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The mediating role of corporate reputation, brand equity and innovation in the link between CSR and financial performance. A meta-analysis

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Abstract

Over the last 50 years, corporate social responsibility (CSR) programs have become more prominent in the business world. Corporations started investing in such programs to strengthen its' brand and satisfy evolving customer needs. Additionally, it is believed that a CSR-oriented strategy not only creates a good corporate image but also brings value to a company in the form of financial benefits. Through meta-analytical structural equation modelling, we aggregated results from 58 studies consisting of 291 correlation coefficients to examine the robustness of the CSR-CFP relationship. Our study examines three different mechanisms explaining how CSR positively affects the firm's short- and long-term financial performance. We fill the gap in the existing literature by exploring the roles of corporate reputation, brand equity and innovation as they pertain to the link between CSR practices and financial performance. The findings of our research revealed that CSR affects positively accounting-based FP (profitability, sales, ROA, ROI, ROS, etc.) through enhanced corporate reputation and brand equity. Moreover, we found that CSR stimulates innovation and improves the reputation of a firm contributing to increased stock returns. However, CSR does not directly lead to higher stock performance. We conclude with a theoretical contribution, managerial implications, limitations and guidance for future research.

1. Introduction

1.1. Importance of CSR

The concept of Corporate Social Responsibility (CSR) has been evolving over the course of several decades, both in the academic and business worlds. According to McKinsey research, 76 percent of managers believe that CSR has a positive long-term shareholder value and 50 percent of executives claim that CSR helps their companies to increase the firm's short-term value (Bonini, Görner & Jones, 2010).

In 2018 Fortune Global 500 firms spent around $20 billion a year on CSR activities (Meier & Cassar, 2018), which amounts to a mere 2% of their profit (Tendolkar, 2019). The question is *whether* and *why* the expenditures to CSR activities will maximize the companies' profit. This topic is slightly more prominent nowadays, as social concerns spanning the community put a little more pressure on companies' reactions in light of different crisis events, such as the Covid-19 pandemic outbreak (Kramer, 2020).

Today's conceptual understanding of CSR originates back in the mid-1950s when it was first argued that in addition to profit maximization, companies need to make commitments towards their stakeholders, including employees, customers, and the general public (Carroll, 1999). In order to build trust among different stakeholder groups, the companies have to define the measurement, report their efforts (Moore, 2020) and calculate the economic effect from contributing to CSR.

Within the course of extant research on CSR topic, some scholars identified several theories that can explain the strategic implications of CSR and what motivates firms to get involved in CSR events. Some scholars looked at the concept from the perspective of different economic theories, such as signalling, agency, stakeholder, institutional and classical economics. In contrast, others looked at the benefits from the perspectives of resource-based-theory (RBT) and theory-of-the-firm models (McWilliams et al., 2006). For example, some managers are involved in CSR activities to satisfy the needs of different stakeholders, including customers, employees, shareholders, etc. (Freeman, 1984). Others consider CSR initiatives from the perspectives of the RBT framework; specifically, CSR activities can be

regarded as resources or capabilities that can constitute sustainable competitive advantage (McWilliams et al., 2002).

The outcomes of CSR were examined from different levels of analysis: institutional, organizational and individual. The organizational level of analysis has been under more focal view – many studies looked specifically at the relationship between CSR and financial outcomes (Aguinis & Glavas, 2012; Friedman, 1970). However, the association between CSR and corporate financial performance (CFP) is two-fold. Friedman (1970) argued that CSR investment would reduce corporate profit and stock price, since these investments benefit some stakeholders at the expense of shareholder wealth. On the contrary, in more recent years it is believed that CSR investment can generate a sustainable competitive advantage that increases CFP both in the long and short term (Waddock & Graves, 1997). The controversy exists due to the complexity of CSR and CFP measures and the existence of multiple external and internal factors that impact the financial outcomes. In their literature review, Aguinis and Glavas (2012) identified specific knowledge gaps calling for the multilevel mechanism to look at the potential underlying institutional mediating effects that can link CSR and firm financial outcomes.

1.2. Contribution to CSR-marketing literature

There is empirical research about potential marketing moderators in the relationship between CSR and firm performance (e.g., Hull & Rothenberg, 2012; Wang et al., 2016). For example, Mishra and Modi (2016) suggested that the effect of CSR on stock performance is more prominent in the presence of marketing capabilities. Similarly, Servaes and Tamayo (2013) stated that CSR does not influence firm value per se, but may do so in the presence of high customer awareness augmented by the firm's advertising intensity. Additionally, CSR-marketing literature predicted CSR playing a moderator role in the relationship between market orientation and firm performance. For example, Sundström and Ahmadi (2019) highlighted the importance of integrating CSR initiatives into a firm’s market orientation strategies, meaning that CSR activities advance the corporate ability to meet stakeholders’ needs.

Alternatively, the growing body of empirical research identified a wide variety of mechanisms that explain enhanced firm performance which resulted from CSR initiatives. The suggested mechanisms that vary from firm-level marketing assets are for example: enhanced firm reputation (e.g., Fourati & Dammak, 2021), increased innovation capabilities (e.g., Ruggiero & Cupertino, 2018), to customer response metrics such as increased customer loyalty (e.g., He & Lai, 2012), customer satisfaction (e.g., Luo & Bhattacharya, 2006). In addition, while some scholars looked at the impact of specific dimensions of CSR as part of a firm's strategic choice (e.g., Perez et al., 2012), others looked at how CSR communications impact the customer response (e.g., Kim, 2019).

It is important to mention that a significant part of CSR-marketing research has been conducted on a customer level of analysis. Our research focuses on a firm-level as we consider both CSR and CFP metrics measured on an organizational level. Existing meta-analyses conducted in the CSR-marketing field were developed based on marketing assets examining the response of individual customers without aggregating data and evaluating the performance of a firm in general (Al Jarah et al., 2018; Al Jarah & Blend, 2020; Al Jarah & Emeagwali, 2017).

With our study, we want to contribute to current CSR-marketing literature with a systematic review paper that:

a) generalizes the results from the existing empirical studies on the relationship between CSR and financial performance through meta-analytical structural equation modelling (MASEM).

b) provides an integrated synthesized overview of the current state of knowledge that connects CSR and CFP through potential marketing variables.

c) identifies inconsistencies in prior results and potential explanatory mechanisms of enhanced short- and long-term financial performance on a firm-level (Palmatier et al., 2018).

We defined three main marketing mechanisms that potentially mediate the focal relationship: brand equity, innovation, and firm reputation. Furthermore, this study attempts to address the following research questions:

1) What is the general effect of CSR on a firm's financial performance?

2) Do marketing variables mediate the effect of CSR on financial performance?

1.3. Outline of the research

We are answering these two questions using a meta-analytic technique on the empirical research accumulated over decades of empirical CSR-marketing-CFP relationship. We first discuss other meta-analytic review papers that have been done in the field of CSR. Next, we look at existing literature that has examined the relationship between CSR and its potential marketing outcome and provides a general view of potential conceptual models and hypotheses. Then we present the meta-analytical approach for data collection and structural equation modelling – MASEM (Bergh et al., 2016). Finally, we conclude our paper with a discussion of main theoretical and managerial contributions, limitations, and areas for further research.

2. Literature Review

CSR literature is highly fragmented due to the multidimensional nature of the construct. One of the main problems is that there are no clear definitions or measurement procedures of CSR that can be universally applied (McWilliams et al., 2006). Thus, several systematic review papers try to outline the scope of the topical domain and overview the current state of knowledge in the field. For example, in their literature review, McWilliams and colleagues (2006) provided a high-level overview on a variety of perspectives on CSR, which are combined with its strategic implications. Similarly, Aguinis & Glavas (2012) synthesized the existing CSR literature at the institutional, organizational, and individual levels of analysis.

Appendix 1 summarizes selected meta-analytic reviews examining performance outcomes of CSR activities. The extant literature has extensively used meta-analysis as a systematic approach to synthesize the relationship between CSR and corporate financial performance (Frooman, 1997; Margolis et al., 2009; Orlitzky et al., 2003; Allouche & Laroche, 2014; Wang et al., 2016; Vishwanathan et al., 2020).

One of the first meta-analyses conducted in the field of CSR examined the relationship between socially irresponsible/illegal behaviour and shareholders' wealth (Frooman, 1997). Frooman (1997) found that the stock market reacts negatively to events related to companies' socially irresponsible or illicit behaviour ($D = -0.92$). Similarly, Margolis and colleagues (2009) one decade later concluded that the existence of revealed misdeeds as a type of CSR might negatively affect the firm's financial performance. Thus, corporate misdeeds are relatively costly to a company. However, Margolis et al. (2009) found the overall positive effect of CSR on CFP, although relatively low compared to other empirical findings ($r = 0.13$).

In addition, Orlitzky et al. (2003) found a bidirectional correlation ($r = 0.18$) between CSR and CFP. However, this relation cannot be generalized across all dimensions and categories of both variables within the conducted meta-analysis. Similarly, Allouche & Laroche (2005) analysis indicated that CSR reputation indices significantly affect CFP while social disclosure does not have a strong effect.

Arguably, McWilliams & Siegel (2001) considered no reason to observe any relationship as several other variables can mediate or moderate the relationship between CSP and CFP. Their empirical results indicated that the link between CSP and CFP disappears when more accurate variables are introduced into econometric models, such as research and development intensity. In response to that, the meta-analysis conducted by Wang et al. (2016) found the moderating effect of environmental context on the CSR-CFP relationship. The results showed that the CSR-CFP relationship is stronger for the firms from advanced economies as CSR in developed countries with a relatively mature institutional system will be more visible than in the developing ones.

As a significant part of systematic review studies in the field of CSR was conducted in Western countries, Mingjun et al. (2016) tried to close this gap by conducting a meta-analytic review paper in East Asian countries. Even though the overall relationship between CSR and performance is positive, the authors distinguished several unique findings relevant to the Asian region. Specifically, the meta-analysis demonstrated that environmental CSR has a more significant impact than social

CSR on business performance of Asian firms since both practices have different importance in East Asia and Western countries. Furthermore, Mingjun et al. (2016) suggested that the effect of CSR on firm performance is moderated by economic development, firm size, organizational form and measurement mode.

In turn, a recent study by Vishwanathan et al. (2020) tried to develop the concept of Strategic CSR and address the absence of a unified definition of CSR. Additionally, the authors were looking at four mechanisms that can explain positive relationships between CSR and CFP: (1) enhanced firm reputation; (2) increased stakeholders' reciprocation; (3) mitigated firm risk; (4) strengthened innovation capacity. However, the findings revealed that the combined mechanisms constitute only 20% of CSR-CFP relationships.

As mentioned in the previous section, within various decades' scholars have been looking at the different levels of the outcome. For example, Orlitzky and Benjamin (2001) focused specifically on the level of firm risks that can be associated with CSR. Their meta-analytic review supports the notion that the higher a firm's CSP is, the lower is its financial risk ($r = -0.15$). In addition, CSP is more correlated with market risk than accounting risk, which supports the findings by Frooman (1997).

There are fewer meta-analytical papers that have examined the relationship between CSR and marketing outcome (Al Jarah et al., 2018; Al Jarah & Blend, 2020; Al Jarah & Emeagwali, 2017). Al Jarah et al. (2018) looked at the extant literature that examined the relationship between CSR and relationship quality (RQ) in the form of customer satisfaction, customer trust and commitment. They found that there is a relatively large effect size between CSR and trust ($r = 0.52$), and CSR and commitment ($r = 0.56$), while the effect of CSR on satisfaction is less prominent ($r = 0.44$). They justify the weaker relationship by explaining that customer satisfaction is more related to expectations towards the quality and price of the product or service (Zeithaml et al., 2006).

Similarly, Al Jarah & Emeagwali (2017) conducted a meta-analytic study to synthesize the relationship between CSR and behavioural intention (BI) of customers in relation to repurchase/revisit, WOM, loyalty and willingness to pay. The authors revealed the strong overall effect of CSR on combined BI ($r = 0.42$).

Additionally, they found a positive linkage between CSR and loyalty intentions ($r = 0.41$), WOM ($r = 0.38$), purchase intentions ($r = 0.47$) and WTP ($r = 0.37$). The effect of moderating factors such as environmental context (developing vs. developed economies) and industry type did not demonstrate a significant result.

A more recent meta-analysis in CSR-marketing literature examined the relationship between CSR and brand loyalty (Al Jarah & Blend, 2020). Al Jarah & Blend (2020) found a positive relationship between CSR and brand loyalty at an aggregate level ($r = 0.43$). All in all, the medium magnitude between the two constructs is moderated by several contextual factors such as level of innovation or advertising intensity. Based on the revealed results, the higher the level of innovation in the company, the lower the robustness in the relationship between CSR and brand loyalty.

3. Theoretical background

3.1. Definition of the main constructs

3.1.1. CSR defined

The initial definition of CSR by Bowen (1953) refers to certain obligations of firms to pursue or make decisions that are desirable by the interests and values of the society. Later on, plenty of CSR definitions have been developed (Carroll, 1979; Aguinis, 2011; Lacey et al., 2015; Friedman, 1970; McWilliams & Siegel, 2001; Brown & Dacin 1997). One of the most frequently cited conceptualizations of CSR was proposed by Caroll (1979) and derived as "the social responsibility of a business which includes the economic, legal, ethical and discretionary expectations that society has of organizations at a given point of time". Similarly, according to Sheehy (2013), the definition of CSR is both complex and complicated. The inherent complexity is in the multifaceted nature of the problems addressed by CSR and the number of involved stakeholders (actors and institutions).

The CSR-marketing literature defines CSR as a bivalent mechanism on consumer relational exchanges that comprise economic/rational and social/psychological aspects (Lacey et al., 2015). One of the most recent definitions of CSR was developed by Vishwanathan and colleagues (2020) and refers to those activities that

pursue social deeds while at the same time benefit the firm financially through certain organizational mechanisms: enhanced reputation, increased stakeholder reciprocation, mitigated firm risk and/or improved innovation. Our study considers both Carroll's (1979) definition of CSR that includes different dimensions and Vishwanathan's et al. (2020) definition of Strategic CSR.

