to get even more accurate results on the relationship between CSR and financial performance. Considering that CSR is a multidimensional construct with numerous inputs and outputs, adding the moderating variable of brand luxury, which might affect the strength of the relationship between the CSR and financial performance, can improve the otherwise inconclusive results. Furthermore, it contributes scientifically by applying the research method of regression analysis that has yet to be used in the literature on CSR implementation in the fashion industry. From a practical standpoint, the findings are intended to contribute to ongoing debates about CSR implementation in the fashion industry and the resulting impact on firm performance. Recognizing that companies are under increasing pressure to implement CSR initiatives, additional insights on potential outcomes to facilitate company-wide adoption of such strategies will be beneficial.

1.4 Scope

The purpose of this thesis is to investigate to what extent CSR impacts fashion brands' financial performance with the moderating factor of brand luxury. This will be accomplished through quantitative analysis in the form of a regression analysis of the relevant variables on CSR, financial performance, brand luxury, interaction between brand luxury and CSR, as well as the control variables. In this context, a panel data set will be constructed with measures of CSR, financial performance indicators, a measure of brand luxury, and control variables. The fashion brand CSR engagement will be measured using four consecutive Fashion Transparency Indices published

between 2017 and 2020 (*Fashion Transparency Index 2020*, 2020). The Fashion Transparency Index (FTI) represents a comprehensive public dataset that annually ranks the fashion brands with a published annual turnover of over 400 million U.S. dollars according to the level of information they publish about their environmental and social policies, practices, and impacts on their websites, parent company websites, and published annual sustainability reports. Brand luxury is determined by mapping brands listed in the FTI against Deloitte's Global Powers of Luxury Goods 2020 report's (*Global Powers of Luxury Goods 2020*, 2020) classification of luxury fashion brands by product attributes. Thus, brands are ranked on a binary scale in this study: if they are ranked in Deloitte's Global Powers of Luxury Goods 2020 report, then they are considered luxury brands; otherwise, they are considered non-luxury brands. Financial performance is measured by several metrics, including ROA, ROE, and Tobin's Q. Firm size, leverage, sales growth, and inventory turnover are used as control variables to achieve a more distinct analysis of the issue since those were found to be related to financial performance in general (McWilliams & Siegel, 2000). Financial data and control variables are retrieved from the ORBIS database by Bureau van Dijk, which contains complete and reliable information on private companies and entities. For the underlying analysis, the financial performance measures are treated as dependent variables. Meanwhile, FTI, brand luxury, and their interaction terms, along with the control variables, are treated as independent variables.

1.5 Delimitations

This study does not cover other measures of CSR such as ESG ratings or content analysis since many researchers contend (Dabic et al., 2016) that CSR consists of several dimensions and cannot be applied to all industries. Considering the study is dedicated to the fashion industry, an industry-specific CSR measurement is needed. Thus, the fashion brand CSR engagement will be measured using the FTI. The last edition of the FTI included 250 fashion brands; using this dataset would have resulted in a very small set of observations based on a single year. All FTI ratings from 2017-2020 have been combined into one dataset to develop a consistent measure of the changing behavior of organizations over time. The remaining fashion brands that have not been consistently ranked over multiple years have been removed from the collection. Thus, this study examines 93 fashion brands that were consistently ranked in all editions of the FTI between 2017 and 2020. Accordingly, this study is limited to fashion brands listed on the FTI and to the time period between 2017 and 2020, reflecting the years in which the FTI ratings were homogenized. Data missing within the ORBIS database for any of the control variables will not be completed using different

databases due to a potential lack of comparability. The study examines some of the most important control variables mentioned in previous research, excluding other possible control variables, e.g. R&D. Moreover, to maintain the focus on moderating factors specific to the fashion industry, other possible moderating variables such as corporate governance, board size, board independence, gender diversity, age diversity, etc. were omitted from the study.

1.6 Thesis outline

To provide a detailed analysis of the topic and to answer the research question, the thesis begins with a thorough review of relevant literature regarding the theories on CSR and theories about how CSR impacts financial performance. This is followed by a definition and classification of luxury fashion brands and theories on CSR in luxury brands. Following this, the methodology for the empirical investigation is introduced by specifying the research model, data collection, and measurement tools and details on the sample. Based on the methodology, the quantitative analysis is conducted as a regression analysis of the relevant variables on CSR, financial performance, brand luxury and the control variables. Following that, the regression analysis results are presented, and the main findings are analyzed and discussed in addition to the theoretical findings from the relevant literature. This leads to the conclusion, which includes an answer to the research question posed in the first chapter, as well as management recommendations and future research directions.

2 Theoretical Framework

This section explores corporate social responsibility (CSR), its impact on financial performance, and the definition and classification of luxury in fashion to gain a deeper understanding of these concepts. Firstly, the definition and main theories of CSR are discussed. After that, the impact of CSR on financial performance and the moderating influence of fashion brand luxury is discussed upon which hypotheses are formulated.

2.1 CSR theories

According to Bowen (1953), CSR can be described as ‘’the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society’’. Various theories explain what motivates organizations to engage in CSR activities and what the outcomes are. In recent years, five theories have gained prominence in business research, which can be roughly divided into internal and

external theories (Mellahi et al., 2016). In this context, external theories of CSR, such as stakeholder theory, institutional theory, and legitimacy theory, focus on the organization's relationship with society, which views CSR as an outcome of social relationships and societal norms. Outside-in models suggest that managers' primary responsibility is to align CSR activities with society's expectations, interests, and beliefs. According to these three theories, societal legitimacy is imperative, which means that external actors affect the accepted ideas about an organization's management practices (Frynas & Yamahaki, 2016). On the other hand, the resource-based theory and the agency theory serve as the foundation for internal CSR theories. Inside-out theories focus on how organizations' internal processes influence CSR, which is determined by managerial decisions, economic calculations, ethical considerations, or judgments. Managers decide whether to participate in CSR activities to add value or align CSR activities with their personal beliefs and interests (Frynas & Yamahaki, 2016). For this study, stakeholder theory, legitimacy theory, and institutional theory serve as the primary sources of arguments.

Stakeholder Theory

One of the most widely used theories in CSR studies is stakeholder theory (Hörisch et al., 2014). The stakeholder theory was developed by Freeman in 1984 to explain how management can effectively satisfy stakeholders rather than just shareholders as in profit maximization. According to Freeman (1994), corporate decisions are affected by pressures from various stakeholders and stakeholders are defined as "any group or individual who is affected by or can affect the achievement of an organization's objectives" (p. 53). In order of importance, the most frequently discussed stakeholders of an organization include: owners, employees, consumers, suppliers, investors, governments, families of owners, political groups, trade associations, and the public (Mitchell et al., 1997). As such, it is a complex theory because there is a number of different stakeholders, each of which has its claim on the firm. This can result in stakeholders pressuring firms to adopt certain CSR strategies or activities, which ultimately may affect the firm's performance.

Legitimacy Theory

Legitimacy theory provides an explanation for firms' incentives to engage in CSR activities (Chan et al., 2014). According to legitimacy theory, organizations do not operate independently; they are connected to society as a whole. Furthermore, the legitimacy theory indicates that businesses try to avoid social sanctions by ensuring that their activities comply with the law and regulations, and complying with social norms. Organizations gain legitimacy through their commitment to

reporting their activities if those activities are expected by their community or society (Deegan et al., 2002). Legitimacy theory presumes organizations and societies have a "social contract" that defines expectations for a company's behavior (Patten, 1992). Social contracts are not permanent and social values change with time, making it necessary for companies to respond consistently to the macro-environment within which they operate. By way of visible CSR practices, firms may communicate with internal and external stakeholders and build a reputation and consumer trust (Panwar et al., 2014). Hence, legitimacy theory offers an insight into how companies incorporate CSR to fulfill their social contract, enjoy benefits and ensure business survival.

Institutional Theory

Institutional theory describes how organizations respond to social and environmental pressures influenced by institutional settings. Institutional groups include agencies that set up industry standards, vendors, customers, competitors, professional organizations, and industry certifications (John et al., 2001). For an organization to gain the support of institutions and be recognized as legitimate, it must follow the rules and norms established by institutions. Generally, an organization accepts the practices and features that are institutionalized or accepted as norms, as a social unit within an industry (Scott, 2008). If firms fail to meet these norms, the continuity of the business is at risk. From a management perspective, the pressures from the institutional theory could drive firms to engage in CSR activities. Institutional theory can help explain why firms undertake CSR activities even in the absence of obvious economic benefit since they are seeking to legitimize their actions in the eyes of other stakeholders (Glover et al., 2014).

2.2 CSR impact on financial performance

Both theoretically and empirically, researchers have attempted to measure how CSR impacts financial performance, either through accounting- or market-based measures. However, the results have been inconclusive since it was found that the effect can be positive, indicating that companies can improve financial performance by incorporating CSR measures or can be negative, indicating that companies incur costs through CSR.

2.2.1 Positive relationship between CSR and financial performance

CSR activities can be costly investments for firms to undertake, as they require investments of limited financial resources. Regardless, as stakeholders are able to pressure firms to adopt certain CSR activities that could impact the firm's performance, the stakeholder theory suggests managers

should be conscious of stakeholders' interests. (Jensen & Meckling, 1976). Accordingly, stakeholder pressure may influence decision-making around CSR from a stakeholder theory perspective. In the last decade, the fashion industry has come under scrutiny and criticism from society for its negative effects on the environment and the rights of workers (Pedersen et al., 2018). With this wave of criticism and disapproval, many fashion brands are taking measures to modify and adjust their business model to minimize the negative social and environmental impacts (Todeschini et al., 2017). Institutional theory helps explain why fashion brands engage in CSR since they try to find legitimate practices in the eyes of their stakeholders. To ensure their legitimacy, companies engage in CSR based on the needs of different institutions, such as customers or environment protection groups. Similarly, in accordance with the institutional theory, companies strive to ensure that they are operating within the bounds of laws and regulations, in accordance with social norms, in order to avoid social sanctions. By reporting CSR activities throughout the supply chain and taking steps to minimize corruption and ensure transparency, fashion brands can improve their legitimacy and consumer trust based on the legitimacy theory (de Abreu, 2015). In this way, legitimacy contributes to long-term and sustained competitive advantages by developing a positive brand image with consumers and other stakeholders as well as influencing purchase intentions (Barnett, 2007). As a whole, the fashion industry focuses more on brand image than any other industry (Carrigan & Attalla, 2001). When a brand's values align with those of its consumers, consumers are more likely to purchase the brand's products, increasing recognition benefits and promoting brand legitimacy (Iglesias et al., 2019). Therefore, a higher commitment to CSR could therefore enhance a firm's legitimacy in society and result in improved financial performance. Prior empirical findings also support the notion that CSR positively impacts financial performance (Wang & Sarkis, 2017; Li et al., 2017; Rodriguez-Fernandez, 2016).

Therefore, the following hypothesis is formulated:

H1a: Corporate social responsibility has a positive impact on financial performance.