3.1.2. Corporate financial performance

Firm performance is one of the focal importance in management research. Practitioners often face trade-offs towards the different performance metrics when estimating their financial performance (Feng et al., 2015). To assess the financial side of firm performance, researchers defined CFP from three perspectives: market-based (stock returns), accounting-based (profit metrics) and perceptual (financial performance measured by a survey) (Orlitzky et al., 2003). Market-based indicators not only demonstrate the long-term outcomes and total market valuation but also highlight that shareholders are primary stakeholders whose satisfaction contributes to the overall company's growth (Cochran & Wood, 1984). Market performance widely refers to stock performance. Therefore, we used stock performance as a proxy for market-based performance in our research. Alternatively, accounting-based performance indicators focus on internal decision-making capabilities and their immediate financial outcomes (Cochran & Wood, 1984) and provide a historical interpretation of the company's financial position (Hirschey & Wichern, 1984). Perceptual measures of CFP refer to surveys among managers to provide subjective estimates of their overall financial performance, e.g., "profitability" or "financial positions relative to competitors" (Conine & Madden, 1987).

3.2. The connection between CSR and CFP

The relationship between CSR and CFP has recently generated inconsistent results among different studies. Specifically, while some authors confirmed a positive association (Orlitzky et al., 2003; Aguinis & Glavas, 2012; Margolis et al., 2009; Waddok & Graves, 1997), others found a negative association, an insignificant association or no correlation between these two variables (Aupperle et al., 1985; Friedman, 1970).

3.2.1. CSR-CFP – positive linkage

A positive bidirectional relationship between CSR and CFP is justified by specific economic theories such as stakeholders' theory or resource-based theory (RBT; Wang et al., 2016). According to stakeholders' theory (Freeman, 1984), firms may be involved in CSR activities to engage the broader group of stakeholders. As such, customers may be willing to pay a premium price if the firm is involved in positive social performance (Bhattacharya & Sen, 2003). Similarly, investors may be more inclined to invest in firms that pursue CSR (Barnett & Salomon, 2006). It has also been suggested that employees will demonstrate a stronger commitment to a firm that has a good public image (Dutton et al., 1994).

Other streams of research expanded stakeholders' theory with aspects of RBT (Wang et al., 2016). As such, some scholars postulated that if the firm establishes close relationships with its' primary stakeholders, it will be easier to develop certain intangible resources such as innovation (e.g., Marin et al., 2017), human resources (Russo & Harrison, 2005), and organizational culture (Howard-Grenville et al., 2003), that augment firms' sustainable advantage over its competitors. In their literature review paper, Van Beurden & Gossling (2008) examined 34 preview studies on CSR and firm performance linkage and found a positive association between variables (68% of the examined papers).

3.2.2. CSR-CFP – negative linkage

The negative association between CSR and CFP is explained from the perspective of the costs that the company acquires by investing in CSR initiatives (Wang et al., 2016). Friedman (1970) applied the principle-agent paradigm suggesting that executives (the agents) act in their interest to meet the stakeholders' expectations and not the interest of the shareholder's (the principal) or firm's wealth. For example, the executive might refrain from increasing the price to contribute to the social objective of preventing inflation, even though the price increase may contribute to the company's profitability. Consequently, the firm incurs agency costs that deteriorate the company's financial growth. Some scholars argued that CSR-oriented firms are at a competitive disadvantage as they impose a direct cost on the firm (Aupperle et al., 1985; Barnett & Salomon, 2006). The misleading results have been justified by the existence of other potential factors that mediate

the direct effect from CSR to CFP (Sayedeh et al., 2015; Vishwanathan et al., 2020; Galbreath & Shum, 2012; Rowley & Berman, 2000; Luo & Bhattacharya, 2006). For example, Luo and Bhattacharya (2006) examined the mediating role of customer satisfaction in the CSR-CFP relationship. The authors found that CSR would increase a firm's long-term performance measured by its market value through the mediator of customer satisfaction. Similarly, Galbreath and Shum (2012) posit that the relationship between CSR and CFP is indirect and mediated by firm reputation.

The controversial findings might also be related to the operationalization of the firm performance metrics. Specifically, some researchers found an insignificant relationship between CSR and market-based measures that include earnings per share, Tobin's Q, market-to-book value, stock return, etc., but a significant positive association between accounting-based measures of firm performance and CSR (Orlitzky et al., 2003; Gherghina & Simionescu, 2015). However, Russo and Fouts (1997) found a positive relationship between stock return and the firm's environmental performance. Additionally, some scholars highlighted the importance of long-term financial performance as most CSR investments are short-term, while the stakeholders' reactions are seen in the long run (Marom, 2006; Pava & Krauz, 1996).

Despite the inconsistent results in the empirical research, previous findings in other meta-analyses and assumptions derived above, we expect positive associations between CSR and CFP. Therefore:

> *Hypothesis 1a: CSR has a positive impact on accounting-based financial performance.*
> *Hypothesis 1b: CSR has a positive impact on the stock performance of the firm.*

3.3. Marketing predictors

As previously mentioned, the existing studies that connect CSR and CFP have some inconsistencies in the results, as certain variables, such as mediators or moderators, are considered important determinants of profitability (McWilliams & Siegel, 2000). Similarly, Margolis and Walsh (2003) highlighted that most empirical

research has focused on the direct relationship between constructs disregarding the existence of potential mediating mechanisms. Branco and Rodrigues (2006) contended that the RBT framework explains why firms engage in CSR activities and disclosure.

As such, RBT posits that a firm's unique and inimitable resources and capabilities result in a firm's sustainable competitive advantage (Barney, 1991). Following the proposed framework, McWilliams & Siegel (2001) outlined the theory-of-the-firm model of "profit-maximizing" CSR. According to this model, CSR is considered to be a source of a company's corporate-level differentiation strategies or sustainable competitive advantage (McWilliams & Siegel, 2001). CSR acts as a source of internal, external benefits, or both. Internal benefits of CSR activities are derived from the development of new capabilities such as innovation, while external benefits refer to the effect of CSR on corporate reputation or brand performance (Branco & Rodrigues, 2006).

Following the proposition mentioned above in our research, we focus on firm reputation, brand equity and innovation as a mediating mechanism between CSR and CFP.

3.3.1. Mediating role of brand equity

Brand equity was defined as the additional value that accrues to a firm because of the presence of the brand name that would not accrue to an equivalent unbranded product (Keller & Lehmann, 2006, p. 745). The extant research approached brand creation outcomes from two main perspectives: consumer- or firm-based (Wang & Sengupta, 2016). The financial value of the brand derives from consumer-level outcomes, such as perceptions, attitudes, behaviours (Christodoulides & de Chernatony, 2010), while firm-level focuses on the organizational level of outcomes such as price, market share, etc. (Ailawadi et al., 2003). Torres and colleagues (2012) used panel data of 57 global brands and found that CSR toward all stakeholders positively impacts brand equity. The marketing outcome of CSR initiatives was addressed mainly from a consumer point of view, for example, CSR impacts brand performance through enhanced brand loyalty (Klein & Dawar, 2004), brand perception (Rust et al., 2000), customer satisfaction (Luo & Bhattacharya, 2006), brand advocacy (Du et al., 2007), etc.

Alternatively, other scholars claimed that CSR activities could diminish the firm's brand equity (Prout, 2006; Yoon et al., 2006). Since CSR practices are perceived as self-interested activities, their effect on brand equity may be reduced (Prout, 2006) as customers develop a subjective opinion about the company's social activities. Yoon and colleagues (2006) suggested that CSR activities backfire with reduced brand equity when the consumers suspect a firm's image-promotional goals. Additionally, Gherghina and Simonescu (2015) suggested no statistically significant relationship between CSR and brand equity.

Wang and Sengupta (2016) put RBT's perspective on brand equity and built their assumption on the cooperative stakeholder perspective. According to this point of view, brand equity was defined as a brand value that involves the participation of multiple stakeholders (Iglesias et al., 2013) and arises through interaction (Davciket al., 2015). Thereby, a brand is a firm's unique, inimitable asset that constitutes a competitive advantage, and it helps to (1) increase efficiency and effectiveness of a firm's marketing programs that contribute to own equity relative to rivals; (2) generate greater returns relative to the expectation of the stakeholders. Thus, considering stakeholders' perspective on CSR, stakeholder demands constitute opportunities for brand value co-creation.

There have been some discussions of a positive correlation between brand equity and firm financial performance (e.g., Mizik, 2014; Aaker, 1996; Rahman et al., 2019; Zhukova & Melikova, 2021). Previous research suggests that there is a positive relationship between brand equity and financial performance measured by Tobin's Q (Wang & Sengupta, 2006; Krasnikov et al., 2009), sales revenue (Agostin et al., 2015), return on investment (ROI; Verbeeten & Vijn, 2010) and book value of capital (Barth et al., 1998). Additionally, Mizik (2014) found that customer-based brand equity is not immediately captured in short-term financial performance. Therefore, the scholar suggests that if the executives make a marketing decision based on current product-market performance, they risk underinvesting significantly in value-generating brand assets.

CSR-marketing literature expanded an impact from brand equity to firm performance from the lens of CSR investment. For example, Rahman et al. (2019) suggested that brand value positively impacts a company's current market-based

performance measured by market share and future financial performance measured by Tobin's Q. Additionally, the authors proved that the strength of the relationship between brand value and firm performance depends on whether the company invests in CSR activities. Similarly, Zhukova and Melikova (2021) found that brand equity has an indirect positive effect on both accounting-based and market-based financial performance.

Appendix 2 summarizes the empirical results related to the CSR-brand equity relationship. Our research focuses on the broadened stakeholder cooperative perspective on brand equity at a corporate level. Therefore:

Hypothesis 2a: CSR has a direct effect on Brand equity.

Hypothesis 2b: Brand equity has a direct effect on accounting-based financial performance.

Hypothesis 2c: Brand equity has a direct effect on stock performance.

3.3.2. Mediating role of firm reputation

As previously discussed by Vishwanathan et al. (2020) in his meta-analysis, one of the empirical mechanisms that have been well-researched is firm reputation. Reputation is one of the intangible assets about which marketing and financial performance are concerned (Schwaiger, 2004; Miles & Covin, 2000) and defined as a perceptual representation of a firm's past actions and future prospects that describe the firm's overall appeal to its stakeholders (Fombrun, 1996). In addition, competitive advantage based on corporate reputation is one of the intangible assets, which is a source of strategic advantage that enhances the ability of corporations to create value over the long term (Caves & Porter, 1977).

According to signalling theory (Spence, 2002), CSR positively affects a company's reputation. Additionally, marketing literature defines a firm's reputation as a representation of public opinion and stakeholder perceptions. Taking this into account, companies that manage to demonstrate a high level of CSR activity are perceived as those who behave in accordance with the expectations of different stakeholder groups (Brammer & Pavelin, 2006). Thus, improve their reputation in the eyes of their stakeholders. However, for the reputation enhancement mechanism to be enacted, CSR activities must target and be visible to a broader audience (society, employees, customers, environmentalists etc.).

Another aspect that should be considered is whether the norms and company values are demonstrated through CSR and consistent with those of stakeholders. As Chatman (1989) noted, customers are attracted to organizations they view as having values and norms they deem essential. It leads to an enhanced firm image, consequently, to a higher reputation. Drawing on the abovementioned evidence, we expect firm CSR to be positively related to corporate reputation.

There is some evidence that demonstrates a positive relationship between reputation and CFP. Scholars argue that companies' positive reputation improves market value and sales (Kotha et al., 2001), positively affects return on assets (ROA) and these results are persistent over time. Shamsie's (2003) study results also support a positive relationship between reputation and CFP. However, the strength of the effect depends on the industry (Shamsie, 2003). Moreover, firms that develop strong reputations create a high level of trust with their stakeholders. Trust is a substitute for a governance mechanism because fewer protective tools are needed. Consequently, the enhanced reputation of the firm achieved through the demonstration of CSR lowers transaction costs, which offers performance-related advantages (Jones, 1995; Prahalad, 1997). *Appendix 4* summarizes the empirical results related to CSR-firm reputation relationship. Therefore:

> *Hypothesis 3a: CSR has a direct effect on corporate reputation.*
> *Hypothesis 3b: Corporate reputation has a direct effect on accounting-based financial performance.*
> *Hypothesis 3c: Corporate reputation has a direct effect on stock performance.*

3.3.3. Mediating role of innovation

The relationship between CSR and innovation has been under focal view in empirical research (Ratajczak & Szutowski, 2016). CSR has been proved a positive direct driver of innovation (Nidumolu et al., 2009; Jaffe & Palmer, 1997; Rennings & Rammer, 2011). Using the RBT framework, some researchers confirmed that CSR might contribute to corporate sustainable competitive advantage through increased innovation capabilities (European Commission, 2006; Chang, 2011; Dong et al., 2014). The link between CSR and innovation can be considered as part of the company's corporate strategy (Bansal, 2005). CSR principles encourage

firms to invest more in innovation and R&D, which will generate a competitive advantage in the market and subsequent financial growth. At the same time, innovation itself leads a firm to determine social and environmental growth areas (Miles et al., 2009; Gallego-Alvarez et al., 2011).

On the contrary, Tsai et al. (2012) found that CSR does not promote innovation in the company. Similarly, Gallego-Alvarez et al. (2011) discovered a negative bidirectional relationship between CSR and innovation. However, it was also proved that the significance level varies depending on the industry and listing in the Dow Jones Sustainability Index.

The link between innovation and CFP has been established in the strategy literature (Tsai, 2001; Zahra & George, 2002; Amores-Salvado et al., 2014). Furthermore, innovation also is an important predictor in the relationship between CSR and financial performance (Ratajczak & Szutowski, 2016; Hull & Rothenberg, 2008; Wagner, 2010; Kurapatskie & Darnal, 2013; Delmas et al., 2011; Tang et al., 2012). The prediction is explained by the notion that firms involved in CSR activities generate innovations that can contribute to social and financial wellbeing. For example, Kurapatskie and Darnal (2013) categorized innovation into higher-order sustainability activities, which refer to new green product and service development and lead to greater financial performance. Some scholars focused on the potential product differentiation which resulted from CSR innovation activities (Hull & Rothenberg, 2008; McWilliams & Siegel, 2001), while others stressed the potential cost reduction which resulted from process innovation in the context of environmental management (Christmann, 2000). In their event study, Ba and colleagues (2012) found that green product development decisions such as innovation directly influence market value. *Appendix 3* summarizes the empirical results related to the CSR-innovation relationship. Therefore:

Hypothesis 4a: CSR has a direct effect on innovation

Hypothesis 4b: Innovation has a direct effect on accounting-based financial performance

Hypothesis 4c: Innovation has a direct effect on stock performance

Considering the theoretical background on the relationship among all constructs and links between them, we propose the following two hypotheses that capture the mediation effects:

> *Hypothesis 5a: There is an indirect positive effect between CSR and accounting-based financial performance.*
> *Hypothesis 5b: There is an indirect positive effect between CSR and stock performance.*

Figure 1 represents the hypothesized conceptual model of our analysis. For clarity of presentation, all constructs are represented as first-level variables.

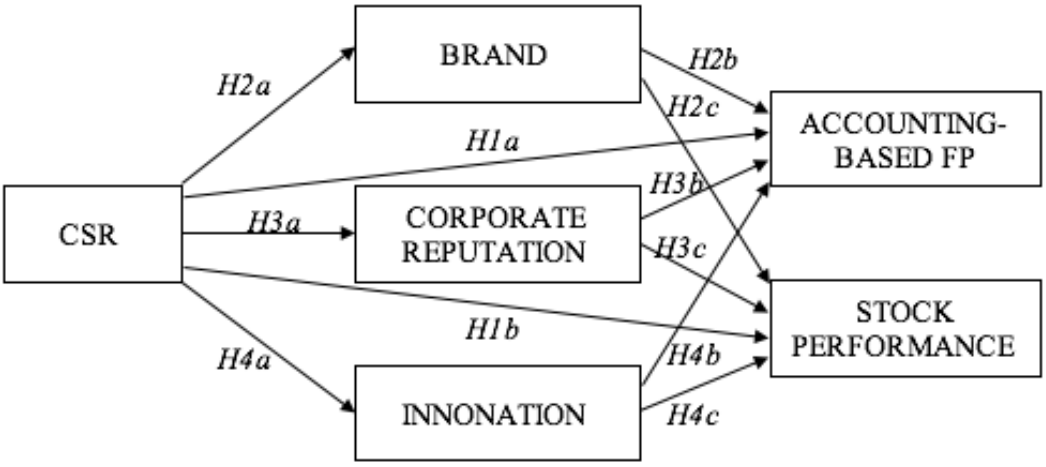

Figure 1. Conceptual Model

4. Methodology

The chosen method is meta-analytic structural equation modelling (MASEM) – a statistical method to synthesise the research findings (Cheung, 2015). MASEM consists of two stages: cumulating existing research findings into a single effect size in the form of a pooled correlation matrix (Hunter & Schmidt, 1990), followed by using that pooled matrix to fit and compare different structural models supported by the theories (Cheung, 2015).

As the MASEM approach combines two techniques, meta-analysis (MA) and structural equation modelling (SEM), researchers use the strengths of each to address the main research question (Landis, 2013). Moreover, the MASEM-method enables to obtain all relevant effect sizes even from the studies where the relationships specified by a theory are not included (Viswesvaran & Ones, 1995).

This approach allows testing the models across various samples, conditions, and measurements. Even though primary studies can certainly achieve big enough sample sizes, the size of a total sample far exceeds the number of samples in a single study, as MASEM is typically generated from primary studies. Based on the outline provided by Viswesvaran and Ones (1995), we build our data collection and analysis as follows:

1) Identify important constructs and relationships,
2) Identify the measures used to operationalise each construct,
3) Obtain all the relevant statistics from the prior studies;
4) Estimate the mean correlations between the constructs and synthesise the pooled correlation matrix;
5) Use path analysis with the estimated correlations to test the proposed theory.

The following sections explain how we used MA to pool effect sizes across the studies and SEM to analyse the data and explain the results.

4.1. Meta-analysis

Meta-analysis is one of the most recent additions to the researchers' methods toolbox. Glass (1976, p.3) had defined it as "analysis of analysis" since it is used to integrate the findings and systemising literature review on a specific question of interest (Schulze, 2004). Since a single effect size is not sufficient to conclude, the combination of numerical results of a few or many studies, the accurate estimate of descriptive statistics (Hedges, 1987; Rosenthal, 1978), the explanation of inconsistencies as well as the discovery of moderators and mediators in bodies of research findings (Rosenthal and DiMatteo, 2001) are required to generalise the findings.

Our meta-analysis focuses on the Pairwise Pearson correlation coefficients, as an effect size, instead of effect size *d*, or the regression coefficient. Correlation coefficients are considered as being of the highest importance for the present purpose of evaluating the chosen meta-analytical approach. Therefore, by collecting the maximum number of variables of all measured constructs (CSR, innovation, brand equity, corporate reputation, financial performance) from the published

correlation matrices, it is possible to generalise the main links between constructs and to test the conceptual model. We performed a random-effects model, where the SEM parameters are considered random and varied across different studies (Cheung & Chan, 2005), and we did not assume a normal distribution. Instead, we accounted for the difference in measurement. The measurements and operationalisations are described in the following section.

4.1.1. Data collection and criteria for inclusion

To ensure the representativeness and completeness of our database, we used a four-stage sampling procedure to identify studies to be included in the meta-analysis. First, we read review articles (Aguinis and Glavas, 2012; McWilliams et al., 2006; Maignan & Ferrell, 2004) and prior meta-analyses (Orlitzky et al., 2003; Orlitzky & Benjamin, 2001; Vishwanathan et al., 2020; Allouche & Laroche, 2014). Second, we looked into the (1) ABI/INFORM, (2) Google Scholar, (3) JSTOR, (4) SSRN, (5) EBSCO Host and (6) Science Direct databases and searched for studies within the field of our interest regardless of the date of publication. The search terms were "CSR," "corporate social responsibility," "socially responsible company", "social performance," "social responsibility," and "corporate social performance". Third, we manually searched high-ranked scholarly journals in international business, management, marketing, business ethics and finance, including *Journal of Business Ethics* (4-year impact factor = 6.604), *Journal of Marketing* (4-year impact factor = 12.268), *Journal of Marketing Research* (4-year impact factor = 7.703), *International Journal of Research in Marketing* (4-year impact factor = 5.375), *Strategic Management Journal* (4-year impact factor = 9.474), *Journal of Academy of Marketing Science* (4-year impact factor = 13.7), *Journal of Public Policy in Marketing* (4-year impact factor = 4.306), *Academy of Management Journal* (4-year impact factor = 13.194). Lastly, applying snowball sampling, we examined the reference lists of all major research reviews previously published on relationships that we were interested in to identify any studies that we could have overlooked. Additionally, we backwards-traced all references reported in the identified articles and forward-traced all articles that cited original articles via Google Scholar. However, we did not correspond with authors asking them for correlation tables if they are not reported in studies. Therefore, we did not include unpublished studies

that meet the eligibility criteria described below. Consequently, the unresolved "file-drawer" problem (Rosenthal, 1995) is a limitation of our research and might have led to skewed results. However, the inclusion of unpublished studies creates room for future empirical research. Using such a complex approach in data collection enabled us to yield a decent sample of primary studies with a sufficient number of effect sizes for the research. We will discuss this in the last section.

To be included in our meta-analysis, a study had to satisfy the following criteria. First, we looked through the study's title and the abstract to define the relevance of the research. The study must examine the relationship between at least two of the following constructs: CSR and financial, product-market or customer-based performance outcome. Second, in our database, we included only those empirical studies that provide correlation tables since our research focuses on a Pearson's product-moment correlation *r* as an effect size. Collecting only one type of effect size enables us to make direct comparisons across different studies (Schulze, 2004). Moreover, both significant and insignificant correlation coefficients are included in the dataset. Third, we considered the level of analysis on which the main research questions are posed. In our research, we included only those studies that were conducted at the firm level. Therefore, the manuscript had to report an effect size for the association between CSR and other variables at the firm level or provide an aggregated effect size if the data was collected from individual customers of certain firms included in the sample. Our initial database consisted of 364 pieces of empirical research. However, a total of 58 studies satisfied the criteria of final inclusion. The publication range of included studies was between 1997-2020.

We then developed a coding protocol (Lipsey & Wilson, 2001) for extracting effect size and sample size information for all the variables in our study: dependent, independent and mediator variables.

4.1.2. Measurements and definition of constructs

We have selected the following categories combined into five main constructs: (1) variables regarding CSR, (2) variables regarding corporate reputation, (3) variables regarding brand equity, (4) variables regarding innovation, and (5) two sets of variables regarding firm performance – accounting-based firm performance and

stock performance representing market-based financial performance. Since existing studies used many different measurements and definitions of variables, we provide a description and operationalization of the constructs in *Table 1*.

Table 1. Description and operationalization of the variables.

Construct	Variables in primary studies	Definition	Operationalizations
Corporate social responsibility (CSR)	Ethical dimension, economic dimension, discretionary dimension, legal dimension (Saeidi, 2015); responsibilities towards community, environment, customer, supplier (Rettab et al., 2009); corporate environmental ethics (Chang, 2011); ecological contribution, social contribution (Mithani, 2017); positive CSR.	Certain obligations of firms to pursue or make decisions that are desirable by the interests and values of the society (Bowen, 1953).	1. CSR scores from the KLD database. 2. The CSRI – an index developed by Boston College Center for Corporate Citizenship and Reputation Institute. 3. Self-reported assessments of CSR in surveys (Chen & Wang, 2011). 4. Third-party evaluations of the firm's CSR, for example, by parties such as an independent evaluation agency Innoves (Hui-Ming, 2010).
Corporate reputation (REP)	Corporate reputation, brand reputation; corporate image, brand image.	A perceptual representation of a firm's past actions and future prospects that describe the firm's overall appeal to its stakeholders (Fombrun, 1996).	1. External assessments of the firm reputation such as the propensity of favourable press articles, expert ratings of firm reputation, rankings such as Fortune Magazine (MAC index). 2. Self-reported assessments of a firm's reputation in a survey.

Brand equity (BRAND)	Brand value, brand equity.	The additional value that accrues due to the brand name's presence would not accrue to an equivalent unbranded product (Keller & Lehmann, 2006, p. 745).	1. Brand value evaluations by Brand Finance. 2. BAV's brand asset metric. 3. Brand valuation estimates reported by Interbrand.
Innovation (INNOV)	Product innovation (El-Garaihy et al., 2014), exploratory, and exploitative innovation (Ji et al., 2019), sustainability innovation (Wagner, 2009), green product and green process innovation (Chang, 2011), innovativeness capability (Luo & Bhattacharya, 2006), organisation innovation (Wang et at., 2014); R&D intensity, R&D expenditure, R&D investment, R&D expenditure intensity.	Innovativeness capability of the firm and product introductions (Luo & Du, 2015).	1. Third-party evaluations, such as Fortune's ratings on innovativeness. 2. Self-reported the number of new product/service introductions, new patents registrations. 3. Innovativeness relative to competitors measures by surveys. 4. General measures of innovation intensity such as R&D expenses/sales; R&D expenses/assets; R&D expenses/total number of employees. 5. Total company's investment in R&D.
Accounting-based financial performance (ABFP)	ROE, ROA, ROI, profit, total sales, total assets.	Internal decision-making capabilities and their immediate financial outcomes (Cochran and Wood, 1984).	Accounting-based measures as ROE, ROA, ROI, profit, total sales, total assets: - data from Compustat or Datastream databases; - self-reported performance in comparison with their competitor's performance.
Stock performance (STOCK)	Tobin's Q, stock return, market-to-book ratio.	The long-term outcomes and total market valuation (Cochran & Wood, 1984).	Market-based measures such as Tobin's Q and stock return, market-to-book ratio based on data from secondary sources.

Independent variable: Corporate social responsibility (CSR)

Corporate social responsibility is related to certain obligations of firms to pursue or make decisions that are desirable by the interests and values of the society (Bowen, 1953). In our research CSR construct is a combination of different variables that in prior studies are named as "corporate social responsibility" or "corporate social performance", as well as variables representing different dimension of CSR ("ethical dimension", "economic dimension", "discretionary dimension", "legal dimension"); "ecological contribution" and "social contribution", "positive CSR" (refers to voluntary corporate actions designed to create benefits for diverse stakeholders), "responsibilities towards community / environment / customer / supplier". So all the variables related to a firm's CSR activities that "appear to further some social good" (McWilliams and Siegel, 2001, p. 117) are included in a construct *CSR*.

There are three of the most common measures of variables related to CSR. The first one is the CSR scores obtained from the KLD database. As these scores evaluate different dimensions separately, scholars combine all strength indicators of CSR into one score – a measure of the total CSR (e.g., Makni et al., 2009; Garcia-Castro et al., 2010; Bhattacharya et al., 2020; Waddock & Graves, 1997; Luo & Du, 2015). The second frequently used measure of CSR is the Corporate Social Responsibility Index (CSRI), developed by Boston College Center for Corporate Citizenship and Reputation Institute. CSRI ranking is determined by how the public perceives a firm regarding citizenship, governance and workplace (e.g., Gherghina & Simionescu, 2015). A very small number of studies used an independent evaluation agency that assisted in evaluating a firm's overall performance (e.g., Wang, 2010). The last, but not less common, measure of companies' CSR orientation is a self-reported CSR assessment through a survey. Most of the surveys utilise Carroll's CSR model (1991), measuring four dimensions: ethical, economic, legal, and philanthropic (e.g., Singh & Verma, 2017; Saeidi, 2015; Galbreath & Shum, 2012; Brammer & Pavelin, 2006). Due to limited time for data collection and missing effect sizes, we decided to combine all these measurements to collect research findings on how much the firm is CSR-oriented. However, we believe that future research should account for any measurement error.