2.2.2 Negative relationship between CSR and financial performance

A growing body of research suggests that CSR activities have adverse effects on financial performance since they are not aligned with the company's obligation to maximize shareholder profits (Sundaram & Inkpen, 2004). Friedman (2007) also advocates that firms should focus on maximizing profits rather than social well-being and that CSR may negatively impact financial performance. The manager of the business has a responsibility to maximize the value of the

corporation to its shareholders. As agents of the shareholders, managers have no mandate to engage in socially-responsible projects that do not enhance the ability of the firm to generate income (Pava & Krausz, 1996). Spending much time, resources, and effort on CSR leads to increased operating costs and a corresponding loss of profits (Chen et al., 2015). As fashion brands attempt to maximize profits, they often focus on low-cost design and flexibility, as well as speed-to-market, key strategies for maintaining a profitable position in an increasingly competitive environment (Bhardwaj & Fairhurst, 2010). In a business where profit margins primarily depend on brand image, it is vital to manage that value over time (Kort et al., 2006). Brand image indicates whether a consumer is willing to pay more for a certain brand over a similar product at a lower cost. Consumers who value a brand image of CSR would pay a higher price for products produced by socially conscious companies (Y. Wu et al., 2020). Thus, companies will have a strong incentive to avoid the costs of CSR while at the same time leveraging the benefits of appearing socially responsible. The practice of making unsubstantiated or misleading claims about a firm's environmental and social impact is referred to as greenwashing (Berrone et al., 2017). In the fashion industry, more and more companies are subjected to accusations of greenwashing (Delmas & Burbano, 2011). The notion of greenwashing is viewed with suspicion by the public, and it could pose a risk to the company's legitimacy (Baldassarre & Campo, 2016). Increasing the legitimacy of companies is crucial when it comes to building trust and reputation among stakeholders through the promotion of CSR initiatives. (Panwar et al., 2014). Since the fashion industry operates in an environmentally sensitive sector, where external actors often scrutinize the company's actions, legitimacy can easily be revoked, negatively affecting financial performance. Moreover, empirical evidence suggests that CSR negatively affects financial performance (Brammer et al., 2006; Rodrigo et al., 2016; Martínez-Ferrero & Frías-Aceituno, 2015).

Therefore, the following hypothesis is formulated:

H1b: Corporate social responsibility has a negative impact on financial performance.

2.3 The definition of luxury

There is a lack of consensus about defining and understanding luxury, which has resulted in a wide variety of definitions of the term (Atwal & Williams, 2017; Ko et al., 2019). A luxury product, brand, or service has an associated set of unique characteristics, such as excellent quality, high price, luxury, and rarity, history and heritage, aesthetics, and overindulgence (Dubois et al., 2001).

Out of all these characteristics, price is considered one of the most significant features of luxury (Dubois & Paternault, 1995). The majority of definitions use price as the criterion for distinguishing luxury from non-luxury products (Kapferer et al., 2014). The higher the price of a product, the more luxurious consumers perceive it to be (Yeoman & McMahon-Beattie, 2006). As Kapferer and Bastien (2012, p. 24) point out, luxury products are marketed at a price that far exceeds their direct functional value. The price of a product became the most widely used criterion to evaluate the luxury of the product in the early 1990s, as it was considered the most objective and the easiest attribute to measure (Kapferer & Laurent, 2016). Studies have even used price as the sole distinguishing characteristic of luxury products (Gutsatz & Heine, 2018). Consumers also seem to share this understanding of luxury products. Several luxury consumer surveys in different countries have identified 'expensive' as the most frequently cited component of ‘luxury products' (Dubois & Paternault, 1995; Godey et al., 2013). In the study by Dubois et al. (2001), "superior quality" ranks as the top attribute associated with luxury, followed by "high price.". Luxury falls at the extreme end of the prestige category, where price is used as an indicator of quality. Furthermore, high prices are also correlated to the accessibility of a luxury branded product, according to Corbellini and Saviolo's (2014) analysis. To maintain and enhance luxury, luxury brands must maintain a high level of awareness and tightly controlled distribution (Mason, 1981; Phau & Prendergast, 2000). Luxury brands are at the top of the brand pyramid (Kapferer, 2008) or at the highest end of the brand continuum (Vigneron & Johnson, 2004). There are several levels of distinction for luxury brands, even when the above characteristics are met (Vigneron & Johnson, 2004). A lot of research has been conducted on intermediate levels and brand extensions, particularly in the fashion industry. Based on comparable literature, luxury brands are divided into hierarchical levels according to their price (Kapferer, 2008; Corbellini & Saviolo, 2014; De Barnier et al., 2012; Vigneron & Johnson, 2004).

2.4 Classification of luxury

Several parameters can be used to identify brands in the fashion industry. Generally speaking, price has been considered a key attribute in categorizing products that are arranged in a hierarchical manner. In the hierarchy of brands, luxury lies at the top, where high price indicates product qualities such as quality and scarcity. Brands can be classified into four types based on product attributes: griffe, luxury brands, premium brands, and mass-market brands (Hameide, 2011). Figure 2-1 demonstrates that the higher the price range, the more limited the target audience is because fewer people can afford it. Griffe, or the designer brand at the top of the brand pyramid, is the most expensive (Kapferer, 2008). Griffe is a word derived from handwriting used in

describing a piece of art created in an atelier that is genuine, unrepeatable, and timeless (e.g., Yves Saint Laurent). The next category of a brand is luxury, which comprises designer brands (e.g., Chanel and Dior) and craftsmanship (e.g., Gucci and Louis Vuitton). Luxury brands have six characteristics: High price, exceptional quality, scarcity, aesthetics, artisanal heritage, and excessiveness (Dubois et al., 2001). Luxury brands can boast exceptional quality, scarcity, and aesthetics of their products, all of which justify their premium price. The artisanal heritage of many luxury brands has long been linked to their cultural heritage - such as English classicism and tailoring, Italian Romanticism, and French couture and artistry (Donzé & Wubs, 2019). Luxury brands are also known for offering excessive and redundant products, as many of them are not needed but are still desired by many consumers (Hameide, 2011). This is because these items convey a sense of success and enable the consumer to obtain privileged social standing. The third category of brands is premium brands. A premium brand comprises elements from both luxury and mass-market brands. Despite being higher priced than mass-market brands, they are more accessible than luxury brands (Hameide, 2011). With an emphasis on product development and branding, premium brands provide a more cost-effective alternative to luxury products. An essential element of the success of premium brand strategies is prestige, differentiation, and an affordable premium price. Furthermore, reasonable premiums ensure limited access for the masses to this brand (Truong et al., 2009). The final brand category is mass-market brands. Generally, these brands offer mass-produced, widely-distributed, and low-priced products. According to (Hameide, 2011), these products have an acceptable level of quality. Using trends established by famous designers, the mass-market brand offers ready-to-wear apparel for a wide range of consumers. Rather than using expensive fabrics and complicated techniques that machines can manufacture, they use cheaper materials and simpler techniques to save time and money.

Figure 2-1 The classification of fashion brands (adopted from Kapferer (2008), p.98)

2.5 CSR in luxury brands

Although corporate social responsibility has been around for several decades, the concept of luxury is still considered somewhat conflictive (Joy et al., 2012). While CSR promotes virtues like ethics, altruism, and moderation, luxury is associated with wasteful consumption, mindless pleasures, and ostentation (Cervellon & Shammas, 2013); (Achabou & Dekhili, 2013). However, luxury is also associated with notions of tradition and craftsmanship, art and creativity, scarcity and ephemerality, as well as respect for materials and high quality (Cailleux et al., 2009). Scarcity relates to the notion of responsible consumption and helps conserve natural resources, whereas ephemerality refers to the idea of endurance and timeless or classics (Janssen et al., 2014). Luxury is both compatible and contradictory with aspects of social and sustainable engagement, making it difficult to assess the effect of CSR initiatives implemented by luxury brands.

2.5.1 Brand luxury weakens the link between CSR and financial performance

Earlier research indicates that consumers do not necessarily perceive luxury and corporate social responsibility as compatible and do not expect luxury brands to demonstrate CSR (Janssen et al., 2017). According to previous studies, CSR attributes may even negatively influence the perception of luxury products. A significant amount of criticism was directed at recycled materials, as they were associated with inferior quality. This view is also supported by (Achabou & Dekhili, 2013), who found that using recycled materials in luxury goods negatively affects consumer preferences.

Generally, consumers are not opposed to recycled materials but do not like that such materials constitute the entire product. Researchers suggest that consumers will become reluctant to buy environmentally friendly clothing if it does not provide the same intrinsic quality attributes as conventional clothing (Janssen et al., 2014). Furthermore, research has found that customers perceive CSR and luxury as mutually exclusive concepts (Torelli et al., 2012). Luxury brands promote superficial lifestyles, inspire excessive consumption, symbolize wealth inequality while encouraging dominance, hedonism, and social distance (Janssen et al., 2017). Conversely, corporate social responsibility (CSR) is associated with very different values, including social justice, environmental protection, and equal opportunity (Torelli et al., 2012). Thus, consumers may be skeptical of luxury brands' CSR efforts and question whether such engagement is, in fact, self-serving or even hypocritical. Consequently, consumers attribute luxury brands' CSR engagement to extrinsic motives, such as gaining a competitive edge or increasing profits (Du et al., 2007). Consumers might feel that the company is taking advantage of the cause to manipulate its customers, and they may doubt the legitimacy of the cause, which is a significant factor in consumers' purchase decisions according to legitimacy theory (Bhattacharya & Sen, 2003; Wieseke et al., 2014). The perception that the company's CSR activities are motivated by it extrinsically is likely to exacerbate consumer mistrust of a company's identity, undermining consumer loyalty. As outlined in numerous research articles (J. T. Bowen & Chen, 2001) (Wieseke et al., 2014), customer loyalty is significant for financial success and growth (Keiningham et al., 2008). As such, to achieve long-term financial success, companies should focus on building a loyal customer base rather than continually acquiring new customers (Schmitz et al., 2019). Because loyal customers perceive luxury and CSR as incompatible, they are less likely to remain loyal when the brands engage in CSR, thereby weakening the link between CSR and financial performance.

As a result, the following hypothesis is formed:

H2a: Brand luxury weakens the link between CSR and financial performance.

2.5.2 Brand luxury strengthens the link between CSR and financial performance

Some experts have pointed out that luxury brands have elements that make them sustainable. Luxury brands are, in fact, the antithesis of short-cycle fashion as consumers tend to be loyal to their purchases (Carrigan et al., 2013). Moreover, the quality and attention to detail contribute to the durability of the products, which promotes product longevity. The scarcity value of their

products suggests that luxury brands encourage more sustainable consumption, thereby protecting natural resources (Hennigs et al., 2013; Janssen et al., 2014). While the above attributes seem to support the notion of possible compatibility between luxury and sustainable development, some recent developments contradict these claims (Kapferer & Michaut-Denizeau, 2014). Luxury brands have been criticized for their behavior regarding social and environmental responsibility (Carrigan et al., 2013). Several luxury brands have shifted to low-cost outsourced production despite promoting handmade production (Kapferer & Michaut-Denizeau, 2014). In this context, critics point out employees' working conditions, including pesticide use in cotton production that isn't regulated, child labor practices, and pollution in extraction countries (Kapferer & Michaut-Denizeau, 2014). Another criticism refers to the use of animal-sourced products and cruelty to animals caused by industrial breeding. The luxury industry also encourages illegal activities, for example, the ivory trade (Davies & Streit, 2013). Moreover, luxury brands are criticized for fostering social inequality between rich and poor (Kapferer, 2010) as well as excessive consumer debt (Carrigan et al., 2013). Beyond these criticisms, luxury brands must meet the demands of a growing number of educated luxury consumers with an awareness of environmental and social responsibilities. They value brands' integrity and use luxury brands not only as a way to signal their values and identities but also to reflect their concerns and dreams for a better world. Consequently, luxury brands not only tend to have similar stakeholder expectations as non-luxury brands, but they also enjoy higher margins (Diallo et al., 2021). According to stakeholder theory and legitimacy theory, luxury brands should consider stakeholder interests in making CSR decisions, as they are then more likely to purchase their products and appear more legitimate. Luxury brands typically have higher profit margins than non-luxury brands, increasing the value of CSR activities. In response to changing consumer expectations, a strategic use of CSR measures may enhance the competitive edge of luxury brands, thereby strengthening the relation between CSR and financial performance (Hennigs et al., 2013).

As a result, the following hypothesis is formed:

H2b: Brand luxury strengthens the link between CSR and financial performance.

3 Methodology

This chapter describes the research method that was used in the study. The first paragraph describes the research method that was used to test the hypotheses. This is followed by a description of the variables used in the research and how they were measured. Those variables

were classified as independent, dependent, and control variables. The next section discusses the sample used for the study and how the necessary data were collected.