Marketing mediators:

Brand equity

There are different ways of evaluating consumers' perceptions and responses to brands. One way is to measure brand equity, which is considered a construct related directly to customers (Tiwari, 2010). Brand equity is an effect that brand awareness and brand associations have on consumer response (Keller, 2003); however, it is not a financial measure, unlike brand value. Therefore, another method is measuring brand value based on a cost approach or a market approach, which refers to a company-based perspective rather than to each customer individually. According to Raggio & Leone (2007), brand equity is a part of and a factor that contributes to brand value. Therefore, we decided to examine the brand value and brand equity jointly under the construct *brand equity* to represent customers' aggregated response to the company's offerings relative to its name, products, ideology, and quality of communication to each stakeholder at the firm level (Singh & Verma, 2017).

In prior studies (e.g., Gherghina & Simionescu, 2015), brand value has been computed by Brand Finance based on the Royalty Relief methodology, which estimates the future revenue assigned to a brand and the royalty rate. Another approach to evaluate the brand value is the BAV's brand asset metric (e.g., Bhattacharya et al., 2020), one of the most accepted brand value metrics.

Brand equity is measured by using brand valuation estimates reported by Interbrand – the most accepted corporate brand valuation scheme internationally, that considers financial reporting statements, the role of brand and brand strength analyses (e.g., Wang, 2010; Mahabubur et al., 2019). The valuation estimates by Interbrand are relevant and sufficiently reliable for use in financial reports, without any evidence of a simultaneity bias between Interbrand's value and the equity market value (Barth et al., 1998).

Corporate reputation

Some studies use terms "corporate image" and "corporate reputation" as substitutes (Singh & Verma, 2017), arguing that they are closely linked: the former represents the customer's response to the company's offerings (Nguyen, 2006), and the latter

acts as an indicator of whether a company will survive in the long run (Yeo et al, 2011). Therefore, for our research, if the variables are named differently but share a similar definition, for example "corporate/brand reputation" and "corporate/brand image", we included those variables under one construct: *corporate reputation*.

To capture corporate reputation, we used the following measures: (1) third-party assessments such as expert ratings of firm reputation or the propensity of favourable press articles, and (2) rankings such as Fortune Magazine (MAC index) (e.g., Yim et al., 2019; Gallardo-Vázquez et al., 2019) that are based on responses from executives, directors, and financial analysts and determine a reputation score based on different attributes. These two were the most common proxies for corporate reputation. However, some studies conducted surveys to measure firm reputation where they did not evaluate the specific construct, such as product innovation. Instead, the participants were asked to determine the extent of their awareness of their brand reputation in general relatively to competitors (El-Garaihy et al., 2014).

Innovation

Innovation is often defined as the innovativeness capability of the firm and product introductions (Luo & Du, 2015). Innovativeness capability refers to a firm's ability to accumulate and apply knowledge to produce new technologies in the form of products and services (Cho & Pucik, 2005; Hauser et al., 2006). In the examined studies, it is often measured by Fortune's ratings on innovativeness (Luo & Du, 2015). Another measure of firm innovation is improving existing or launching new products or services that lead to sustainable competitive advantage (e.g., Chang, 2011; El-Garaihy et al., 2014). This metric of innovation is measured by the number of patent applications (e.g., Ji et al., 2019) or new product announcements retrieved from multiple data sources such as Lexis-Nexis, Factiva, press releases reported on the company websites, etc. (Schramm-Klein et al., 2016). Moreover, researchers use different names for the same construct defining innovation such as product innovation (El-Garaihy et al., 2014), exploratory and exploitative innovation (Ji et al., 2019), sustainability innovation (Wagner, 2009), green product and green process innovation (Chang, 2011), organisation innovation (Wang et al., 2014). By exploring the definitions of all these variables in studies, we decided to group them as they all represent innovation capability of the firm.

In some studies, innovation is measured using the ratio of R&D expenses to a firm's total number of employees, sales, or total assets. In contrast, other studies use the same measurement for R&D intensity. According to Hitt, Hoskisson, and Kim (1997), R&D intensity is positively related to patents and product innovations. Moreover, many studies report the value of total R&D expenditures obtained from Compustat or directly from the firm's report to record the R&D expenditures or calculate R&D intensity. Harrison et al. (2010) state that R&D investments can lead to the development of new products and can be viewed as a mechanism for a new and successful launch of which some will become a source of superior performance (Chatterjee et al., 2003). Therefore, since R&D expenditure is a part of R&D intensity, which defines innovation capability, we combined those three constructs under one construct: *innovation*.

Dependent variable: Corporate financial performance (CFP)

In prior studies, CFP is operationalized using three types of measures: accounting-based financial performance (ABFP; profit metrics), market-based performance (stock returns) and perceptual measures (financial performance subjective estimates derived via survey; Orlitzky et al., 2003). This leads to measuring performance objectively and subjectively, where objective measurements depend upon profit and financial data, and subjective measurements rely on managerial assessment (Masa'deh et al., 2015). Due to this difference and the difference in capturing the firm's either past performance or expected future earnings (Schaltegger et al., 2006), there is no single measure that could fully capture the overall performance effectively (Snow & Hrebiniak, 1980; Ibrahim et al., 2010). Therefore, as some researchers suggest, we assessed CFP by using both hard and soft metrics, without merging them to compensate for each other's weaknesses. In other words, we separated objective and subjective metrics to measure performance in our research study. Consequently, Tobin's Q, stock return, and market-to-book ratio were used as proxies for a firm's forward-looking FP (e.g., Mahabubur et al., 2019; Luo & Bhattacharya, 2006; Garcia-Castro et al., 2010). On the other hand, studies that examine the accounting-based FP used measures such as return on equity (ROE), return on assets (ROA), return on investment (ROI), return on sales (ROS), profit,

total sales, and total assets (e.g., Yim et al., 2019; Saeidi, 2015; Galbreath & Shum, 2012; Garcia-Castro et al., 2010).

Additionally, since 33 percent of the collected primary studies includes survey data on a firm's accounting-based FP, we separated those studies from data evaluating the same construct but gathered from secondary sources, following the example of a meta-analysis by Orlitzky et al. (2003) and Vishwanathan et al. (2020). Surveys in prior studies collect perceptual data from company's managers and provide subjective estimates of firm profitability compared to competitors. Therefore, self-assessment tends to report larger effect sizes due to social desirability and self-aggrandising biases (Vishwanathan et al., 2020). We ran a separate MASEM analysis on the effects derived from studies reporting objective data. The results of the performed analysis are described in the next section.

4.1.3. Sample and coding

We collected correlation matrices from 58 prior studies that enabled us to retrieve 291 effect sizes in total. The selection of the studies we used for coding is given in *Appendix 5.* The coding procedure started with recording the variable and its definition in the primary study, followed by collecting the correlation coefficient between the variable pair and statistical data that could potentially be used (*p*-value, SD, partial correlation) and study-level information (year of publication, the authors and the link to the study). Finally, the list of all variables with the author's definition of each enabled to combine selected variables into six uniquely named constructs represented in *Table 2*: corporate social responsibility, corporate reputation, brand equity, innovation, accounting-based firm performance and stock performance.

Table 2. The variable tree.

Construct	**Variable**
CSR	CSR
	CSP
Corporate reputation	Corporate/brand reputation
	Corporate/brand image
Brand equity	Brand value
	Brand equity

Innovation		Innovation
		Innovation capability
		Innovation intensity
		New product introduction
		R&D intensity
		R&D investment/expenditure
Financial performance	Accounting-based FP	ROA
		ROE
		ROI
		ROS
		Sales
		Profit/profitability
		Assets
	Stock performance	Tobin's Q
		Stock return
		Market-to-book ratio

4.1.4. Total correlation matrix

Once we got a sample of parameter estimates, the next step was synthesising correlation coefficients to an overall correlation matrix (Cheung & Chan, 2009). Firstly, we started with the table to gauge the correlation matrix: each column represents the link between two constructs, and each line is a unique correlation coefficient (*Appendix 6*). At this stage, following the categorisation above (*Table 2*), we did not aggregate multiple variables into one construct, for example, innovation with R&D intensity and R&D expenditure, for clarity. Moreover, we used the names of groups of variables but not the names of variables from the prior studies. Finally, we divided the dataset into two sections: survey-based financial data (light green section in *Appendix 6*) and data retrieved from secondary sources. If there were no correlation coefficients for a pair of groups of variables, we kept the empty cell.

Secondly, we calculated the average correlation coefficient for each variable pair. Since there was missing information at the coefficient level for some links (Jak &

Cheung, 2018), we conducted an imputation to fill in the empty cell – we computed the average of all effect sizes that include the variables from the pair with a missing value. Then we consolidated groups of variables in the constructs. For example, we merged innovation, R&D intensity and R&D expenditure, and we did the same with other variables representing the same construct. Once the correlation coefficients were aggregated, we calculated the average effect size for each cell in the final pooled matrix. To perform that, we used Microsoft Excel. As a result, we got two pooled matrices to be used for SEM.

The pooled matrix 1 (*Table 3*) is based exclusively on *secondary data*. It consists of 15 mean correlation coefficients aggregated in 6 groups of variables. The total number of effect sizes from studies used to calculate the total matrix is 291. The number of collected effect sizes per link reached 62, and the average number of correlation coefficients in a final matrix per one cell is 19. Initially, there was one missing mean correlation (the link between corporate reputation and brand, which is not the focal relationship) where the imputation was used. This matrix will further be used to test Model 1a and Model 1b.

Table 3. The pooled correlation matrix 1 (secondary data based).

	Corporate Social Responsibility	Corporate reputation	Brand Equity	Innovation	Accounting-based FP	Stock performance
	CSR	REP	BRAND	INNOV	ABFP	STOCK
CSR	1					
REP	0.366593	1				
BRAND	0.243371	0.199280*	1			
INNOV	0.175473	0.150500	0.169857	1		
ABFP	0.119769	0.261250	0.120850	0.023364	1	
STOCK	0.079035	0.142000	0.043000	0.148533	0.117429	1

**computed value by using imputation*

The pooled matrix 2 (*Table 4*) is based exclusively on data from *surveys* on FP and excludes stock performance variables, as that measure cannot be self-reported. Matrix 2 consists of 10 mean correlation coefficients aggregated in 5 groups of variables. The total number of effect sizes from studies used to calculate the total matrix is 223. The number of collected effect sizes per link reached 55, and the

average number of correlation coefficients in a final matrix per one cell is 22. This matrix got two cells with missing values for the link between corporate reputation and brand equity and brand equity and accounting-based financial performance. Therefore, we used imputations to deal with the problem of missing correlation coefficients. This matrix is further used to test Model 2.

Table 4. The pooled correlation matrix 2 (survey-based).

	Corporate Social Responsibility	Corporate reputation	Brand Equity	Innovation	Accounting-based FP
	CSR	REP	BRAN	INNOV	ABFP
CSR	1				
REP	0.366593	1			
BRAND	0.243371	0.199280*	1		
INNOV	0.175473	0.150500	0.169857	1	
ABFP	0.167593	0.371640	0.231222*	0.215800	1

**computed value by using imputation*

4.2. SEM

We used the total correlation matrix obtained from meta-analysis as summary statistics data (SSD) input to Stata to perform a linear SEM. We tested two models based on the theoretical framework, and the connections between constructs are described with path coefficients.

Pearson's chi-square test and Hosmer-Lemeshow test are two commonly used methods for evaluating goodness-of-fit (Qiu et al., 2016). Chi-squared value is the traditional measure for evaluating overall model fit. However, the test assumes normality of the data and severe deviations from normality may result in model rejections even when the model is specified correctly (Qiu et al., 2016). Considering that we used SSD and cannot assume normality of data, we did not use Chi-squared value for evaluating overall model fit. We used the following indices instead:

1. Root mean squared error of approximation (RMSEA): the value between 0.08 and 0.10 provides a mediocre fit and below 0.08 shows a good model fit (MacCallum et al., 1996);

2. Comparative fit index (CFI): a value greater than 0.9 is required to indicate a good fit (Hu & Bentler, 1999);
3. Tucker-Lewis index (TLI): the index of 0 represents no fit and 1 shows perfect fit; it is recommended to use 0.80 as a cutoff (Hooper et al., 2008);
4. Standardised root mean squared residual (SRMR): the value range from 0 to 1 while well-fitting models obtain values less than 0.05 (Byrne, 1998; Diamantopoulos and Siguaw, 2000).

4.2.1. Setup of Model 1

Based on the theoretical background, our conceptual model (*Model 1a*) includes the link between CSR and all marketing variables and all marketing constructs have links to each type of FP. By adding the direct influence of CSR to two financial performance metrics, we included a connection between CSR and financial performance and the mediation effect of three marketing variables (*Figure 2*, *Appendix 7*). We excluded control variables in the current analysis.

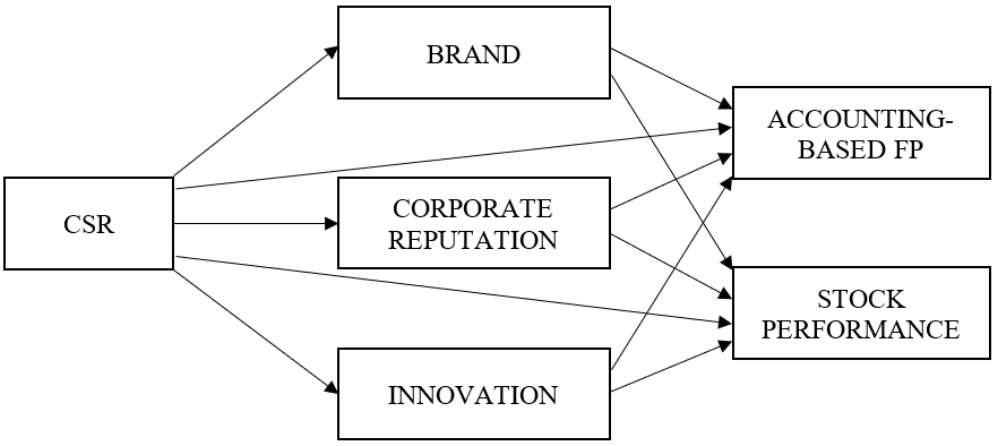

Figure 2. Model 1a (including links between all the variables).

Fit indexes of the Model 1a are: $RMSEA = 0.091$; $CFI = 0.905$; $TLI = 0.642$; $SRMS = 0.047$ (*Appendix 7*). These results provide a mediocre fit. One of the reasons for getting the poor fit could be a congestion of the model as it includes excessive links. Therefore, we decided to simplify the model by excluding insignificant two direct effects: brand-stock performance ($\beta = -0.006$; $p > 0.1$), and innovation–accounting-based FP ($\beta = -0.028$; $p > 0.1$). In this way we set up the Model 1b (*Figure 3*).