3.1 Research model

A review of past research has been conducted to determine which methods have been used to research the effects of CSR on financial performance. In numerous studies, regression models were used to test the impact of CSR on financial performance and several moderating effects (Wang & Sarkis, 2017; Li et al., 2017). In business decision-making, regression analysis is the most widely used and versatile technique (Black & Babin, 2019). A regression model is advantageous in that it calculates the influence of one or more predictor variables on a dependent variable and that it is a straightforward technique that provides prediction and explanation. As regression analysis has proven effective in past research on the impact of CSR on financial performance, this study utilizes a regression analysis to assess the impact of CSR on financial performance. Several types of regression in regression analysis can be used to determine which independent variables will predict the dependent variables. The choice of a regression model is often determined by the type of data that is available (Hadi & Chatterjee, 2015). In this project, a panel dataset will be analyzed as a hybrid of cross-sectional and longitudinal data to adjust for omitted or unobservable variables. The goal of this type of analysis is to systematically evaluate the behavior of organizations over a period of time, incorporating individual heterogeneity into the evaluation process (Tang et al., 2012). Studies using panel data have used either fixed effects or random effects regression models (Barnett & Salomon, 2012; Surroca et al., 2010). The use of fixed effects models and random effects models can be used to address several panel data set problems relating to cross-sectional characteristics (e.g., heteroscedasticity), time-series characteristics (e.g., autocorrelation), and missing data (Stock & Watson, 2008). Data must be balanced, and there should be enough observations per firm to decide whether to use a fixed effects or random effects model (Bell et al., 2019). A fixed-effects analysis assumes that predictors and outcomes may be impacted by the individual characteristics of the entity, which will need to be accounted for. Moreover, fixed effects assume these time-invariant characteristics are unique to an entity and are therefore uncorrelated with any other individual characteristic (Plümper & Troeger, 2007). A random effects model differs from a fixed effect model in that the variation across entities is considered random and uncorrelated with the regressors (Greene, 2005). This enables time-invariant variables to act as explanatory variables and draw conclusions beyond the sample used (Laird & Ware, 1982). Testing for endogeneity using the Hausman test, which

determines whether unique errors are correlated with regressors, can help determine whether fixed effects or random effects models should be used (Chmelarova, 2007). The underlying null hypothesis indicates that the unique errors are uncorrelated with the regressors, implying that the random effects model is appropriate (Holly, 1982). Additionally, many researchers include a lagged value of the dependent variable as a predictor when estimating regression models for longitudinal panel data (Nuber et al., 2019). Thus, a time-lagged analysis will be applied to account for diverging time-lags between strategic initiatives and their manifestation within an organization.

The following regression model is selected to test H1a and H1b to determine if CSR has a positive or negative impact on the financial performance of fashion brands.

$$FP_{i,t} = \alpha_0 + \beta_1 CSR_{i,t-1} + \beta_x Controls_{i,t} + \varepsilon_i$$

$FP_{i,t}$ = Financial performance of firm i in year t
$CSRi,_{t-1}$ = CSR performance in year t-1
$Controls_{i,t}$ = Firm size, leverage, sales growth
ε_i = Firm specific errors

A second regression model has been developed to test H2a and H2b to determine whether brand luxury moderates the relationship between CSR and financial performance.

$$FP_{i,t} = \alpha_0 + \beta_1 CSR_{i,t-1} + \beta_2 LUX_{i,t-1} + \beta_3 CSR_{i,t-1} LUX_{i,t-1} + \beta_x Controls_{i,t} + \varepsilon_i$$

$FP_{i,t}$ = Financial performance of firm i in year t
$CSRi,_{t-1}$ = CSR performance in year t-1
$LUX_{i,t-1}$ = Dummy variable for brand luxury of firm i in year t-1
$CSR_{i,t-1} LUX_{i,t-1}$ = Moderating effect of CSR and brand luxury of firm i in year t-1
$Controls_{i,t}$ = Firm size, leverage, sales growth
ε_i = Firm specific errors

Section 3.2 gives additional details about how the variables are measured and why they are included in the study.

3.2 Measurement

The following section describes the variables used to test the hypotheses. Initially, the CSR calculation is described. This is followed by a description of how financial performance is

measured. Additionally, the method of measuring brand luxury is explained. Lastly, the control variables used in this study are discussed.

Corporate Social Responsibility

A significant component of this study is the assessment of CSR. The level of corporate social responsibility has been measured by different methods in past research. A variety of studies have used the questionable reputation index, self-reported questionnaires, charitable donations, MSCI KLD 400 Social Index, or Bloomberg's Environmental, Social, and Governance (ESG) database (Garcia-Castro et al., 2010). However, Aras et al. (2010) contend that CSR consists of several dimensions and cannot be applied to all industries. Considering the study is dedicated to the fashion industry, an industry-specific CSR measurement is needed. Thus, the fashion brand CSR engagement will be measured using the Fashion Transparency Index (*Fashion Transparency Index 2020,* 2020), which is a comprehensive public dataset that annually ranks the fashion brands with a published annual turnover of over 400 million US dollars according to the level of information they publish about their environmental and social policies, practices, and impacts on their websites, parent companies' websites, and published sustainability reports. In terms of social and environmental issues, the Fashion Transparency Index (FTI) addresses 220 indicators, including animal welfare, biodiversity, chemicals, climate, due diligence, forced labor, freedom of association, gender equality, living wages, purchasing practices, supplier disclosure, waste and recycling, working conditions, and others. Final FTI scores are calculated based on a weighted average of five sections: Policy & Commitments (PC), Governance (GO), Traceability (TR), Know, Show & Fix (KSF), and Spotlight Issues (SI). The dataset also allows the extraction of section-specific scores, enabling a detailed analysis of relevant aspects within each category. This is in line with the argument made by Mishra & Suar (2010) who suggest that it is difficult to assess the multifaceted nature of corporate social responsibility without using a multidimensional measurement method. This study measures CSR by calculating the percentage of points awarded to each brand's FTI score and FTI section score. FTI calculates the brand's total score by adding together the weighted scores from each section, which represent the points earned out of the points available for each section. Different weights are assigned to each section, as some sections are worth more points out of a total amount of points. Accordingly, the CSR variables represents the percentage of points scored from the total number of points awarded per section and total FTI score.

Financial Performance

This study focuses on firm financial performance as a primary measure. This variable serves as the dependent variable in this study since it examines to what extent CSR performance impacts an organization's financial performance. Past studies have examined the use of accounting-based and market-based proxy measures of financial performance. By doing so, one measurement method's disadvantage can be compensated for by the other. Researchers commonly use two accounting-based measurements to gauge a firm's performance: Return on Assets (ROA) and Return on Equity (ROE). ROA is calculated by dividing a a company's net income by the average of total assets (Nollet et al., 2016; Wang & Sarkis, 2017; Xie et al., 2017). ROE is calculated by dividing a company's net income by the average shareholders' equity (Wu & Shen, 2013; Waddock & Graves, 1997). However, there are some disadvantages to using these accounting-based measures. Firstly, Ahamed et al. (2014) argue that accounting-based measurements can be manipulated by managers by using various accounting procedures. In contrast, market-based measurements provide a more forward-looking perspective since they represent how investors or shareholders assess a company. The market-based measure used in this study is Tobin's Q since it is the most widely used, according to Inoue & Lee (2011). An organization's Tobin's Q is defined as its market value divided by its total assets (Inoue & Lee, 2011; Harjoto & Jo, 2011). The Q value of a firm is one if its market value equals its asset replacement costs. It suggests that a company's stock is overvalued, indicating that it is a good investment. This means that if the value is less than one, the replacement costs of a firm's assets exceed the firm's stock price, suggesting that the firm's stock is undervalued.

Brand Luxury

Previous studies have classified fashion brands based on their product attributes and grouped them in a hierarchical order (Kapferer, 2008). Several product attributes have been considered helpful in categorizing products arranged hierarchically, including price and quality. According to previous brand management literature, luxury brands should be viewed at the top of the hierarchy. In this regard, the classifications address the criteria that determine the level of brand luxury. Along with tangible characteristics, symbols are integral components of a brand, as they contribute to the desirability of luxury brands (Dubois et al., 2001). Therefore, researchers categorize luxury according to product characteristics and further recognize intangible aspects when evaluating perceived luxuriousness (Vigneron & Johnson, 2004). This type of categorization is generally derived from qualitative data from surveys, interviews, or case studies. The time constraints of this study prevented a qualitative analysis of brand luxury based on intangible attributes, so this study's

measurement of luxury is based on a list of fashion brands categorizing luxury based on product attributes. This list of luxury fashion brands is provided by Deloitte's Global Powers of Luxury Goods 2020 report (*Global Powers of Luxury Goods 2020*, 2020). Deloitte's report includes a range of brands in the luxury category, from griffe brands to luxury brands to premium brands. Companies are included in the report mainly based on price premiums, raw material rarity and craftsmanship quality, product exclusivity, customer service and personalization, and quality and exclusivity of their sales points. Companies that sell luxury goods had to fit into at least one of four categories: designer and premium clothing and footwear (ready-to-wear); bags and accessories (including eyewear); fine jewelry and watches; and prestige cosmetics and fragrances. Based on this, brands are measured on a binary scale in this study: if they are ranked in Deloitte's Global Powers of Luxury Goods 2020 report, they are considered luxury brands; otherwise, they are considered non-luxury (see Appendix A).

Control variables

According to Barnett & Salomon (2012), the lack of control variables could contribute to the varied results regarding the effects of CSR. Accordingly, a number of control variables have been applied in previous studies to examine the impact of corporate social responsibility on corporate profitability. Control variables that influence the relationship between CSR and financial performance are typically size, leverage, sales growth, and inventory turnover, as shown in the previous literature.

Size

A significant body of research has found that firm size has a considerable impact on financial performance (Kim et al., 2019; Inoue & Lee, 2011). Also, according to the legitimacy theory, large corporations devote more resources to CSR since they are more visible and face more outside pressure (Gamerschlag et al., 2010). Earlier research has determined that smaller companies are less likely to engage in CSR-related activities than large or mid-sized companies and that the degree of CSR disclosure correlates to company size and the size of the company (Orlitzky et al., 2003). To determine the size of the company, the natural logarithm of its assets will be employed (Karagiorgos, 2010).

Leverage

Due to its impact on managerial behavior and CSR policies, leverage was used as an additional control variable in the study (Barnett & Salomon, 2012). According to Wang & Sarkis (2017), a

higher leverage ratio may indicate greater financial risks and lead to poor financial performance. Moreover, (Inoue & Lee, 2011) argue that higher leverage ratios will limit the ability of managers to invest in new opportunities. Consequently, this will negatively impact a company's financial performance. To calculate leverage, the total debt of a company is divided by its total assets (Wang & Sarkis, 2017; Inoue & Lee, 2011). Secondly, as a robustness test, leverage is additionally measured by dividing the total debt of a company by its total equity (Jackson, 2009).

Sales Growth

It has been found that firms with higher sales growth assign more working capital to investments, which may impact their short-term profitability (Wang & Sarkis, 2017). Similarly, Nollet et al. (2016) have also included growth in sales as a control variable after finding it to be essential to other studies examining the relationship between CSR and financial performance. A measure of sales growth is the percentage change in sales from year t-1 to year t (Wang & Sarkis, 2017; Nollet et al., 2016). Secondly, as a robustness test, sales growth is additionally measured by dividing the sales in year t by the sales in year t-1 (Carlson et al., 2006).

Inventory Turnover

According to Choudhary and Tripath (2012), the link between financial performance and inventory performance is complex since inventory increases the firm's cost and asset value. When excess inventory is present, the inventory carrying cost rises, indicating poor supply chain management and demand forecasting (Singhal, 2005). In addition, lower inventories require a smaller amount of working capital (Boute et al., 2007). Gaur, Fisher, and Raman (2005) also addressed this issue, stating that declining sales result in a lower inventory turnover so that current assets are blocked and not liquidated. As a result, a high inventory turnover ratio indicates that more liquid capital is available for other business processes. The inventory turnover ratio is measured by dividing cost of goods sold by the average inventory level (Kolias et al., 2011).