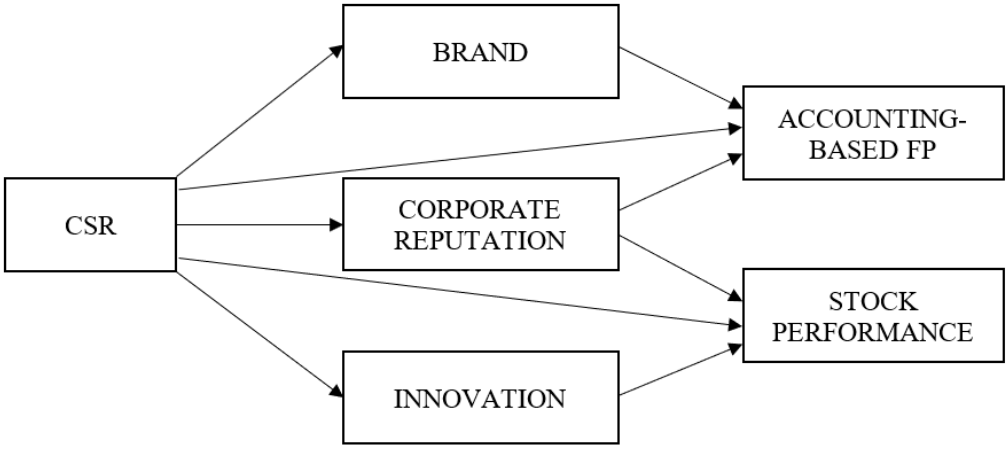

Figure 3. Model 1b (with two excluded links between marketing variables and firm performance).

Fit indexes of the Model 1b are: $RMSEA = 0.067$; $CFI = 0.922$; $TLI = 0.805$; $SRMS = 0.046$ (*Appendix 8*). These results indicate that the obtained model shows a good fit and is further used as a main model for the analysis.

4.2.2. Setup of the Model 2

Additionally, as we collected self-reported data on financial performance, we tested Model 2, where only survey-based accounting measurements are considered under the construct *self_report_fp*. However, as stock performance is a market valuation metric, it cannot be self-reported. Therefore, Model 2 does not include the stock performance variable. The main focus is laid on how CSR impacts the accounting-based financial performance of the firm, based on data evaluated by survey, directly or through marketing mediators (*Figure 4*).

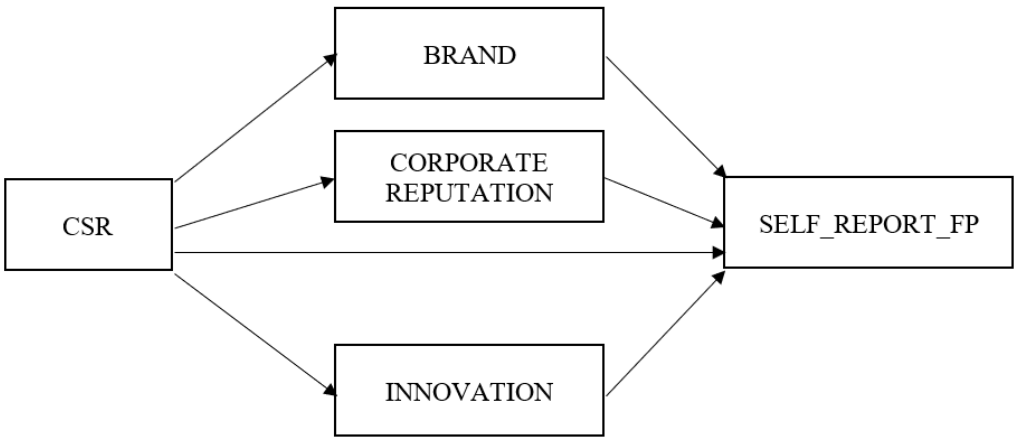

Figure 4.Model 2 (accounting-based financial performance is measured via a survey).

The Model 2 consists of a sample of 223 effect sizes and fit indexes are: $RMSEA = 0.093$; $CFI = 0.941$; $TLI = 0.802$; $SRMS = 0.053$ (*Appendix 9*). These results are controversial as some indices indicate a good fit (CFI and TLI), while some indicate a mediocre fit (RMSEA and SRMS). Moreover, the dataset is missing correlation coefficients of two relationships: (1) between corporate reputation and brand equity (the same as in the Model 1a and Model 1b); (2) and between brand equity and self-reported accounting-based firm performance. Therefore, to pool the total matrix, we conducted imputations twice that inhibited us from considering the results as precise and reliable. Due to these limitations, we do not consider Model 2 to be one of a good fit to discuss the result. However, we provide the recommendations for future research in the section below.

4.2.3. Results

To estimate links in the obtained model, we run the command "*estat teffects*" in Stata that decomposes the effects into total, direct, and indirect. The results of the analysis are presented in *Table 5* and also in *Appendix 8*. As we receive coefficients associated with the various pathways, which are unstandardised coefficients, we will analyse just the significance and direction of effect (positive or negative), but not the magnitude of the effect.

Table 5. Estimation of direct, indirect and total effects

Direct effects	**Coefficients**
CSR – Accounting-based FP (Hypothesis 1a)	0.014
CSR – Stock performance (Hypothesis 1b)	0.013
CSR – Brand equity (Hypothesis 2a)	0.243***
Brand equity – Accounting-based FP (Hypothesis 2b)	0.069
CSR – Corporate reputation (Hypothesis 3a)	0.367***
Corporate reputation – Accounting-based FP (Hypothesis 3b)	0.242***
Corporate reputation – Stock performance (Hypothesis 3c)	0.118*
CSR – Innovation (Hypothesis 4a)	0.175***
Innovation – Stock performance (Hypothesis 4c)	0.128**

Indirect effects	
CSR – Accounting-based FP (Hypothesis 5a)	0.106***
CSR – Stock performance (Hypothesis 5b)	0.066**
Total effects	
CSR – Accounting-based FP	0.120**
CSR – Stock performance	0.079

* p<.1; ** p<.05; *** p<.01

Direct effect

Table 5 contains 9 direct effects. Firstly, we can not support either Hypothesis 1a or Hypothesis 1b, as we did not find sufficient evidence to claim that CSR directly impacts a firm's financial performance either in a short- or long-term perspective.

Secondly, based on the results, three hypotheses related to the relationship between CSR and marketing variables are supported. Hypothesis 2a is supported: CSR has significant positive effect on brand equity ($\beta = 0.243;\ p < 0.01$). Hypotheses 3a and 4a are supported as well: CSR has significant positive effect on corporate reputation ($\beta = 0.367;\ p < 0.01$) and on innovation ($\beta = 0.175;\ p < 0.01$) respectively.

Thirdly, the direct effect of corporate reputation on accounting-based FP is positive and significant ($\beta = 0.242;\ p < 0.01$). Therefore, Hypothesis 3b is supported. Furthermore, the effect of innovation on stock performance is significant and positive ($\beta = 0.128;\ p < 0.05$), so Hypothesis 4c is supported too.

However, as the $p - value$ exceeds the selected significance level of $\alpha = 0{,}05$, we must reject Hypothesis 2b and 3c because the significant *direct* effect of brand equity on accounting-based financial performance and the significant direct effect of corporate reputation on stock performance are not confirmed. Moreover, as we removed two insignificant links between variables to achieve a better fit, we can not support or reject Hypothesis 2c and 4b because they were not tested.

Indirect effect

The indirect effect of CSR on accounting-based financial performance through corporate reputation and brand equity is positive and significant ($\beta = 0.106;\ p <$

0.01), contrary to the *direct* effect between these two constructs. Therefore, Hypothesis 5a is supported. Moreover, Hypothesis 5b is supported as well: the results indicate that CSR has a significant positive *indirect* effect on stock performance ($\beta = 0.066; p < 0.05$) through corporate reputation and innovation. The implications of these results are discussed in the next section.

Total effect

The total effect represents the relationship between variables where the mediator mediates only part of the effect of the intervention on the outcome. Thus, the intervention has some residual *direct* effect even after the mediator is introduced into the model. When combining the indirect and the direct effects, we obtain the total effect, which we would achieve by simply regressing financial performance on CSR (Hayes, 2013; Rucker et al., 2011). Thus, our model has two partial mediation effects – CSR on accounting-based FP and CSR on stock performance.

We could test each proposed mediator with parallel mediation while accounting for the shared variance between them (Hayes, 2013). Parallel mediation analysis indicated that CSR is indirectly related to accounting-based FP through its relationship with corporate reputation and brand equity simultaneously. Firstly, based on the results in *Table 5*, there is a significant positive effect of CSR on brand equity ($\beta = 0.243; p < 0.01$), and insignificant effect of brand equity on financial performance ($\beta = 0.069; p > 0.05$). Secondly, CSR has a significant and positive direct effect on corporate reputation ($\beta = 0.367; p < 0.01$), as well as corporate reputation has a significant positive effect on accounting-based financial performance ($\beta = 0.242; p < 0.01$). The direct effect of CSR on accounting-based FP is insignificant and positive ($\beta = 0.014; p > 0.05$), however, the indirect effect between those constructs is significant ($\beta = 0.106; p < 0.01$). Finally, the total effect when taking into account CSR's *indirect* effect through 2 marketing constructs – corporate reputation and brand equity – is positive and significant ($\beta = 0.120; p < 0.05$), which lead to the conclusion that the mediation is successful (MacKinnon et al., 2007).

To check the *total* effect of the relationship between CSR and stock performance, we looked at the direct effect between these constructs, which is positive and insignificant ($\beta = 0.013; p > 0.05$) and the mediating effect of corporate

reputation and innovation. CSR has a significant and positive impact on corporate reputation ($\beta = 0.367$; $p < 0.01$). However, corporate reputation, in turn, does not show a significant effect on stock performance ($\beta = 0.118$; $p > 0.05$). Then, CSR is considered to be a significant determinant of innovation ($\beta = 0.175$; $p < 0.01$) which in turn positively and significantly affects stock performance ($\beta = 0.128$; $p < 0.05$). Results from the mediation analysis indicate that CSR is indirectly related to stock performance through its link with corporate reputation and innovation. However, this *total* effect is insignificant ($\beta = 0.079$; $p > 0.05$). Therefore, since an insignificant direct effect dilutes a significant indirect one, we can not confirm that mediation is successful. The interpretation of these findings is given in the discussion section.

5. Discussion

Our research aggregated the results of 58 studies published from 1997 to 2020 on the CSR-CFP relationship to resolve the inconsistency in published findings and examine the mechanisms that mediate the relationship between these two constructs. We used MASEM to test the stated hypotheses on the existing empirical evidence. We aim to make several contributions to the CSR-marketing literature.

First, to understand which marketing predictors mediate the relationship between CSR and CFP, we conducted a content analysis and compiled a database of 364 empirical studies. However, the final selection included only 58 published papers that fitted our selection criteria. It implies that the CSR-marketing literature is still fragmented and requires more attention, specifically on a firm level of analysis. Furthermore, there is still room for further research identifying empirical mediating marketing mechanisms that connect CSR and CFP.

Second, one of our objectives was to close an existing gap in CSR-marketing literature which referred to the lack of systematic review papers examining CSR-CFP linkage mediated by marketing variables on a firm level. As such, this study contributes to the literature by introducing three marketing mechanisms: brand equity, corporate reputation and innovation, which strengthen the link between CSR initiatives and the long and short-term financial performance. Furthermore, we

believe that this is one of the first attempts to synthesize CSR and marketing outcomes applying a meta-analytical approach.

Third, the findings of our study have several *managerial implications,* which are discussed below from two perspectives: the effect of CSR on accounting-based FP and stock performance. We received a mixed set of effects that shows how complex the reality of the CSP-CFP relationship may be and just how difficult it is to measure and assess that relationship.

Implications to the link between CSR and accounting-based FP

By synthesising the effect sizes from previous studies, we revealed that CSR initiatives have non-significant positive direct effects on accounting-based FP. In that sense, these results contradict with the majority of the current empirical findings conducted in the CSR literature (Orlitzky et al., 2003; Aguinis & Glavas, 2012; Margolis et al., 2009; Waddok & Graves, 1997; Vishwanathana et al., 2020). This effect might appear because CSR initiatives are likely to be less effective than they are told to be if the motivation behind them is perceived as profit-oriented in nature (Van de Ven, 2008). Therefore, if a firm wants to implement a CSR policy, it should be careful in communicating to avoid the impression of doing that for money. If a company does not do it for money, how can different stakeholder groups recognise a genuine commitment to CSR?

To answer the question above, drawing on existing empirical research on the CSR-CFP relationship, we tested whether any mediating mechanisms impact the effect of CSR on firm profitability. Our findings indicate that CSR enhances corporate reputation and brand equity. These results confirm previous findings that CSR creates a reputation that the firm is reliable and honest. However, in this case the communication ability of the firm might play a significant role (Branco & Rodrigues, 2006) lacking skills to communicate CSR initiatives limits the firm's ability to influence stakeholder perceptions to boost its corporate reputation.

Furthermore, a significant positive effect causally connects corporate reputation to accounting-based FP, indicating that improved corporate reputation contributes to firms' financial success. A strong corporate image can generate excess returns for firms by inhibiting the mobility of competitors in an industry.

However, we did not find statistical support for the hypothesis that brand equity enhances accounting-based FP. In our research that could happen due to several reasons: 1) in our study, we considered brand equity metrics (e.g., BAV, Interbrand score) that pay off in the long run, i.e., the short term accounting-based FP might not be evident; 2) we did not account for the difference in sample characteristics of primary studies and other external factors such as industry, firm size or country; 3) the number of effect sizes was limited. Therefore, this relationship requires further investigation.

Even though the *direct* effect of CSR on accounting-based FP does not seem to be significant, after introducing mediators to the conceptual model, we observed a rapid change in the outcome: CSR affects positively accounting-based FP through enhanced corporate reputation and brand equity. Additionally, CSR's indirect and total effects on accounting-based FP through brand equity and firm reputation are positive and significant. It means that if CSR initiatives are implemented into a business strategy and communicated to the external stakeholders indirectly by changing the brand's perception, the company can reap financial benefits in the short term.

All in all, managers should consider CSR initiatives as antecedents to enhanced brand equity and corporate reputation. Both brand equity and corporate reputation represent brand-related intangible assets that constitute a company's competitive advantage. Thus, CSR should be considered part of a firm's competitive advantage strategy in a broader sense. However, only corporate brands which already have a strong reputation can use communication and marketing of CSR to boost the reputation even further (Van de Ven, 2008). Furthermore, as CSR contributes to a firm's accounting-based FP, the fundamental question of whether "firms do well by doing good" has found statistical support. Therefore, managers should continue practicing social involvement and introducing CSR initiatives as these activities lead to greater profitability, although indirectly.

Implications to the link between CSR and stock performance of the firm

Our meta-analysis also aims to contribute to the literature by revealing that CSR impacts a firm's stock performance. However, we did not find statistical support

for the direct effect of CSR on market-based FP. Therefore, we cannot confirm that investors explicitly favour socially responsible firms.

Since a firm's long-term performance is directly affected by investors' buying and selling behaviours (Wang et al., 2011), we have to understand the mechanisms that change the perception of CSR in the eyes of different stakeholders. We found that CSR enhances corporate reputation and innovation capability that in turn contributes to increased stock return. It confirms the findings of Ba et al. (2012) that strategic initiatives towards green product innovations positively influence investor's valuation of the firm. Similarly, supporting the notion by Godfrey (2005), positive "moral capital" resulting from CSR initiatives contributes to market value by improving the internal and external assets of the firm. In addition, CSR creates public goodwill represented by a firm reputation (Houston & Johnson, 2000).

However, another finding was particularly interesting: CSR does not affect stock performance if the direct and indirect effects through innovation and corporate reputation are combined. The direct insignificant relationship dilutes the effect of innovation and corporate reputation on the CSR-CFP link. The results go in line with Wang's (2016) observation that market-based CFP is less correlated with CSR than other measures of CFP. However, as mentioned in the limitations section, we did not account for temporal differences in the measurements used in primary research. Thus, this also implies that there is room for future research to identify the empirical mechanism that connects CSR with stock performance as we believe that external and internal constraints influence the findings of this research.

Drawing on significant *indirect* effect from CSR to CFP through enhanced innovation and firm reputation, we conclude that managers can obtain a long-term competitive advantage and gain forward-looking long-term financial benefits by investing in green product innovations derived from CSR orientation. Echoing our implications from the previous section, CSR can be a competitive advantage in combining corporate abilities to innovate and enhance corporate reputation. Thus, combining these strategic assets, companies will experience long-term financial stability in the market. As we did not find enough statistical evidence that CSR directly leads to increased market valuation, managers should approach the CSR

strategies through the lenses of other intangible resources that can in turn, contribute to increased market value.

6. Limitations and future research

This paper has some limitations and, together with the findings, provides guidance for future research. Firstly, our meta-analysis is built on published sources instead of both published and unpublished, as the methodology requires (Rosenthal, 1995). This sparks lots of criticism of the meta-analytic approach, as it leads to a non-representative proportion of studies in the total sample that reports mainly statistically significant results that confirm the stated hypotheses and/or report larger effect sizes than unpublished studies (Orlitzky et al., 2003). Therefore, in our research, the "file-drawer" problem is not resolved, limiting us to capture the full breadth and depth of relationships (Rosenthal, 1995). Additionally, not all the relevant papers were included due to time constraints and the low amount of studies examining the CSR-CPF relationship on a firm level of analysis. So, there is a field to retrieve more effect sizes, increase the number of observations, and, therefore, the statistical power of the results.

Secondly, the examined mechanisms of the three mediating variables cannot fully explain how CSR contributes to CFP. Corporate reputation, brand equity, and innovation are a few variables out of many others that act as mediators in a given relationship. Consequently, there is a need to identify more variables – mediators that affect the strength of the link between CSR and firm performance. Initially, we aimed to include *customer satisfaction* and *competitive advantage* (CA) as mediating variables to the conceptual model. However, considering that the level of analysis for our research is a firm and not a customer, there are not many studies measuring satisfaction on a level of our interest (e. g., by ACSI). We found studies on CSR and CA, CA and FP, but hardly any studies on the link between CA and other mediators in our study, such as brand equity or corporate reputation. Therefore, the dataset is too small to allow for generalisations based on available effect sizes, which would lead to skewed results. So, there is a need for meta-analytical research that will examine the potential marketing outcome from CSR initiatives on a firm level of analysis as that type of study is limited in existing marketing and management literature.

Thirdly, an important limitation of our research is eliminating moderators and control variables, as we did not include either of them. According to Hunter & Schmidt (2004), the primary reason for conflicting empirical results could be the existence of contextual moderators. Therefore, controlling for some factors and examining the moderating effect could be a potential direction for future research.

We suggest controlling for the firm size, industry and advertising intensity, which would enable us to remove systematic variance that is undesirable in any research (Bernerth & Aguinis, 2016). Moreover, including moderators in the analysis would explain whether the effect of CSR on FP differs across different kinds of cultural, methodological, and industrial factors. Therefore, we propose to include the following moderators: (1) country-level variables such as across-cultural variation or level of innovation. Some scholars argue that CSR has a high importance in collectivist cultures compared to individualistic ones (Lee & Lee, 2015). Moreover, the impact of CSR may vary depending on the level of innovativeness of the country (Dutta et al., 2018). Additionally, according to Wang et al. (2016), the relationship between CSR and CFP is more vital for firms from developed countries than from developing countries; (2) industry-level variables – industry type, the average profit margin in the industry, or industry concentration. For example, the industry type is considered as one of the contingency factors that may influence the firm-consumer relationship (Brammer & Pavelin, 2006; Perez & Rodrıguez del Bosque, 2015); (3) study-level variables – data collection method, journal quality. Not accounting for these moderators might lead to biased results.

We want to highlight that taking into account the year of data collection might significantly influence future results, which is one of the main limitations of our study. CSR has become more critical in evaluating companies in a stock market nowadays than it was before, by signaling a firms' reputation and organizational commitments to their stakeholders (Albinger & Freeman, 2000; Chong & Tan, 2010). So going beyond profit maximization and caring interests of society, consumers and employees are beneficial to a firms' long-term performance in operations (e. g., Luo & Bhattacharya, 2009; McWilliams & Siegel, 2001). However, this direct link was not confirmed by our findings. We assume that in the late 1990s, the effect of CSR was less prominent than during the last years.

Therefore, we suggest running SEM while controlling for a year and seeing if it affects the CRS–stock performance link or limits the study to a specific time range.

Fourthly, we built our research on the sample of 58 observations which is a relatively small number. Moreover, we used imputations to fill in the missing value in a pooled matrix. Therefore, future research should extend the study by including more effect sizes, especially those that our study lacks the most (brand equity–corporate reputation, corporate reputation–stock performance, brand equity–stock performance). Additionally, we have not considered the measurement error, which is a widespread problem in a meta-analysis that primary studies tend to involve. Finally, some of the constructs in our research are measured through self-report surveys, which are often not corroborated with archival measurements (Bergh et al., 2016). Consequently, future researchers should account for a measurement error by applying a measurement reliability standard to all variables.

Next, in our research, we combined different dimensions of CSR into one construct. However, we believe that the results might have significant deviations if different dimensions of CSR are tested separately. For example, a certain amount of empirical papers looked at how and when the environmental dimension of CSR impacts CFP (e.g., Russo & Fouts, 1997; Elsayed & Paton, 2005). Similarly, CSR has also been measured using both secondary and primary data. In our research, we did not account for different ways to operationalise the construct. However, we believe this also can be an opportunity for future research.

Finally, as mentioned in section 4, we also tested the model with self-reported financial data. We revealed that all the direct and indirect links through marketing mediators between variables are significant except for the link between CSR and the self-reported FP of the firm. However, although the outcomes seem promising, we cannot rely on those results due to a limited number of effect sizes and the use of imputations in two out of ten cases. Therefore, we did not use that model as a major one in our final analysis but recommend extending the research further as it can significantly contribute to the existing management and marketing literature.

Summing everything up, a potential recommendation for future research is to re-do or extend the analysis based on more empirical findings and the inclusion of moderators and control variables.

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Appendix

Appendix 1. Review of other meta-analytic studies conducted in CSR literature.

Reference	IV	DV	Effect size	Key findings	Other variables	Sample
Orlitzky & Benjamin (2001)	CSP	Firm risk	r = -.15; p = -.21	- the higher a firm's CSP the lower its financial risk; - the relationship between CSP and risk appears to be one of reciprocal causality"; - CSP is more strongly correlated with measures of market risk than measures of accounting risk; - of all CSP measures, reputation for social responsibility appears to be the most important in terms of risk implications;	Moderator: measurement	N = 6,186 observations
Orlitzky et al. (2003)	CSP	CFP	r = .18 p = .36	- corporate virtue in the form of social responsibility and, to a lesser extent, environmental responsibility is likely to pay off, although the operationalizations of CSP and CFP also moderate the positive associations; - CSP appears to be more highly correlated with accounting-based measures of CFP than with market-based indicators; - CSP reputation indices are more highly correlated with CFP than are other indicators of CSP	Moderators: artefacts; measurement strategies Mediators: Competencies, Learning and efficiency; reputation-building	N = 33,878 observations; 52 studies
Margolis et al. (2007)	CSP	CFP	r = .13	- companies do not seem to be richly rewarded for engaging in CSP - revealed misdeeds are costly to companies - CSP does not systematically destroy shareholder value - CFP would seem to be unlikely rational or justification for pursuing CSP	Control varibles: firm size, industry, risk, Moderators: methodology	251 studies

Reference	IV	DV	Effect size	Key findings	Other variables	Sample
Allouche & Laroche (2014)	CSP	CFP	r = .143	- CSP has a positive impact on CFP and that this is strongest in the UK context - strong evidence exists for a consistent and substantial effect of research setting in these studies - CSP reputation indices has a more substantial effect on CFP and it appears that social disclosure does not have a strong effect on CFP.	Effect-size variables: CFP measures; firm size and industry; CSP measures; Study-level variables: Journal; country;	N = 57,409 82 studies
Wang et al. (2016)	CSP	CFP	r = .0587	- CSR and CFP relationship is positive and significant; - Subsequent financial performance is associated with prior social responsibility, while ther reverse direction is not supported; - the measurement strategies of the two key constructs of CSR and CFP eplain some variations of the CSR-CFP reltionship; - CSR in the developed world with a relatively mature institutional system and efficient market mechanism, will be more visible than CSR in the developping world; - CSR-CFP relationship is stronger for firms from advanced economies than for firms from developing economies.	Moderator: measurement; contingency factors	N = 150,706; 119 effect sizes from 42 studies
Vishwanathan et al. (2020)	Strategic CSR	CFP	focal effect b = .06, p<0.05	- Strategic CSR is defined as those firm activities that appear to further some social good, while at the same time benefitting the firm financially by either enhancing its reputation, increasing stakeholder reciprocation, mitigating firm-specific risk, and/or improving innovation; - the four mechanisms combined (mediators) explain 20% of the CSR-CFP relationship.	Mediators: 1) enhanced firm reputation 2) stakeholder reciprocation 3) risk mitigation 4) improved innovation capacity	N = 402,863 observations; 344 empirical studies

Reference	IV	DV	Effect size	Key findings	Other variables	Sample
Al Jarah & Blend (2020)	CSR	Brand loyalty	r = .43	- CSR initiatives have a positive and medium effect on brand loyalty; - the benefits of CSR will automatically substantiated in the form of brand loyalty; - the medium magnitude between CSR and brand loyalty is moderated by several contextual factors that strengthen or weaken such a relationship; - the medium magnitude between CSR and brand loyalty is moderated by several contextual factors that strengthen or weaken such a relationship.	Moderator: cross-cultural variation; level of innovation; industry; product type; survey design; sampling	N = 28,495
Mingjun et al (2015)	CSR	Business performance	r = .158	- environmental CSR has a stronger impact than social CSR on business performance in Asian firms; - CSR practices has a stronger positive effect on opeational performance than on financial performance in Asian firms; - CSR importance in East Asia has not varied over the past 15 years; - several moderating issues explain significant variances in the effect size across studies, including economic development stage, firm size, organizational form, and measurement methods.	Moderators: economic development; ndustry setting; firm size; organizational setting	N = 3,320
Al Jarah et al. (2018)	CSR	RQ (satisfaction; trust; commitment)	r commiment = .56 r trust = .52 r satisfaction = .44	- a positive relationship between CSR and the three studied aspects of RQ is well established; however, the strength of studied relationships has revealed variations in magnitude. - customer commitment was affected by CSR (r = .56) the most, closely followed by customer trust (r = .52), while customer satisfaction (r = .44) was affected the least; - the result of metaregression shows that the economic development moderates only one relationship, CSR and trust.	Moderator: Heterogeneity of CSR	N = 27,805

Reference	IV	DV	Effect size	Key findings	Other variables	Sample
Al Jarah & Emeagwali (2017)	CSR	Behavioral Intention (revisit intentions; WOM; WTP; Loyalty)	r = .42	- the positive relationship between CSR and BI is well-established and has a large effect size (r = .42) - the repurchase/revisit intention was the most affected by CSR (r =.47) followed by loyalty intention (r = .41) - both word of mouth and willingness-to-pay intentions were less affected by CSR (r = .38, r = .37, respectively) - the result of meta-regression shows that both environmental context and industry type do not moderate the relationship between CSR and BI.	Moderators: environmental context and industry type	N = 34,942
Frooman (1997)	CSI (socially irresponsible behavior)	Shareholders' welfare	D = -.923	- firms engaging in socially irresponsible and illicit behavior, the effect on shareholder wealth is negative (wealth decrease), statistically significant (p<.001), and so substantial in size (D=-.932) - it also provides support for a moral position called enlightened self-interest, which prescribes that firms should act in a socially responsible manner to promote the shareholders' interests.		27 event studies
This study	CSR	CFP	Indirect effect between CSR and accounting-based FP: b = 0.106, p<0.05; CSR and stock performance: b = 0.066, p<0.05	- CSR has a significant and positive indirect effect on both accounting-based financial performance and stock performance. Brand equity and firm reputation positively mediate the relationship between CSR and accounting-based performance measured by profit metrics, while innovation and firm reputation mediate the association between CSR and stock performance. - the total combined effect from CSR to stock performance is insignificant, as direct insignificant effect from CSR to stock performance diminished the indirect effect.	Mediators: brand equity, firm reputation, innovation	291 effect sizs from 58 studies