Table 3-1 includes all variable definitions for dependent and independent variables.

Table 3-1 Variable Definitions

Name	Definition	Measurement
Financial Performance		
ROE	Return on Equity	Net income / average of shareholder's equity
ROA	Return on Assets	Net income / average of total assets
Tobin's Q	Tobin's Q	(Market value of equity + book value of liabilities) / book value of total assets
Corporate Social Responsibility		
FTI	Fashion Transparency Index Score	Percentage of points scored from the total number of points awarded per section (PC, GO, TR, KSF, SI) and total FTI score
PC	Policy & Commitments Score	
GO	Governance Score	
TR	Traceability Score	
KSF	Know, Show & Fix Score	
SI	Spotlight Issues Score	
Brand Luxury		
LUX	Brand Luxury	Dummy variable, 1=luxury, 0=non-luxury
Control Variables		
SIZE	Firm Size	Natural logarithm of total assets
LEV	Leverage	Total debt/total assets
LEV_A	Leverage	Debt/equity
SG	Sales Growth	Total sales year t - total sales year $t-1$ / total sales year $t-1$
SG_A	Sales Growth	Total sales year t / total sales year $t-1$
INVTURN	Inventory Turnover	Cost of goods sold/average inventory

3.3 Sample

The Fashion Transparency Index was selected as a primary data source to collect information about CSR policies, practices, and impacts among fashion brands. It represents a comprehensive set of public data annually ranking the world's largest and most influential fashion brands and retailers by the amount of human rights and environmental information they disclose on their websites, parent company websites, and published annual sustainability reports. These brands represent a variety of market segments across Europe, North America, South America, Asia, and Africa and have an annual turnover of over $400 million. Given that these brands are among the

biggest and most influential consumer brands in the fashion industry, they have the most significant negative social and environmental impacts, and they have a great responsibility to make lasting changes. Considering that not all fashion brands have been consistently reviewed and ranked in all editions of the FTI, a four-year panel data set has been constructed and compiled based on the FTI scores from 93 companies consistently ranked between 2017 and 2020. General company data, such as financial data, firm size, leverage, sales growth, and inventory turnover are retrieved from the ORBIS database by Bureau van Dijk containing exhaustive and reliable data on private companies and entities. Even though not all financial performance data and control variable data were made available through ORBIS, firms were not excluded for a specific year when data was unavailable to prevent bias in the sample. As a result of labeling all 93 fashion brands as either luxury or non-luxury, the distribution of luxury brands in this sample is about 21,5 percent.

4 Results

This chapter contains the results of this study. First, the descriptive statistics of the variables that are included in this study are discussed. Subsequently, the correlation coefficients among the variables are examined based on the correlation matrix. After that, the regression analysis results are discussed and robustness tests are performed.

4.1 Descriptive Statistics

The descriptive statistics for the panel dataset are presented in Table 4.1. The panel data is comprised of 93 global fashion brands over the period of 2017 to 2020 with a published annual turnover of over 400 million U.S. dollars. It gives an overview of the number of observations, mean, median, standard deviation, minimum and maximum. The maximum amount of observations is 372 reported in the CSR variables and the luxury dummy variable LUX. The lowest amount of observations identified is 280 observations for the Tobin's Q variable. The three financial performance proxies ROE, ROA and Tobin's Q were used to measure the financial performance of firms. The first financial performance proxy ROE has the mean of 11.236 and a median of 14.185 with a standard deviation of 55.784. The minimum and maximum values are -458.87 and 443.51 respectively. The second financial performance proxy ROA has the mean of 5.328 and a median of 6.055 with a standard deviation of 8.901. The minimum and maximum value are -48.92 and 26.14 respectively. The third financial performance proxy Tobin's Q has the mean value of 1.965 and the median value of 1.64 with a standard deviation of 1.6. The minimum and the maximum value are 0 and 9.83. This study measures CSR by calculating the percentage

of points awarded to each brand's FTI score and FTI section score. The FTI reviews and benchmarks brands public disclosure on human rights and environmental issues across 5 key areas PC, GO, TR, KSF and SI. FTI calculates the brand's total score by adding together the weighted scores from each section, which represent the points earned out of the points available for each section. Different weights are assigned to each section, as some sections are worth more points out of a total amount of points. Accordingly, the descriptive information regarding the CSR variables represents the percentage of points scored from the total number of points awarded per section and total FTI score. The variable FTI has the mean of 0.272 and the median of 0.241 with a standard deviation of 0.172. The minimum and the maximum value are 0.0 and 0.728 respectively. With a standard deviation of 0.266, the section variable PC has a mean of 0.586 and a median of 0.596. Its minimum and maximum values are 0 and 1, respectively. On average, PC scores the best against the other FTI sections. Section variable GO indicates a mean of 0.39, median of 0.333, and standard deviation of 0.291. This variable has a minimum value of 0 and a maximum value of 1. TR has a mean of 0.166 and a median of 0.1, with a standard deviation of 0.208. Minimum and maximum values are 0 and 0.82, respectively. The KSF variable has a mean of 0.208, a median of 0.176, and a standard deviation of 0.139. The minimum and maximum value are 0 and 0.59 respectively. The section variable SI has the mean of 0.177 and the median of 0.143 with a standard deviation of 0.177. Minimum and maximum values are 0 and 0.706, respectively. A second independent variable of this study is LUX, which is measured as a binary variable of 1 for luxury and 0 for non-luxury. The variable LUX has the mean of 0.215 and the median of 0 with a standard deviation of 0.411. The minimum and the maximum value are 0 and 1 respectively. Table 4-1 provides detailed descriptive statistics for the other independent variables that serve as control variables.

Table 4-1 Descriptive statistics

Variables	Obs	Mean	Median	Std. Dev.	Min	Max
Financial Performance						
ROE	318	11.236	14.185	55.784	-458.87	443.51
ROA	328	5.328	6.055	8.901	-48.92	26.14
Tobin's Q	280	1.965	1.64	1.6	0	9.83
CSR						
FTI	372	.272	.241	.172	0	.728
PC	372	.586	.596	.266	0	1
GO	372	.39	.333	.291	0	1
TR	372	.166	.1	.208	0	.82
KSF	372	.208	.176	.139	0	.59
SI	372	.177	.143	.177	0	.706
Control Variables						
SIZE	331	.023	.023	.002	.017	.029
LEV	300	.623	.608	.227	.201	2.041
LEV_A	282	2.589	1.415	9.611	-18.48	149.53
SG	301	1.042	1.02	.405	.07	4.71
SG_A	299	.034	.022	.407	-.931	3.706
INVTURN	315	7.152	6.47	3.521	2.06	30.35
Luxury Dummy						
LUX	372	.215	0	.411	0	1

The Pearson correlation test was conducted in order to determine if there is a correlation between the variables used in this study. The Pearson correlation coefficients can be derived from Table 4.2, with statistically significant correlations indicated at the 1%, 5% and 10% levels. The correlation matrix demonstrates a statistically significant positive relationship between the FTI score and Tobin's Q. Also some of the FTI section scores PC, GO, TR and SI are significantly and positively correlated to both ROA and Tobin's Q. Moreover, the CSR measures FTI final score and FTI section scores (PC, GO, TR, KSF, SI) exhibit a positive and statistically significant relationship. Similarly, the financial performance measures ROA, ROE and Tobin's Q are positively and statistically significantly correlated. The variable LUX does not show consistent results in terms of direction of correlation among the FTI final score and FTI section scores. For instance, LUX negatively correlates to the FTI score at a 5% level of statistical significance whereas it positively correlates to TR and KSF at a 1% level of statistical significance. Furthermore, the direction of correlation between LUX and the financial performance measures ROA, ROE and Tobin's Q is consistently positive and statistically significant. Overall, it can be

derived that, according to the correlation matrix for the underlying sample, the correlations between LUX and the indicators for financial performance are positive. Some control variables show consistent results in line with observations from previous studies. For instance, the variable SIZE shows a positive and significant correlation with all financial performance measures. Noteworthily, SIZE is also positively and significantly related to the FTI score, all FTI section scores, and the LUX variable. Consistent with previous research, both measures of sales growth SG and SG_A are positively and statistically significantly correlated to the financial performance measures ROA, ROE and Tobin's Q. In addition, they are also positively and statistically significantly correlated with GO. The two measures of leverage LEV and LEV_A show inconsistent results in direction of correlation among the financial performance measures ROA, ROE and Tobin's Q. Remarkably, both leverage variables exhibit a positive and significant relationship between both ROA and Tobin's Q which is not consistent with previous research. Moreover, the correlation results between the leverage variables and the FTI final score as well as the FTI section scores are inconsistent in direction. The variable INVTURN is positively and statistically significantly correlated to ROA and ROE and generally shows a positive direction of correlation among all financial performance measures. It also shows a significant positive correlation with KF, LUX, SG and SG_A.

A variance inflation factor test (VIF) was conducted in addition to the Pearson correlation test to control for multicollinearity. The presence of multicollinearity arises from the moderate or high correlation between two or more independent variables (Thompson et al., 2017). VIF scores greater than 10 are considered to increase the likelihood of multicollinearity (Akinwande et al., 2015). The VIF test results indicated that none of the variables exceeded the critical level. Accordingly, the data set seems not to be affected by multicollinearity. VIF test results are provided in Appendix B.

Table 4-2 Pearson correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ROA	1.00															
(2) ROE	0.64***	1.000														
(3) Tobin's Q	0.59***	0.28***	1.00													
(4) FTI	0.09	0.04	0.16***	1.00												
(5) PC	0.10*	0.01	0.21***	0.89***	1.000											
(6) GO	0.15***	0.09	0.16***	0.77***	0.76***	1.000										
(7) TR	0.02	0.05	0.13**	0.86***	0.59***	0.48***	1.00									
(8) KSF	0.05	0.04	0.04	0.89***	0.77***	0.72***	0.66***	1.00								
(9) SI	0.14**	-0.01	0.17***	0.86***	0.81***	0.67***	0.62***	0.75***	1.00							
(10) LUX	0.12**	0.10*	0.08	-0.11**	0.05	0.07	0.24***	0.15***	0.03	1.00						
(11) SIZE	0.10*	0.12**	0.14**	0.30***	0.38***	0.24***	0.13**	0.30***	0.29***	0.06	1.00					
(12) LEV	0.46***	-0.08	0.37***	-0.13**	0.16***	0.17***	-0.05	-0.09	0.16***	0.22***	-0.07	1.00				
(13) SG	0.25***	0.14**	0.22***	0.06	0.06	0.15***	0.04	0.02	-0.01	-0.04	0.03	-0.09	1.00			
(14) LEV_A	0.25***	-0.03	-0.09	-0.10*	-0.12**	-0.09	-0.06	-0.09	-0.09	-0.03	-0.09	0.15**	-0.08	1.00		
(15) SG_A	0.26***	0.15***	0.22***	0.08	0.09	0.16***	0.06	0.04	0.02	-0.04	0.04	-0.09	0.99***	0.08	1.00	
(16) INVTURN	0.12**	0.10*	0.00	0.05	0.05	0.03	-0.01	0.11*	0.09	0.20***	0.19***	0.07	0.11*	0.07	0.12**	1.00

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.2 Regression results

This section contains the regression results which tested the impact of CSR on financial performance. Furthermore, results of the regression analysis examining the impact of brand luxury on CSR and financial performance are presented. In addition, the results of various robustness tests are discussed.

4.2.1 Effect of CSR on financial performance

As a test of H1a and H1b, three different dependent variables were included to account for the differences in financial performance measures. Table 4-3 shows the results of different models using ROA as a dependent variable indicating the financial performance as well as FTI as an independent variable indicating the level of CSR of a given fashion brand. In this study, both fixed effects (FE) and random effects (RE) regression were used, depending on the results of the Hausman test conducted for each model (see Appendix C). In order to improve the reliability of estimates, the models singularly and incrementally add control variables. In Model 1, all control variables are omitted from the original regression model. Model 2 shows results with only the SIZE variable as a control variable. The results of Model 3 only include LEV as an additional control variable. Model 4 shows the result when SIZE and LEV are both added as additional controls. Model 5 adds the single control variable SG. Model 6 represents of when all three before mentioned control variables SIZE, LEV and SG are added. Model 7 shows the outcomes of a regression function that only adds INVTURN as a control variable. Model 8 represents the results of the predefined regression function which includes all control variables SIZE, LEV, SG and INVTURN. Overall, the R-squared values range from 41,1% to 55,4%, which suggests that all models fit the observed data well. The estimate results in all models consistently show that FTI has statistically significant ($p<0.1$) and positive impact on ROA. As for the control variables, LEV estimates consistently have a negative and statistically significant impact ($p<0.01$) on ROA. INVTURN estimates consistently demonstrate a positive and statistically significant ($p<0.05$) impact on ROA. Overall, SIZE and SG estimates show a positive impact, though they are not statistically significant.

MODEL	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA
FTI	14.04***	13.20***	14.64**	14.91**	17.35**	13.61**	11.85***	12.08*
	(3.900)	(3.990)	(6.355)	(6.396)	(6.852)	(6.532)	(3.855)	(6.524)
SIZE		423.3		913.0		1,193		1,596
		(485.6)		(2,006)		(2,035)		(2,029)
LEV			31.90***	31.97***		28.24***		27.41***
			(4.109)	(4.120)		(4.226)		(4.212)
SG					0.832	0.299		-0.221
					(0.796)	(0.748)		(0.784)
INVTURN							0.458***	0.676**
							(0.168)	(0.330)
Constant	6.311***	-15.79	16.09***	-5.199	7.724***	-13.96	8.078***	-27.36
	(1.608)	(11.01)	(3.945)	(46.95)	(2.462)	(47.67)	(1.838)	(47.75)
Observations	328	328	297	297	301	284	315	284
R-squared	0.420	0.417	0.554	0.554	0.411	0.516	0.426	0.526
Number of id	90	90	79	79	82	76	86	76

Table 4-3 Impact of CSR on financial performance: ROA as dependent variable

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Following the structure of the previous models, Table 4-4 displays the results of models adding ROE as a dependent variable measuring financial performance, sequentially adding control variables. Generally, the R-squared of all models ranges from 10,1% to 20,6% which indicates the models fit the observed data less well in comparison to when ROA was used as a dependent variable. All eight models show a positive and statistically significant ($p<0.05$) impact of FTI on ROE as a measure of financial performance. Remarkably, the estimates for FTI are much higher impact in comparison to the models using ROA as a dependant variable. Based on the original regression model, model 8 gives FTI an estimate of 141.9 (p-value<0.05) when ROE was used as a dependent variable, whereas the estimate was 12.08 (p-value<0.1) when ROA was used as the dependent variable. As for the control variables, SIZE estimates consistently show a positive impact on ROE, with only model 2 and 4 results having statistical significance ($p<0.1$). SG and INVTURN estimates generally show a positive impact on ROE but have no statistical significance and vary widely in magnitude. Additionally, while LEV estimates generally show a negative impact on ROE, they vary widely in magnitude and show no statistical significance.

Table 4-4 Impact of CSR on financial performance: ROE as dependent variable

MODEL	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE	(6) ROE	(7) ROE	(8) ROE
FTI	146.0**	219.8***	151.7**	166.9***	141.2**	158.3**	119.9**	141.9**
	(67.45)	(64.92)	(58.97)	(59.38)	(57.74)	(61.51)	(56.37)	(62.36)
SIZE		91,666***		34,515*		23,498		21,578
		(16,752)		(20,425)		(21,073)		(21,053)
LEV			-51.90	-71.74		-18.61		1.992
			(44.57)	(45.90)		(48.87)		(50.74)
SG					3.256	1.851		-1.481
					(6.604)	(6.950)		(7.297)
INVTURN							2.897	5.101
							(2.259)	(3.498)
Constant	-64.14***	-2,208***	-32.38	-830.0*	-63.14***	-606.5	-70.87***	-599.7
	(24.14)	(392.4)	(38.52)	(473.5)	(21.26)	(488.2)	(21.74)	(486.8)
Observations	318	318	285	285	289	272	303	272
R-squared	0.101	0.206	0.163	0.174	0.139	0.145	0.144	0.155
Number of id	88	88	76	76	79	73	83	73

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Rerunning the models with Tobin's Q as a dependent variable to achieve a more robust estimate of the FTI parameter yielded similar results, which are reported in Table 4-5. Generally, the R-squared of all models ranges from 6,7% to 12,7% which indicates the models fit the observed data less well in comparison to when ROE was used as a dependent variable. For all regression models tested, FTI estimates show a positive impact on financial performance as measured by Tobin's Q. However, the FTI estimates do not exhibit equal statistical significance. In models excluding the SIZE variable, all FTI estimates are statistically significant at the 10% level. Furthermore, the magnitude of the positive impact of FTI on the financial performance measure Tobin's Q is comparatively low. As for the control variables, SG estimates consistently show a positive and statistically significant ($p<0.05$) impact on Tobin's Q. SIZE estimates show statistical significance at the level of 5% but vary widely in magnitude and direction. LEV estimates generally show a negative impact on Tobin's Q but are not statistically significant. Additionally, INVTURN estimates generally vary widely in magnitude and show no statistical significance.

Table 4-5 Impact of CSR on financial performance: Tobin's Q as dependent variable

MODEL	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q
FTI	1.587**	1.245	1.234*	1.001	1.224*	0.528	1.411**	0.570
	(0.671)	(0.829)	(0.664)	(0.830)	(0.687)	(0.859)	(0.694)	(0.866)
SIZE		-637.5**		-612.3**		576.7**		587.0**
		(261.3)		(259.4)		(266.4)		(267.9)
LEV			1.626***	-1.123**		-0.846		-0.872
			(0.477)	(0.534)		(0.554)		(0.558)
SG					0.257***	0.239**		0.254**
					(0.0966)	(0.0963)		(0.102)
INVTURN							0.0167	-0.0201
							(0.0319)	(0.0434)
Constant	1.288***	16.30***	2.546***	16.58***	1.202***	15.56**	1.253***	15.92**
	(0.306)	(6.135)	(0.474)	(6.086)	(0.317)	(6.257)	(0.371)	(6.319)
Observations	280	280	280	280	267	267	268	267
R-squared	0.081	0.107	0.101	0.126	0.115	0.127	0.067	0.128
Number of id	72	72	72	72	69	69	69	69

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.2 Moderating effect of brand luxury

As a test of H2a and H2b, a regression analysis was carried out utilizing three distinct models with different dependent variables, to account for the difference in financial performance measures. Table 4-6 shows the results of different models using either ROA, ROE or Tobin's Q as a dependent variable and FTI as an independent variable indicating the level of CSR of a given fashion brand. In all models, the dummy variable LUX and the interaction term LUX*FTI are included to test the moderating effect of brand luxury on the relationship between FTI and the dependent variable. Furthermore, all models reflect the results of the predefined regression function which includes all control variables SIZE, LEV, SG, and INVTURN.

Table 4-6 Moderating effect of brand luxury

MODEL	(1) ROA	(2) ROE	(3) Tobin's Q
FTI	8.184**	62.42**	0.815
	(4.161)	(27.64)	(0.728)
SIZE	420.2	706.0	35.83
	(485.7)	(2,898)	(106.0)
LEV	16.66***	-1.167	1.395***
	(2.478)	(23.28)	(0.496)
SG	0.733	5.576	0.249**
	(0.752)	(6.647)	(0.101)
INVTURN	0.395**	1.784	-0.00505
	(0.178)	(1.142)	(0.0328)
LUX	1.532	42.07**	-0.00927
	(2.688)	(18.05)	(0.510)
LUX*FTI	1.964	-81.54	1.101
	(7.838)	(56.50)	(1.205)
Constant	-5.776	-67.86	1.436
	(11.47)	(67.28)	(2.490)
Observations	284	272	267
R-squared	0.527	0.155	0.142
Number of id	76	73	69

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

By comparing the R-squared values, it appears that model 1 with ROA as a dependent variable fits the observed data best at a level of 52,7%, while the other models range between 15,5% and 14,2%. Across all models, the estimates show that FTI has a positive effect on all financial measures. Nevertheless, the estimates are far from consistent in magnitude (ranging from 0.815 to 62.42) and are only statistically significant for models 1 and 2 ($p<0.05$). Since LUX estimates indicate varying results in magnitude and direction as well as varying statistical significance, they cannot be interpreted consistently. Model 1 is the only one with a significant (p*0.05) positive impact of LUX on ROE. Results for the interaction term LUX*FTI demonstrate that brand luxury neither strengthens nor weakens the relationship between FTI and financial performance measures. This is mainly due to varying magnitudes and directions of the estimates and their lack of significance. The estimates of SIZE, SG and INVTURN generally show a positive impact on all financial measures but do not exhibit statistical significance, apart from SG in model 3 and INVTURN in

model 1. In contrast to earlier regression analyses, LEV estimates are generally positive and statistically significant ($p<0.01$) for model 1 and 3.

4.3 Robustness tests

Several additional robustness tests are performed in this section in order to verify whether the results are accurate under a variety of circumstances. Both fixed effects (FE) and random effects (RE) regression were used, depending on the results of the Hausman test conducted for each model (see Appendix C). In order to improve the reliability of estimates, the models 1-5 use each a different section score of the FTI as a dependent variable, namely PC, GO, TR, KSF, FI. Models 6-10 additionally test the influence of the dummy variable LUX and the interaction term between LUX and FTI section variables (PC, GO, TR, KSF, SI) on the relationship between the section scores and financial performance measure. Furthermore, all models include control variables SIZE, LEV, SG and INVTURN. In table 4-7, the outcomes of different models using ROA as a dependent variable are presented, while in table 4-8, ROE is used as a dependent variable, and in table 4-9, Tobin's Q is used as a dependent variable.

4.3.1 Using FTI section scores as CSR measures

According to the previously discussed structure, Table 4-7 illustrates the results of models using ROA as a dependent variable measuring financial performance, alternately using FTI section scores as CSR measures and their interaction terms with brand luxury. Overall, the R-squared values range from 51,8% to 53,1%, which suggests that all models fit the observed data well. ROA as a measure of financial performance is mildly impacted by the estimates of the FTI section scores across all models. In spite of this, none of the estimates show statistical significance except for the SI estimates in models 5 and 10 and TR in model 8. The magnitude and direction of LUX estimates vary greatly, and no statistical significance can be found. Similarly, the direction and magnitude of the interaction term estimates are highly variable and lack statistical significance. As for the control variables, LEV estimates consistently have a negative and statistically significant impact ($p<0.01$) on ROA. INVTURN estimates consistently demonstrate a positive and statistically significant ($p<0.05$) impact on ROA. Overall, SIZE estimates show a positive impact, though they are not statistically significant and vary widely in magnitude. In terms of SG estimates, models 1-5 have a negative impact, and models 6-10 have a positive impact, although these results are not statistically significant.

Table 4-7 Robustness test using FTI section scores: ROA as a dependent variable

MODEL	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA	(8) ROA	(9) ROA	(10) ROA
PC	6.138					4.628				
	(3.912)					(3.116)				
GO		2.016					0.931			
		(2.289)					(2.061)			
TR			1.975					4.893*		
			(3.393)					(2.759)		
KSF				6.548					2.839	
				(5.670)					(4.628)	
SI					8.591**					8.188**
					(4.158)					(3.562)
SIZE	1,013	1,417	1,462	1,200	1,346	359.0	511.6	552.2	512.7	394.9
	(2,033)	(2,042)	(2,064)	(2,033)	(2,018)	(494.6)	(483.8)	(482.1)	(490.4)	(481.4)
LEV	-27.72***	-28.25***	-27.82***	-27.81***	-27.90***	-16.92***	-17.68***	-17.26***	-17.55***	-16.71***
	(4.214)	(4.235)	(4.245)	(4.225)	(4.191)	(2.472)	(2.443)	(2.457)	(2.455)	(2.441)
SG	-0.286	-0.156	-0.0700	-0.0748	-0.181	0.695	0.852	0.738	0.924	0.801
	(0.794)	(0.792)	(0.785)	(0.784)	(0.780)	(0.762)	(0.757)	(0.749)	(0.750)	(0.748)
INVTURN	0.712**	0.748**	0.719**	0.745**	0.742**	0.392**	0.409**	0.404**	0.384**	0.375**
	(0.330)	(0.330)	(0.334)	(0.330)	(0.328)	(0.178)	(0.179)	(0.179)	(0.179)	(0.178)
LUX						0.616	-0.768	2.978	-0.211	1.682
						(3.369)	(2.406)	(1.829)	(2.433)	(1.956)
LUX*PC						1.150				
						(4.504)				
LUX*GO							4.625			
							(3.802)			
LUX*TR								-11.49		
								(7.075)		
LUX*KSF									9.825	
									(8.606)	
LUX*SI										-0.965

										(5.225)
Constant	-13.81	-19.71	-20.52	-15.81	-19.61	-4.314	-4.718	-6.640	-5.174	-4.131
	(47.45)	(47.87)	(48.45)	(47.57)	(47.27)	(11.46)	(11.52)	(11.57)	(11.54)	(11.38)
Observations	284	284	284	284	284	284	284	284	284	284
R-squared	0.524	0.520	0.519	0.521	0.528	0.525	0.523	0.523	0.518	0.531
Number of id	76	76	76	76	76	76	76	76	76	76

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Using the same structure, Table 4-8 illustrates the results of models including ROE as a dependent variable measuring financial performance, together with FTI section scores as independent variables, as well as their interactions with brand luxury. Generally, the R-squared of all models ranges from 11,6% to 15,4% which indicates the models fit the observed data less well in comparison to when ROA was used as a dependent variable. The results of all models show a positive impact with differing magnitude of FTI section scores on ROE as a measure of financial performance. However, not all estimates show statistical significance besides the TR and KSF estimates in model 8 and 9 ($p<0.05$). Generally, the LUX estimates show a positive and statistically significant impact ($p<0.1$) on ROE. As for moderating effects, the interaction term estimates generally show a negative impact on ROE but lack statistical significance. As for the control variables, SIZE, SG, INVTURN estimates generally show a positive impact on ROE but have no statistical significance and vary widely in magnitude. Similarly, LEV estimates show no statistical significance but an overall negative impact on ROE.

Table 4-8 Robustness test using FTI section scores: ROE as a dependent variable

MODEL	(1) ROE	(2) ROE	(3) ROE	(4) ROE	(5) ROE	(6) ROE	(7) ROE	(8) ROE	(9) ROE	(10) ROE
PC	11.50					27.20				
	(17.44)					(20.61)				
GO		11.41					20.22			
		(12.88)					(15.25)			
TR			27.88					49.44**		
			(18.56)					(20.25)		
KSF				30.60					65.95**	
				(28.32)					(32.64)	
SI					27.95					39.47
					(23.56)					(25.66)
SIZE	1,311	1,552	1,762	1,253	1,125	875.6	1,495	1,477	509.3	959.5
	(2,990)	(2,912)	(2,902)	(2,950)	(2,957)	(2,946)	(2,870)	(2,859)	(2,926)	(2,899)
LEV	-14.55	-14.92	-15.77	-15.01	-11.71	-4.945	-4.905	-4.024	-1.900	-1.369
	(23.01)	(22.85)	(22.75)	(22.84)	(23.18)	(23.22)	(23.16)	(23.13)	(23.27)	(23.43)
SG	6.718	6.472	6.375	7.143	6.922	6.101	6.017	5.731	6.857	6.940
	(6.721)	(6.720)	(6.660)	(6.651)	(6.655)	(6.738)	(6.746)	(6.622)	(6.620)	(6.665)
INVTURN	1.318	1.327	1.353	1.252	1.266	1.627	1.620	1.961*	1.783	1.573
	(1.135)	(1.136)	(1.137)	(1.140)	(1.138)	(1.139)	(1.144)	(1.147)	(1.148)	(1.140)
LUX						44.93*	29.36*	29.25***	37.90**	24.42*
						(23.12)	(15.80)	(11.21)	(16.04)	(12.82)
LUX*PC						-43.98				
						(32.19)				
LUX*GO							-28.97			
							(27.31)			
LUX*TR								-65.29		
								(56.60)		
LUX*KSF									-89.13	
									(61.76)	
LUX*SI										-37.55

										(41.81)
Constant	-52.23	-54.40	-61.14	-50.43	-49.04	-64.42	-69.00	-77.02	-58.98	-60.67
	(68.02)	(68.02)	(68.27)	(68.29)	(68.24)	(67.09)	(67.47)	(67.69)	(67.54)	(67.14)
Observations	272	272	272	272	272	272	272	272	272	272
Number of id	73	73	73	73	73	73	73	73	73	73
R-squared	0.120	0.116	0.148	0.125	0.154	0.121	0.135	0.148	0.127	0.137

Based on the described structure, Table 4-9 shows the results of models adding Tobin's Q as a dependent variable measuring financial performance, alternately using FTI section scores as independent variables and their respective interaction terms with brand luxury. Generally, the R-squared of all models ranges from 12,2% to 15,0% which indicates the models fit the observed data similarly to when ROE was used as a dependent variable. The estimates of all models show a generally positive impact of FTI section scores on Tobin's Q with differing magnitude. However, not all estimates show statistical significance besides the PC and GO estimates in model 1 and 2. The LUX estimates are generally of varying magnitudes and directions, and are not statistically significant. As for moderating effects, interaction term estimates generally show negative impact on the relationship between FTI and Tobin's Q but they are not statistically significant. As for the control variables, SG estimates consistently show a positive impact on Tobin's Q, with all model results having statistical significance ($p<0.05$). Remarkably, SIZE estimates show a negative and statistically significant impact ($p<0.05$) on Tobin's Q in model 1-5 but remain negative and insignificant for models 6-10. LEV estimates in general show a negative impact on Tobin's Q and are statistically significant except in models 4 and 5. INVTURN estimates show a negative impact on Tobin's Q across all models, but are not statistically significant.

Table 4-9 Robustness test using FTI section scores: Tobin's Q as a dependent variable

MODEL	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q	(5) Tobin's Q	(6) Tobin's Q	(7) Tobin's Q	(8) Tobin's Q	(9) Tobin's Q	(10) Tobin's Q
PC	0.924*					0.753				
	(0.507)					(0.554)				
GO		0.489*					0.333			
		(0.295)					(0.317)			
TR			-0.246					0.275		
			(0.443)					(0.423)		
KSF				0.338					0.000549	
				(0.745)					(0.741)	
SI					0.471					0.530
					(0.550)					(0.564)
SIZE	-644.4**	-567.8**	-632.6**	-607.1**	-598.5**	11.30	35.32	48.65	46.53	31.55
	(265.2)	(265.7)	(270.7)	(266.5)	(266.3)	(107.1)	(106.0)	(105.8)	(106.7)	(106.1)
LEV	-0.845	-0.954*	-0.935*	-0.899	-0.895	-1.409***	-1.475***	-1.521***	-1.497***	-1.459***
	(0.553)	(0.553)	(0.558)	(0.556)	(0.555)	(0.490)	(0.487)	(0.496)	(0.494)	(0.492)
SG	0.228**	0.240**	0.262**	0.261**	0.255**	0.229**	0.245**	0.250**	0.262***	0.253**
	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.100)	(0.101)	(0.101)	(0.100)
INVTURN	-0.0213	-0.0168	-0.0138	-0.0171	-0.0170	-0.00440	-0.000978	-0.00643	-0.00537	-0.00250
	(0.0429)	(0.0429)	(0.0436)	(0.0432)	(0.0431)	(0.0327)	(0.0327)	(0.0329)	(0.0329)	(0.0329)
LUX						-0.0714	-0.174	0.317	0.0149	0.0868
						(0.608)	(0.473)	(0.401)	(0.478)	(0.416)
LUX*PC						0.422				
						(0.711)				
LUX*GO							0.812			
							(0.584)			
LUX*TR								-0.789		
								(0.992)		
LUX*KSF									1.064	

									(1.331)	
LUX*SI										0.658
										(0.741)
Constant	16.81***	15.50**	17.26***	16.50***	16.26***	1.804	1.645	1.497	1.573	1.734
	(6.195)	(6.237)	(6.362)	(6.247)	(6.247)	(2.476)	(2.493)	(2.502)	(2.494)	(2.485)
Observations	267	267	267	267	267	267	267	267	267	267
R-squared	0.141	0.139	0.128	0.127	0.130	0.150	0.122	0.136	0.142	0.144
Number of id	69	69	69	69	69	69	69	69	69	69

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.3.2 Using different measures of control variables

In the following models, several robustness tests are performed using different measures of the proposed control variables. Both FE and RE regression were used, depending on the results of the Hausman test conducted for each model (see Appendix C). Models 1 and 2 use each a different measure of sales growth SG and SG_A both including LEV as a measure of leverage. Models 3 and 4 also alternate between the two sales growth measures SG and SG_A whereas another measure of leverage LEV_A is used as well. In all models the remaining measures of the control variables SIZE and INVTURN remain the same.

Table 4-10: Robustness test using different measures of control variables: ROA as a dependent variable

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA
FTI	7.655**	7.428*	12.02***	11.82***
	(3.851)	(3.852)	(4.074)	(4.071)
SIZE	433.7	454.6	760.7	768.7
	(486.7)	(487.3)	(515.5)	(515.4)
LEV	-17.37***	-17.31***		
	(2.410)	(2.410)		
LEV_A			-0.127***	-0.127***
			(0.0357)	(0.0356)
SG	0.733		1.020	
	(0.748)		(0.804)	
SG_A		1.056		1.344*
		(0.753)		(0.807)
INVTURN	0.358**	0.341*	0.201	0.187
	(0.176)	(0.176)	(0.189)	(0.189)
Constant	-4.619	-4.187	-24.95**	-23.91**
	(11.46)	(11.46)	(11.79)	(11.79)
Observations	284	283	281	281
R-squared	0.527	0.526	0.447	0.445
Number of id	76	76	75	75

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Following the aforementioned structure, Table 4-10 shows the results of models using ROA as a dependent variable measuring performance and FTI scores as independent variables. The R-squared of the models ranges from 44,7% to 52,7% which indicates a good model fit. All model results show that the FTI estimates have a positive and statistical significant impact ($p<0.1$) on ROA. Furthermore, both leverage control variables LEV and LEV_A estimates demonstrate a negative and statistical significant ($p<0.01$) impact on ROA. The results of the estimates for SIZE,

INVTURN, SG and SG_A show a positive impact on ROA, although none are statistically significant, aside from SG_A in model 4 and INVTURN in models 1 and 2.

Table 4-11 Robustness test using different measures of control variables: ROE as a dependent variable

VARIABLES	(1) ROE	(2) ROE	(3) ROE	(4) ROE
FTI	36.59**	36.06**	33.87**	33.59**
	(25.51)	(25.46)	(25.97)	(25.98)
SIZE	1,126	1,147	834.4	854.5
	(2,953)	(2,946)	(2,957)	(2,959)
LEV	-13.15	-13.04		
	(22.96)	(22.95)		
LEV_A			-1.136*	-1.140*
			(1.006)	(1.005)
SG	6.257		6.212	
	(6.665)		(6.700)	
SG_A		6.996		6.920
		(6.727)		(6.738)
INVTURN	1.314	1.289	1.293	1.275
	(1.141)	(1.138)	(1.144)	(1.145)
Constant	-53.68	-47.49	-50.86	-44.80
	(68.38)	(68.11)	(68.22)	(68.12)
Observations	272	271	269	269
R-squared	0.155	0.155	0.172	0.172
Number of id	73	73	72	72

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Accordingly, Table 4-11 shows the results of models using ROE as a dependent variable measuring performance and FTI scores as independent variables. The R-squared of the models ranges from 15,5% to 17,2% which indicates that the models do not fit the observed data as well as when using ROA as the dependent variable. All model results show that the FTI estimates have a positive and statistical significant impact ($p<0.05$) on ROA. SIZE, INVTURN, SG and SG_A estimates show a positive impact on ROE but are not statistically significant. LEV estimates show a negative impact on ROE but lack statistical significance. The LEV_A estimates in model 3 and 4 show a negative and statistically significant ($p<0.1$) impact on ROE.

Table 4-12: Robustness test using different measures of control variables: Tobin's Q as a dependent variable

VARIABLES	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q	(4) Tobin's Q
FTI	0.955	0.920	1.211*	1.172*
	(0.685)	(0.683)	(0.695)	(0.693)
SIZE	39.56	42.15	21.11	24.07
	(105.0)	(104.9)	(111.5)	(111.3)
LEV	-1.473***	-1.460***		
	(0.491)	(0.489)		
LEV_A			-0.00133	-0.00138
			(0.00444)	(0.00441)
SG	0.244**		0.262***	
	(0.101)		(0.100)	
SG_A		0.283***		0.300***
		(0.101)		(0.100)
INVTURN	-0.0105	-0.0138	-0.0102	-0.0136
	(0.0323)	(0.0322)	(0.0338)	(0.0337)
Constant	1.481	1.695	0.784	1.020
	(2.464)	(2.462)	(2.593)	(2.592)
Observations	267	267	267	267
R-squared	0.136	0.128	0.101	0.092
Number of id	69	69	69	69

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4-12 shows the results of models using Tobin's Q as a dependent variable measuring performance and FTI scores as independent variables. The R-squared of the models ranges from 9,2% to 13,6% indicating that these models fit the observed data the worst overall in comparison to using other dependent variables. All model results show that the FTI score estimates have a positive impact on Tobin's Q whereas only model 3 and 4 estimates show statistical significance ($p<0.1$). SIZE estimates demonstrate a positive impact on Tobin's Q but lack statistical significance. All leverage estimates show a negative but not statistically significant impact on Tobin's Q. Both SG and SG_A estimates demonstrate a positive and statistically significant impact ($p<0.01$) on Tobin's Q. Remarkably, INVTURN estimates show a negative yet statistically insignificant impact on Tobin's Q.

5 Discussion and conclusion

In this chapter the main findings of the research are discussed and summarized. Furthermore, the limitations of the research and recommendations for further research are provided.

5.1 Discussion

The results of the empirical study support H1a while opposing H1b, illustrating a positive impact of CSR on the financial performance of fashion brands. In general, the impact of CSR on financial performance was overall positive and statistically significant when using the FTI score as a measure of CSR, generally supporting the notion of H1a. The results demonstrated the validity of stakeholder theory, legitimacy theory, and institutional theory as fashion brands have been under increasing pressure to do CSR. Responding to such requests appears to satisfy stakeholder demands and improve legitimacy, thereby impacting purchasing decisions and enhancing financial performance. These findings are consistent with most empirical studies that find CSR to be positively related to financial performance. According to different meta-analyses, a positive association between CSR and financial performance is most predominant throughout many industries (Orlitzky et al., 2003; Margolis et al., 2009). In this study, FTI has a positive impact on various financial performance measures, but to a varying degree. As for ROA and ROE, FTI has a highly positive impact that is statistically significant, while Tobin's Q has a much smaller positive impact that is only somewhat significant. When the estimates were tested against different control variables for robustness, the results again remained positive and statistically significant. The estimates, when tested for robustness using FTI scores as a measure of CSR, were generally positive, but not statistically significant. Perhaps CSR in fashion brands is difficult to quantify by specific subcategories and rather needs to be considered as a multidimensional concept to accurately predict the impact on financial performance. However, as a whole, the impact of CSR has been positive across all financial performance measures.

In contrast, the results from the empirical study are insufficient to support either H2a or H2b, which suggests that brand luxury may not have a significant moderating effect on the relationship between CSR and financial performance. Various directions and magnitudes of interaction effects can be found in the estimate results. However, the estimates are not statistically significant, and therefore neither H2a nor H2b can be substantiated. By comparing the results of the robustness tests, it appears that the direction of the moderating effect is still unclear, which is why both H2a and H2b cannot be supported. The results of this study reveal that brand luxury does not strengthen nor weaken the relationship between CSR measured by FTI and financial performance measured by ROA, ROE or Tobin’s Q in the fashion industry. The insignificant moderating effect of luxury can be attributed to both methodological and theoretical reasons. Theoretically, luxury brands pride themselves on durability, exclusivity through limited quantities, and exquisite craftsmanship, especially when coupled with high-quality materials (Dubois et al., 2001). However, luxury are also often associated with wasteful consumption, mindless pleasures and ostentation which is

contradictory with CSR virtues (Cervellon & Shammas, 2013). As a result of their expansive visibility and perhaps even more than their impact, luxury fashion brands are subject to continuous scrutiny. The new generation of consumers has high expectations for CSR practices, messaging, and products. Consequently, luxury brands are subject to the same pressure as other corporations to take account of environmental, social, and ethical concerns, such as climate change, resource scarcity, water stress, child and forced labor, bribery, and corruption. Due to the fact that luxury brands are only now catching up with CSR and understanding just how beneficial it will be to them as well as their consumers, CSR activities may not yet have reached their full potential (Janssen et al., 2017).

The methodological reasons for the insignificant results can be found in the next section where the limitations and recommendations of the study are discussed.

5.2 Limitations and recommendations

The research presented in this paper has some limitations. First of all, only a small sample size and a low number of observations were available for this study. The sample consisted of 93 fashion brands with a maximum of 372 observations per variable, whereas many other studies reached many more observations. Furthermore, the period of analysis is limited to four years. To achieve more reliable results, future studies should collect data for a larger group of firms over a longer period of time. As a result of the small sample size and Deloitte's Global Powers of Luxury Goods 2020 report, fashion brands with varying degrees of luxury were grouped together in one luxury category. The dichotomous luxury measure may have impacted the results. Taking this into account, one reason for the insignificant interaction terms might be the absence of variance in the interacted variables. As a result of the arguments made in the theory section, it could be concluded that luxury brands generally have a low value on the FTI scales. As such, it may make more sense to use a continuously scaled brand luxury variable rather than using a dummy variable to measure luxury. Thus, further research would benefit from a larger sample size as a greater number of luxury brands would be present, allowing researchers to classify them into more granular categories. Moreover, in accordance with Deloitte's Global Powers of Luxury Goods 2020 report, luxury brands have been distinguished from non-luxury brands solely based on the product attributes, overlooking the fact that luxury is a multidimensional construct. Thus, for future research it may be interesting to classify brands as luxury based on criteria beyond product attributes, such as customer perception. An additional limitation of this study is the measurement of CSR using the FTI. Each year, the FTI includes minor changes in methodology that may affect

the comparability of the scores from one year to another. In addition, the calculation of the scores is based on a desk-based study, which suggests the possibility of human error. Using a single index to measure CSR always limits the validity of the findings. The validity of the findings could be enhanced if the study included a wider range of CSR indices. Another interesting direction for future research might be to look beyond the rankings. Taking a qualitative look at CSR strategies being implemented by fashion brands may offer another perspective on the impact of CSR on financial performance. Further, the sample was restricted to global fashion brands defined by the FTI, without further segmenting the market into submarkets. There may be different, regional submarkets within the fashion industry, such as industrialized economies or developing economies, with a variety of customer needs, preferences, and attitudes towards luxury goods and CSR. Thus, future research could take into account the segmentation of the global fashion market by e.g. including a variable indicating the share of revenue generated in developing countries. The revenue share in developing countries would be the moderator of the link between FTI and financial performance. Possibly, CSR efforts won't have as much significance for developing countries. Accordingly, it may be hypothesized that the higher the share of revenues generated in developing countries, the weaker the relationship between CSR and firm performance.

5.3 Summary

With growing awareness of fashion's impact on society and the environment, different stakeholders are steadily advocating for greater CSR requirements, which implies that societal and environmental impacts should be considered when making business decisions. There is, however, no certainty that these considerations cohere with their main objective, which is to maximize profits for their shareholders. Thus, a number of researchers have attempted to investigate the impact of CSR on financial performance, but their findings have been inconsistent, which some attribute to industry-specific differences. The fashion industry lacks studies concerning the impact of CSR on financial performance, which led to the first research question: To what extent does CSR have an impact on the financial performance of fashion brands? Additionally, some researchers have argued that the inconsistency in results may be caused by missing factors that can have a mediating or moderating effect on the relationship. When it comes to CSR initiatives in the fashion industry, there can be disparities between luxury and non-luxury brands. Therefore, the second research question is: To what extent does fashion brand luxury moderate the impact of CSR on financial performance of global fashion brands? A literature review and analysis of previous studies led to the development of four hypotheses. Based on stakeholder theory and

legitimacy theory, CSR is expected to improve financial performance, as it can satisfy the increasing demand for CSR and improve consumer loyalty and trust, which are factors that influence purchasing decisions. In contrast, the agency theory suggests that CSR negatively affects financial performance because these activities increase operating costs which lead to a loss of profits that may adversely affect shareholders' interests. Furthermore, it was hypothesized that brand luxury weakens the link between CSR and financial performance as CSR and luxury are viewed as mutually exclusive concepts by consumers who view CSR efforts as extrinsically motivated, thereby increasing mistrust among consumers and undermining customer loyalty, which is critical to financial success. Moreover, it was hypothesized that brand luxury strengthens the relationship between CSR and financial performance since luxury brands can already leverage product attributes, i.e. high quality and scarcity that make them sustainable to overcome traditional issues caused by non-luxury brands to increase their competitive edge and appeal to a growing number of CSR-conscious luxury consumers. These hypotheses are tested with fixed effects or random effects regression analysis, depending on the Hausman test result. Specifically, the first regression model tests H1a and H1b using several financial performance measures, including ROA, ROE, and Tobin's Q as dependent variables, and CSR is measured by FTI score as an independent variable. A range of control variables are also included in the model, including firm size, leverage, sales growth, and inventory turnover. Continuing to examine H2a and H2b, the second regression model adds to the original model a dummy variable for brand luxury, as well as an interaction term between brand luxury and FTI score. The sample of this study consists a total of 93 global fashion brands with 372 firm-year observations over the period 2017 to 2020. The results of the first model and robustness tests using different measures of control variables show that the impact of CSR on financial performance in fashion brands is significant and positive for financial performance measures of ROA and ROE. Additionally, robustness tests using the different FTI section scores measured CSR show a statistically insignificant yet generally positive impact on financial performance, which may be attributed to the fact that these scores do not reflect the entirety of CSR activities. These results are in line with the expectations from stakeholder theory, legitimacy theory and institutional theory and thus fully support H1a. In terms of the second model and additional robustness tests, the results are inconsistent in direction and magnitude to fully support either H2a or H2b. The results of this study reveal that brand luxury does not strengthen nor weaken the relationship between CSR measured by FTI and financial performance measured by ROA, ROE or Tobin’s Q in the fashion industry.

5.4 Managerial implications

From a managerial point of view within the fashion industry, this study provides novel insights regarding CSR's influence on financial performance. As consumer buying patterns shift towards socially and environmentally conscious purchases, the beneficial effects of CSR engagement cannot be overlooked. The result of the study provides further leverage for introducing CSR activities as it can satisfy the increasing demand for CSR and improve consumer loyalty and trust, which are factors that influence purchasing decisions and ultimately improve financial performance. Regardless of whether a fashion brand is considered luxury or not, the empirical analysis indicated that CSR positively impacts financial performance.

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Appendices

Appendix A – Fashion brands and luxury classification

Brand[1]	Luxury[2]
Abercrombie & Fitch	0
Adidas	0
Amazon	0
American Eagle	0
Anthropologie	0
Armani	1
Asda	0
ASICS	0
ASOS	0
Banana Republic	0
Bershka	0
Bottega Veneta	1
Burberry	1
Burlington	1
C&A	0
Calvin Klein	1
Calzedonia	0
Champion	0
Chanel	1
Chico's	0
Claire's	0
COACH	1
Columbia Sportswear	0
Converse	0
Costco	0
Dillards	0
Dior	1
Ermenegildo Zegna	1
Esprit	0
Express	0
Gap	0
Gildan	0
Gucci	1
GUESS	0
H&M	0
Hanes	0
Hermès	1
Hudson's Bay	0
Hugo Boss	1
J.Crew	0
Jack & Jones	0
JCPenney	0
Jordan	0
Kohl's	0
Lacoste	0
Lands' End	0

[1] https://issuu.com/fashionrevolution/docs/fr_fashiontransparencyindex2020

[2] https://www2.deloitte.com/content/dam/Deloitte/at/Documents/consumer-business/at-global-powers-luxury-goods-2020.pdf

Levi Strauss & Co	0
LL Bean	0
LOFT	0
Louis Vuitton	1
Lululemon	0
Macy's	0
Mango	0
Marks & Spencer	0
Massimo Dutti	1
Matalan	0
Mexx	0
Michael Kors	1
Miu Miu	1
Neiman Marcus	0
New Balance	0
New Look	0
Next	0
Nike	0
Nordstrom	0
Old Navy	0
Prada	1
Primark	0
Pull&Bear	0
Puma	0
Ralph Lauren	1
Reebok	0
Ross Dress for Less	0
Russell Athletic	0
s.Oliver	0
SAINT LAURENT	1
Saks Fifth Avenue	0
Target	0
Tesco	0
The North Face	0
Timberland	0
TJ Maxx	0
Tommy Hilfiger	1
Triumph	0
Under Armour	0
Uniqlo	0
United Colors of Benetton	0
Urban Outfitters	0
Victoria's Secret	0
Walmart	0
Wrangler	0
Zalando	0
Zara	0

Appendix B – VIF results

Table 4-3 VIF

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1	1	1.106	.904	1.02	.981	1.082	.924	1.003	.997	1.082	.925	1.003	.997	1.083	.923
SIZE			1.106	.904			1.067	.937			1.062	.942			1.111	.9
LEV					1.02	.981	1.021	.979			1.032	.969			1.042	.96
SG									1.003	.997	1.011	.989			1.026	.975
INVTURN													1.003	.997	1.068	.936
Mean VIF	1		1.106		1.02		1.057		1.003		1.047		1.003		1.066	

Table 4-4 VIF

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1	1	1.09	.917	1	1	1.052	.951	1.002	.998	1.047	.955	1.004	.996	1.048	.954
SIZE			1.09	.917			1.058	.945			1.051	.952			1.1	.909
LEV					1	1	1.008	.992			1.013	.987			1.015	.985
SG									1.002	.998	1.008	.992			1.023	.978
INVTURN													1.004	.996	1.065	.939
Mean VIF	1		1.09		1		1.039		1.002		1.03		1.003		1.05	

Table 4-5 VIF

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1	1	1.055	.948	1.009	.991	1.065	.939	1.003	.997	1.061	.943	1	1	1.065	.939
SIZE			1.055	.948			1.056	.947			1.049	.954			1.097	.912
LEV					1.009	.991	1.009	.991			1.021	.98			1.033	.969
SG									1.003	.997	1.013	.987			1.028	.972
INVTURN													1	1	1.072	.933
Mean VIF	1		1.055		1.009		1.043		1.003		1.036		1		1.059	

Table 4-6 VIF

	(1)		(2)		(3)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1.375	.727	1.342	.745	1.346	.743
SIZE	1.117	.895	1.106	.904	1.107	.903
LEV	1.105	.905	1.058	.945	1.067	.938
SG	1.031	.97	1.028	.973	1.035	.966
INVTURN	1.118	.894	1.116	.896	1.131	.884
LUX	4.811	.208	4.782	.209	5.065	.197
LUX*FTI	4.528	.221	4.516	.221	4.828	.207
Mean VIF	2.155		2.135		2.226	

Table 4-7 VIF

	(1)		(2)		(3)		(4)		(5)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.149	.87								
GO			1.081	.925						
TR					1.018	.982				
KSF							1.073	.932		
SI									1.109	.902
SIZE	1.163	.86	1.073	.932	1.063	.941	1.107	.903	1.126	.888
LEV	1.052	.95	1.056	.947	1.027	.974	1.034	.967	1.053	.95
SG	1.027	.974	1.045	.957	1.026	.975	1.023	.977	1.024	.976
INVTURN	1.163	.86	1.068	.936	1.073	.932	1.069	.936	1.067	.937
Mean VIF	1.092		1.065		1.041		1.061		1.076	
	(6)		(7)		(8)		(9)		(10)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.643	.609								
GO			1.567	.638						
TR					1.28	.781				
KSF							1.525	.656		
SI									1.44	.695
SIZE	1.174	.852	1.074	.931	1.068	.937	1.125	.889	1.126	.888
LEV	1.104	.906	1.121	.892	1.086	.921	1.103	.907	1.109	.901
SG	1.033	.968	1.056	.947	1.031	.97	1.027	.974	1.027	.973
INVTURN	1.112	.899	1.112	.899	1.14	.877	1.118	.894	1.111	.9
LUX	7.979	.125	3.53	.283	1.689	.592	3.68	.272	2.529	.395
LUX*PC	8.409	.119								
LUX*GO			3.953	.253						
LUX*TR					1.412	.708				
LUX*KSF							3.376	.296		
LUX*SI									2.73	.366
Mean VIF	3.208		1.916		1.244		1.85		1.582	

Table 4-8 VIF

	(1)		(2)		(3)		(4)		(5)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.099	.91								
GO			1.046	.956						
TR					1.012	.988				
KSF							1.054	.949		
SI									1.076	.929
SIZE	1.149	.87	1.069	.935	1.058	.945	1.1	.909	1.12	.893
LEV	1.02	.98	1.023	.978	1.016	.984	1.015	.985	1.025	.976
SG	1.023	.977	1.042	.96	1.023	.978	1.02	.98	1.021	.979
INVTURN	1.066	.938	1.065	.939	1.07	.935	1.067	.938	1.065	.939
Mean VIF	1.072		1.049		1.036		1.051		1.076	
	(6)		(7)		(8)		(9)		(10)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.598	.626								
GO			1.535	.651						
TR					1.279	.782				
KSF							1.506	.664		
SI									1.404	.712
SIZE	1.157	.864	1.07	.934	1.062	.942	1.118	.894	1.121	.892
LEV	1.058	.945	1.068	.937	1.056	.947	1.065	.939	1.066	.938
SG	1.03	.971	1.053	.949	1.028	.973	1.024	.977	1.025	.976
INVTURN	1.11	.901	1.11	.901	1.136	.88	1.116	.896	1.109	.902
LUX	7.981	.125	3.518	.284	1.676	.597	3.658	.273	2.506	.399
LUX*PC	8.458	.118								
LUX*GO			3.968	.252						
LUX*TR					1.418	.705				
LUX*KSF							3.36	.298		
LUX*SI									2.722	.367
Mean VIF	3.199		1.903		1.236		1.835		1.565	

Table 4-9 VIF

	(1)		(2)		(3)		(4)		(5)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.124	.89								
GO			1.065	.939						
TR					1.016	.985				
KSF							1.062	.942		
SI									1.088	.919
SIZE	1.149	.87	1.061	.943	1.051	.951	1.092	.916	1.113	.899
LEV	1.039	.963	1.045	.957	1.024	.977	1.033	.968	1.043	.959
SG	1.029	.972	1.048	.954	1.029	.972	1.026	.974	1.028	.973
INVTURN	1.074	.931	1.071	.934	1.079	.927	1.07	.935	1.069	.936
Mean VIF	1.083		1.058		1.04		1.057		1.076	
	(6)		(7)		(8)		(9)		(10)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
PC	1.614	.62								
GO			1.534	.652						
TR					1.288	.776				
KSF							1.492	.67		
SI									1.406	.711
SIZE	1.166	.858	1.062	.942	1.059	.945	1.117	.896	1.115	.897
LEV	1.065	.939	1.077	.928	1.057	.946	1.071	.933	1.071	.933
SG	1.037	.965	1.06	.944	1.034	.967	1.03	.971	1.031	.97
INVTURN	1.122	.892	1.119	.894	1.158	.864	1.126	.888	1.116	.896
LUX	8.461	.118	3.59	.279	1.701	.588	3.797	.263	2.632	.38
LUX*PC	9.006	.111								
LUX*GO			4.081	.245						
LUX*TR					1.439	.695				
LUX*KSF							3.541	.282		
LUX*SI									2.862	.349
Mean VIF	3.353		1.932		1.248		1.882		1.605	

Table 4-10 VIF

	(1)		(2)		(3)		(4)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1.083	.923	1.084	.923	1.068	.936	1.069	.936
SIZE	1.111	.9	1.11	.901	1.103	.906	1.104	.906
LEV	1.042	.96	1.044	.958				
LEV_A					1.022	.978	1.022	.978
SG	1.026	.975			1.021	.979		
SG_A			1.027	.974			1.023	.978
INVTURN	1.068	.936	1.068	.936	1.06	.944	1.061	.943
Mean VIF	1.066		1.066		1.055		1.056	

Table 4-11 VIF

	(1)		(2)		(3)		(4)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1.048	.954	1.047	.955	1.071	.933	1.072	.933
SIZE	1.1	.909	1.097	.911	1.091	.916	1.091	.916
LEV	1.015	.985	1.014	.986				
LEV_A					1.043	.959	1.043	.959
SG	1.023	.978			1.021	.979		
SG_A			1.023	.977			1.022	.979
INVTURN	1.065	.939	1.065	.939	1.061	.942	1.062	.941
Mean VIF	1.05		1.05		1.058		1.058	

Table 4-12 VIF

	(1)		(2)		(3)		(4)	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
FTI	1.065	.939	1.065	.939	1.062	.942	1.063	.941
SIZE	1.097	.912	1.097	.912	1.101	.908	1.102	.908
LEV	1.033	.969	1.031	.97				
LEV_A					1.021	.979	1.021	.979
SG	1.028	.972			1.02	.98		
SG_A			1.029	.972			1.022	.979
INVTURN	1.072	.933	1.073	.932	1.061	.942	1.062	.941
Mean VIF	1.059		1.059		1.053		1.054	

Appendix C – Hausman test results

Table 4-3 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
P-value	.041	.035	.008	.001	.001	.006	.012	.034

Table 4-4 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
P-value	.032	.026	.008	.022	.001	.003	.034	.047

Table 4-5 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
P-value	.012	.032	.042	.003	.021	.024	.043	.036

Table 4-6 Hausman test results

	(1)	(2)	(3)
P-value	.341	.098	.121

Table 4-7 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
P-value	.045	.031	.009	.023	.041	.675	.126	.432	.134	.078

Table 4-8 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
P-value	.024	.006	.048	.037	.046	.451	.087	.098	.142	.389

Table 4-9 Hausman test results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
P-value	.011	.034	.050	.036	.041	.087	.153	.069	.231	.073

Table 4-10 Hausman test results

	(1)	(2)	(3)	(4)
P-value	.041	.022	.013	.048

Table 4-11 Hausman test results

	(1)	(2)	(3)	(4)
P-value	.010	.043	.017	.043

Table 4-12 Hausman test results

	(1)	(2)	(3)	(4)
P-value	.048	.026	.039	.024