Appendix 2. Selected empirical papers on CSR–brand equity linkage

Author	Year	Results
Wang	2010	Prior social performance has a positive effect on brand equity, but brand equity only impacts future social performance among very large firms. The positive effect of prior social performance on brand equity is amplified in smaller firms.
Torres, Bijmolt, Tribó, & Verhoef,	2012	CSR toward each of the stakeholder groups has a positive impact on global BE. In addition, global brands that follow local social responsibility policies in communities obtain strong positive benefits through the generation of BE, enhancing the positive effects of CSR toward other stakeholders, particularly customers.
Hur, Kim, & Woo	2014	The relationship between CSR and corporate brand equity is sequentially and fully mediated by corporate brand credibility and corporate reputation.
Nguyen. & Oyotode	2015	There is a positive relationship between changes in CSR perceptions and brand equity. Marketing capabilities positively and significantly ($p < .05$) moderate the changes in CSR-brand equity relationship.
Wang, Chen, Yu & Hsiao	2015	The findings indicate a significant negative effect on firm performance for the brand loyalty driver. The findings of structural equation modeling suggest that corporate social responsibility and brand equity positively affect firm performance.
Gherghina & Simionescu	2015	There is a positive and statistically significant relationship between CSR and firm performance as proxied by return on assets. There is no association between CSR and brand value.
Singh & Verma	2017	Firm's CSR activities have positive effect on its BE. However, brand awareness, brand image, brand loyalty and purchase intention mediate the CSR and BE
Mahabubur, Rodríguez-Serrano & Lambkin	2019	Corporate brand equity has a significant positive impact on market-based performance, measured by market share, as well as on financial performance, measured by Tobin's q. In addition, CSR plays a complementary role, positively moderating the relationship between corporate brand equity and firm performance. That is, there is a synergistic connection between brand equity and CSR which increases long-term value over and above the direct impact of corporate brand equity.
Basile	2019	Based upon a large-scale panel data set including 78 firms for the period of 2000–2014, the results show that diversity- and governance-related CSR have a positive effect on BE, employee-related CSR has a negative effect on BE and both product and employee dimensions play important roles in the relationships between other CSR dimensions and BE. These results have important implications for both theory and practice.
Bhattacharya, Good & Sardashti	2020	The findings empirically demonstrate that CSR initiatives during recessions are actually associated with increased perceptions of brand value. More specifically, during recessions, CSR initiatives such as charitable contributions provide a signal to customers of higher brand quality.
Cowan.& Guzman	2020	Consumer misbeliefs in sustainability affect domestic performance and brand equity. For equity, consumer perceptions, CSR signals, and sustainability signals contribute to brand equity.

Appendix 3. Selected empirical papers on CSR–innovation linkage

Author	Year	Results
Hull & Rothenberg	2008	Both innovation and the level of differentiation in the industry play the role of moderators for a positive relationship between corporate social performance and financial performance: corporate social performance most strongly affects performance in low-innovation firms and in industries with little differentiation.
Wagner	2010	The results point to a moderating role of family firms on the link between innovation with high social benefits and CSP.
Gallego-Álvarez, Prado-Lorenzo & García-Sánchez.	2011	The bidirectional relationship between CSR and innovation is negative. However, the effect of the sustainable practices undertaken by those companies listed on the Dow Jones Sustainability Index on innovative efforts is statistically less significant. It was also found that this type of investment takes three years to show its value added in CSR practices and that the relationship between innovation and corporate social responsibility practices is not the same in different sectors.
Chang, C.H.	2011	Corporate environmental ethics positively affects green product innovation and green process innovation. This study verifies that green product innovation mediates the positive relationship between corporate environmental ethics and competitive advantage, but green process innovation does not. Corporate environmental ethics can not only affect competitive advantage directly, but also influence it indirectly via green product innovation in the Taiwanese manufacturing industry.
Mahmoud, A. M.& Hinson, R.E.	2012	The results indicate that firms' degree of market orientation and CSR have significant impact on innovation, which then influences business performance. Furthermore, market orientation has direct significant effect on CSR, which tends to mediate the influence of market orientation on business performance.
Wang, Y.D., Jun, J., Qiao, Y. & Shi, L.	2014	Different types of eco-innovation have significant influences on environmental performance and competitiveness. Firm size has differing impacts on environmental performance and competitiveness, being significantly positively associated with the former and not with the latter. Environmental regulation creates a positive effect on both firms' environmental performance and competitiveness, while the implementation of environmental regulation only significantly affects a firm's environmental performance and not its competitiveness.
Costa, C., Lages, L.F. & Hortinha, P.	2015	While CSR contributes to enhance the impact of exploratory innovation on export performance, there is a detrimental impact on the effect of exploitative innovation on export performance..
Luo, X. & Du, S.	2015	There is a positive relationship between CSR and firm innovation which is stronger for firms with higher R&D investment and firms operating in more competitive.
Gallardo-Vázquez, D., Valdez-Juárez, L.E. & Castuera-Díaz, A.M.	2019	Competitive success, innovation, and performance mediate CSR's effect on reputation. The results show that innovation and performance are significant mediating variables in the relationship between CSR and reputation.
Ji, H., Xu, G., Zhou, Y. & Miao, Z.	2019	Proactive CSR promotes exploratory innovation; (2) reactive CSR promotes exploitative innovation; (3) government support strengthen the relationship between proactive CSR and exploratory innovation as well as the relationship between reactive CSR and exploitative innovation; (4) social support weaken the relationship between proactive CSR and exploratory innovation

Appendix 4. Selected empirical papers on CSR–firm reputation linkage

Author	Year	Results
Brammer, S.J. & Pavelin, S.	2006	We find reputation, derived from the assessments of managers and market analysts, to be determined by a firm's social performance, financial performance, market risk, the extent of long-term institutional ownership, and the nature of its business activities.
Rettab, B., Brik, A.B. & Mellahi, K.	2009	CSR has a positive relationship with all three measures of organisational performance: financial performance, employee commitment, and corporate reputation. These results reinforce the accumulating body of empirical support for the positive impact of CSR on performance and challenge the dominant assumption that, given the weak institutional framework in emerging economies, CSR activities drain resources and compromise firms' competitiveness.
Surroca, J., Tribo, J.A. & Waddock, S.	2010	There is no direct relationship between corporate responsibility and financial performance—merely an indirect relationship that relies on the mediating effect of a firm's intangible resources.
Melo, T. & Garrido-Morgado, A.	2011	The five dimensions of CSR have a significant impact on corporate reputation and this impact is moderated by the industry of the firm. The most salient dimensions were diversity of the work force – was positively relevant to eight of the nine industries; and product issues with a positive impact in five industries and negative in three.
Galbreath, J. & Shum, P.	2012	While CSR is linked to both reputation and customer satisfaction, reputation alone mediates the CSR–FP relationship. The results are interesting, suggesting that to reduce ambiguity surrounding the CSR–FP relationship scholars need to significantly expand studies that address moderating and mediating variables.
Zhu, Y., Sun, L.Y. & Leung, A.S.	2013	Ethical leadership moderated its own indirect effect on firm reputation via CSR. It had an indirect and positive effect on firm reputation through CSR when ethical leadership was strong but not when it was weak. Ethical leadership also moderated the indirect effect of CSR on firm performance via firm reputation. There was an indirect and positive effect of CSR when ethical leadership was strong but not when ethical leadership was weak.
El-Garaihy, W.H., Mobarak, A.K. & Albahussain, S.A.	2014	CSR as a strategic objective; the initiatives of (CSR) as a way to construct intangible assets such as customer satisfaction and corporate reputation.
Gallardo-Vázquez, D., Valdez-Juárez, L.E. & Castuera-Díaz, A.M.	2019	Competitive success, innovation, and performance mediate CSR's effect on reputation. The results show that innovation and performance are significant mediating variables in the relationship between CSR and reputation.
Yim, S., Bae, Y.H., Lim, H. & Kwon, J.	2019	The results identify the moderating role of MC in only the CSR-Corporate reputation link (but not in the Corporate reputation and CFP link), such that Corporate reputation plays a moderated mediation role in the CSR–CFP link.

Appendix 5. Review of the empirical papers used to collect effect sizes on each variable pair.

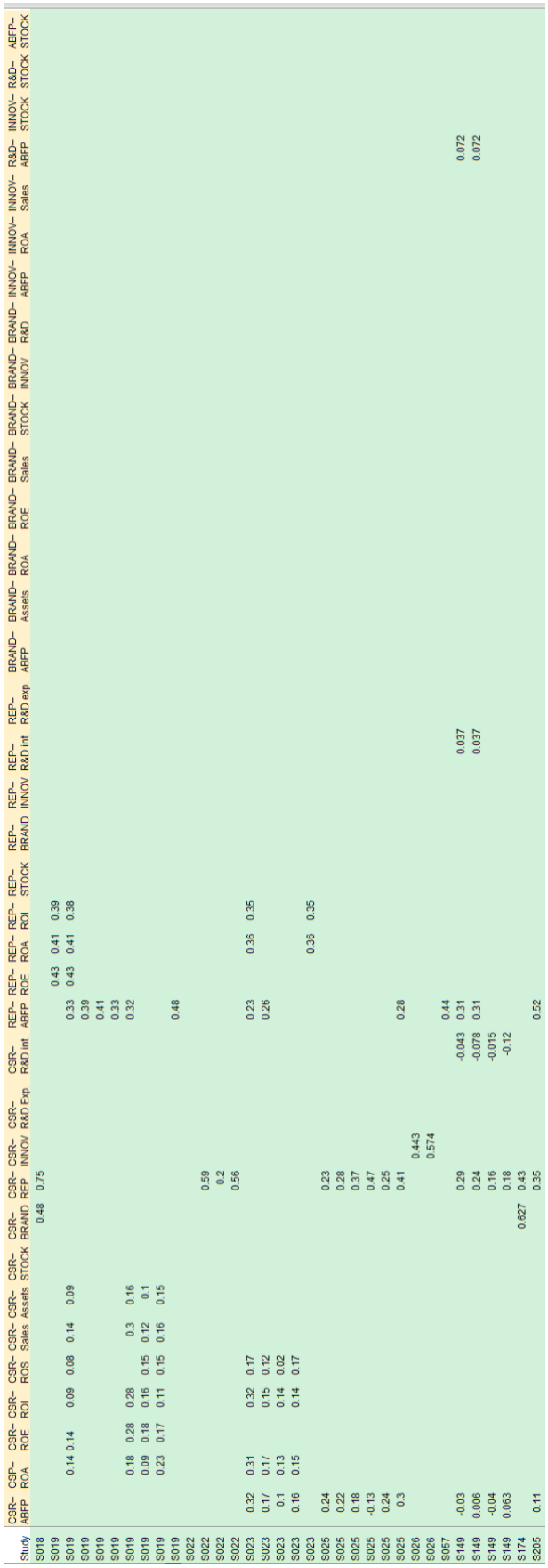
CSR – accounting-based FP	Kang, Germann, & Grewal (2016), Waddock & Graves (1997), Mithani (2017), Mishra & Modi (2013), Mishra & Suar (2010), Makni, Francoeur, & Bellavance (2009), Garcia-Castro, Ariño, & Canela (2010), Gherghina & Simionescu (2015), Kim, Kim, & Qian (2015), Wagner (2010), Jayachandran, Kalaignanam, & Eilert (2013), Ji, Xu, Zhou, & Miao (2019), Hong & Rim (2010), Wang (2009), Torres, Bijmolt, Tribó, & Verhoef (2012), Cowan & Guzman (2020), Yim, Bae, Lim, & Kwon (2019), Nguyen & Oyotode (2015), Wang, Chen, Yu, & Hsiao (2015), Melo & Garrido-Morgado (2012), Servaes & Tamayo (2013).
CSR – accounting-based FP (self-reported)	Saeidi (2015), Galbreath & Shum (2012), Rettab, Brik, & Mellahi (2009), Brammer & Pavelin (2006), Zhu, Sun, & Leung (2014), Xie, Jia, Meng, & Li (2017), Mahmoud & Hinson (2012), Khan, Yang, & Waheed (2018), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019).
CSR – stock performance	Kang, Germann, & Grewal (2016), Luo & Bhattacharya (2006), Mishra & Modi (2013), Garcia-Castro, Ariño, & Canela (2010), Kim, Kim, & Qian (2015), Wagner (2010), Peng & Yang (2014), Surroca, Tribo, & Waddock (2010), Hong & Rim (2010), Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Wang, Chen, Yu, & Hsiao (2015), Servaes & Tamayo (2013), Lenz, Wetzel, & Hammerschmidt (2016), Mishra & Modi (2016).
CSR – brand equity	Hur, Kim, & Woo (2014), Singh & Verma (2017), Gherghina & Simionescu (2015), Bhattacharya, Good, & Sardashti (2020), Wang (2009),

	Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Torres, Bijmolt, Tribó, & Verhoef (2012), Cowan & Guzman (2020), Nguyen & Oyotode (2015), Wang & Bansal (2012), Yang & Basile (2018), Dong, Wang, Jin, Qiao, & Shi (2014).
CSR – reputation	Hur, Kim, & Woo (2014), Ali, Danish, & Asrar-ul-Haq (2020), Rettab, Brik, & Mellahi (2009), Brammer & Pavelin (2006), Singh & Verma (2017), Zhu, Sun, & Leung (2014), El-Garaihy, Mobarak, & Albahussain (2014), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019), Peng & Yang (2014), Surroca, Tribo, & Waddock (2010), Jayachandran, Kalaignanam, & Eilert (2013), Yim, Bae, Lim, & Kwon (2019), Melo & Garrido-Morgado (2012).
CSR – innovation	Chang (2011), Costa, Lages, & Hortinha (2015), Mahmoud & Hinson (2012), El-Garaihy, Mobarak, & Albahussain (2014), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019), Wang, Jun, Qiao, & Shi (2014), Luo & Du (2015), Wagner (2010), Ji, Xu, Zhou, & Miao (2019).
CSR – R&D expenditure	Mithani (2017), Luo & Du (2015), Bhattacharya, Good, & Sardashti (2020), Ji, Xu, Zhou, & Miao (2019), Hull & Rothenberg (2008), Harjoto & Salas (2016).
CSR – R&D intensity	Brammer & Pavelin (2006), Xie, Jia, Meng, & Li (2017), Gallego-Álvarez, Prado-Lorenzo, & García-Sánchez (2011), Mishra & Modi (2013), Garcia-Castro, Ariño, & Canela (2010), Kim, Kim, & Qian (2015), Wagner (2010), Peng & Yang (2014), Surroca, Tribo, & Waddock (2010), Wang (2009), Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Torres, Bijmolt, Tribó, & Verhoef (2012), Yang &

	Basile (2018), Servaes & Tamayo (2013), Lenz, Wetzel, & Hammerschmidt (2016).
REP – accounting-based FP (self-reported)	Hur, Kim, & Woo (2014), Saeidi (2015), Galbreath & Shum (2012), Rettab, Brik, & Mellahi (2009), Fombrun & Shanley (1990), Brammer & Pavelin (2006), Zhu, Sun,, & Leung (2014), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019), Amores-Salvadó, Martin-de Castro, & Navas-López (2014).
Reputation – accounting-based FP	Jayachandran, Kalaignanam, & Eilert (2013), Melo & Garrido-Morgado (2012).
Reputation – stock performance	Peng & Yang (2014), Surroca, Tribo, & Waddock (2010), Yim, Bae, Lim, & Kwon (2019).
Reputation – innovation	El-Garaihy, Mobarak, & Albahussain (2014), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019), Amores-Salvadó, Martin-de Castro, & Navas-López (2014).
Reputation – R&D expenditure	Melo & Garrido-Morgado (2012).
Reputation – R&D intensity	Brammer & Pavelin (2006), Peng & Yang (2014), Nguyen & Oyotode (2015).
Brand equity – accounting-based FP	Gherghina & Simionescu (2015), Wang (2009), Torres, Bijmolt, Tribó, & Verhoef (2012), Yang & Basile (2018), Melo & Garrido-Morgado (2012), Wang & Sengupta (2016), Rego, Billett, & Morgan (2009), Mizik (2014).
Brand equity – stock performance	Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Wang & Sengupta (2016), Rego, Billett, & Morgan (2009).
Brand equity – innovation	Yao, Zeng, Sheng, & Gong (2019), Yao, Huang, & Li (2019).
Brand equity – R&D expenditure	Bhattacharya, Good, & Sardashti (2020), Harjoto & Salas (2016).

Brand equity – R&D intensity	Wang (2009), Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Torres, Bijmolt, Tribó, & Verhoef (2012), Nguyen & Oyotode (2015), Yang & Basile (2018), Wang & Sengupta (2016).
Innovation – accounting-based FP	Wagner (2010), Ji, Xu, Zhou, & Miao (2019).
Innovation – accounting-based (self-reported)	Mahmoud & Hinson (2012), Gallardo-Vázquez, Valdez-Juárez, & Castuera-Díaz (2019), Amores-Salvadó, Martin-de Castro, & Navas-López (2014).
R&D intensity – accounting-based FP (self-reported)	Brammer & Pavelin (2006).
R&D intensity – accounting-based FP	Mishra & Modi (2013), Torres, Bijmolt, Tribó, & Verhoef (2012), Nguyen & Oyotode (2015), Yang & Basile (2018), Servaes & Tamayo (2013), Wang & Sengupta (2016).
Innovation – stock performance	Garcia-Castro, Ariño, & Canela (2010), Wagner (2010), Peng & Yang (2014), Surroca, Tribo, & Waddock (2010).
R&D intensity – stock performance	Mishra & Modi (2013), Garcia-Castro, Ariño, & Canela (2010), Wagner (2010), Mahabubur, Rodríguez-Serrano, & Lambkin (2019), Servaes & Tamayo (2013), Lenz, Wetzel, & Hammerschmidt (2016), Wang & Sengupta (2016).
Accounting-based FP – stock performance	Hong & Rim (2010), Servaes & Tamayo (2013), Mishra & Modi (2016), Wang & Sengupta (2016), Rego, Billett, & Morgan (2009).

Appendix 6. Dataset with effect sizes for each variable pair.



Study	CSR–ABFP	CSP–ROA	CSR–ROE	CSR–ROI	CSR–ROS	CSR–Sales	CSR–Assets	CSR–STOCK	CSR–BRAND	CSR–REP	CSR–INNOV	CSR–R&D Exp.	CSR–R&D int.	REP–ABFP	REP–ROE	REP–ROA	REP–ROI	REP–STOCK	REP–BRAND	REP–INNOV	REP–R&D int.	REP–R&D exp.	BRAND–ABFP	BRAND–Assets	BRAND–ROA	BRAND–ROE	BRAND–Sales	BRAND–STOCK	BRAND–INNOV	BRAND–R&D	INNOV–ABFP	INNOV–ROA	INNOV–Sales	R&D–ABFP	INNOV–STOCK	R&D–STOCK	ABFP–STOCK
S018									0.48	0.75																												
S019															0.43	0.41	0.39																					
S019		0.14	0.14	0.09	0.08	0.14	0.09							0.33	0.43	0.41	0.38																	0.072			
S019														0.39																				0.072			
S019														0.41																								
S019														0.33																								
S019		0.18	0.28	0.28		0.3	0.16							0.32																							
S019		0.09	0.18	0.16	0.15	0.12	0.1																														
S019		0.23	0.17	0.11	0.15	0.16	0.15																														
S019														0.48																							
S022										0.59																											
S022										0.2																											
S022										0.56																											
S023	0.32	0.31		0.32	0.17									0.23		0.36	0.35																				
S023	0.17	0.17		0.15	0.12									0.26																							
S023	0.1	0.13		0.14	0.02																																
S023	0.16	0.15		0.14	0.17																																
S023																0.36	0.35																				
S025	0.24									0.23																											
S025	0.22									0.28																											
S025	0.18									0.37																											
S025	-0.13									0.47																											
S025	0.24									0.25																											
S025	0.3									0.41				0.28																							
S026											0.443																										
S026											0.574																										
S057														0.44																							
S149	-0.03									0.29			-0.043	0.31							0.037													0.072			
S149	0.006									0.24			-0.078	0.31							0.037													0.072			
S149	-0.04									0.16			-0.015																								
S149	0.063									0.18			-0.12																								
S174									0.627	0.43																											
S205	0.11									0.35				0.52																							

Study	CSR–ABFP	CSP–ROA	CSR–ROE	CSR–ROI	CSR–ROS	CSR–Sales	CSR–Assets	CSR–STOCK	CSR–BRAND	CSR–REP	CSR–INNOV	CSR–R&D Exp.	CSR–R&D int.	REP–ABFP	REP–ROE	REP–ROA	REP–ROI	REP–STOCK	REP–BRAND	REP–INNOV	REP–R&D int.	REP–R&D exp.	BRAND–ABFP	BRAND–Assets	BRAND–ROA	BRAND–ROE	BRAND–Sales	BRAND–STOCK	BRAND–INNOV	BRAND–R&D	INNOV–ABFP	INNOV–ROA	INNOV–Sales	R&D–ABFP	INNOV–STOCK	R&D–STOCK	ABFP–STOCK
S249											0.056																										
S249											0.194																										
S249											0.179																										
S284		0.422			0.38	0.08							0.115																								
S324	0.351										0.602									0.354										0.427							
S335										0.35	0.626																										
S335										0.71	0.382																										
S335										0.77	0.402																										
S335										0.37	0.346																										
S336									0.627	0.43																											
S341	0.256																																				
S342	0.25									0.63	0.585			0.43						0.705										0.424							
S349											0.316																										
S349											0.349																										
S349											0.357																										
S350														0.39						0.136										0.084							
S011		0.07						0.0059																													
S011								0.006																													
S012		0.18	0.09			-0.01	-0.08																														
S012		0.130	0.09				0.08																														
S024																																					
S024								0.140																													
S024								0.130																													
S037						0.13	0.19					0.07																										
S037						0.04	0.1					0.07																										
S038													-0.037																								
S044											0.152																										
S044											0.233	0.008																									
S077		0.06						0.080					0.16																					-0.23			0.01	

Study	CSR–ABFP	CSP–ROA	CSR–ROE	CSR–ROI	CSR–ROS	CSR–Sales	CSR–Assets	CSR–STOCK	CSR–BRAND	CSR–REP	CSR–INNOV	CSR–R&D Exp.	CSR–R&D int.	REP–ABFP	REP–ROE	REP–ROA	REP–ROI	REP–STOCK	REP–BRAND	REP–INNOV	REP–R&D int.	REP–R&D exp.	BRAND–ABFP	BRAND–Assets	BRAND–ROA	BRAND–ROE	BRAND–Sales	BRAND–STOCK	BRAND–INNOV	BRAND–R&D	INNOV–ABFP	INNOV–ROA	INNOV–Sales	R&D–ABFP	INNOV–STOCK	R&D–STOCK	ABFP–STOCK
S086		0.41				0.05																															
S097		0.09	0.17																																		
S097		0.04	0.12																																		
S128		0.1	0.09										0.1																					-0.07	0.19		
S128								0.030																												0.19		
S128								0.030																											-0.01	0.06		
S128																																				0.06		
S209	0.263	0.263	0.1						0.103													0.352		0.352	0.08												
S209	0.104																					0.08															
S209	0.284																					0.24															
S210		0.12											-0.18																								
S210								0.070																													
S221						0.02					0.7		0.04																					0.02			
S221								0.150																													
S223								0.070		0.01			0.08					0.070			0.01														-0.09	0.22	
S223								0.070		0.1			0.08					0.070																		0.28		
S224										0.41				0.28																						0.28		
S225	0.3								0.419			0.231																									
S239		-0.019									0.164	0.317																									
S240											0.063																										
S240		0.105									0.126																						0.035				
S240											0.158																						0.001				
S256								0.026																													0.007
S256						0.49		0.007																													-0.002
S289	0.07	0.01				0.24	0.07		0.2				0.17									0.04	0.04	0.02		0.21			0.13								
S289	0.24																					0.21														
S289	0.01																					0.02														
S290									0.11				0.22																0.1								
S290								0.030																			0.03							0.28		
S293																								0.1						0.03						
S293		0.07							0.11				0.13																0.05								

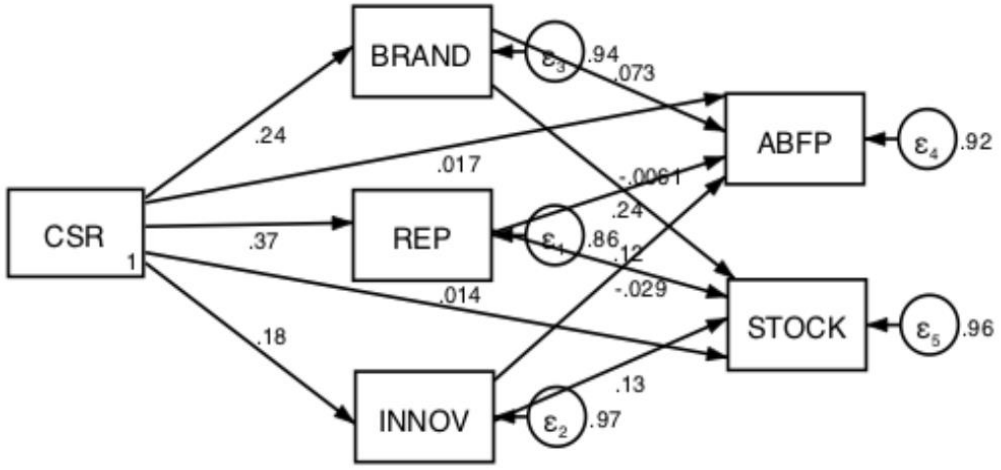
Study	CSR–ABFP	CSP–ROA	CSR–ROE	CSR–ROI	CSR–ROS	CSR–Sales	CSR–Assets	CSR–STOCK	CSR–BRAND	CSR–REP	CSR–INNOV	CSR–R&D Exp.	CSR–R&D int.	REP–ABFP	REP–ROE	REP–ROA	REP–ROI	REP–STOCK	REP–BRAND	REP–INNOV	REP–R&D int.	REP–R&D exp.	BRAND–ABFP	BRAND–Assets	BRAND–ROA	BRAND–ROE	BRAND–Sales	BRAND–STOCK	BRAND–INNOV	BRAND–R&D	INNOV–ROA	INNOV–Sales	R&D–ABFP	INNOV–STOCK	R&D–STOCK	ABFP–STOCK
S293		0.18							0.25				0.28											0.1						0.05				0.03			
S293		0.1							0.2				0.09																								
S293		0.09							0.13				0.13																								
S294	0.16								0.42																												
S294	0.24								0.23																												
S294	0.15								0.2																												
S294	0.16								0.41																												
S294	0.05								0.2																												
S294	0.18								0.18																												
S294	0.04								0.21																												
S294									0.24																												
S294									0.16																												
S294									0.17																												
S294									0.21																												
S294									0.19																												
S294									0.14																												
S294									0.16																												
S294									0.17																												
S294									0.37																												
S297		0.158								0.22																												
S297								0.201										0.286																				
S301	0.051								0.092												-0.065									0.293				0.097				
S305												-0.166																										
S337		0.39	0.5						0.35																												
S337		0.07	-0.06																																		
S337		-0.03	-0.03																																		
S337		-0.02	-0.02																																		
S337								0.190																													
S337								0.020																													
S337																																				
S337								0.010																													

Study	CSP-ABFP	CSP-ROA	CSP-ROE	CSP-ROI	CSR-ROS	CSR-Sales	CSR-Assets	CSR-STOCK	CSR-BRAND	CSR-REP	CSR-INNOV	CSR-R&D Exp.	CSR-R&D int.	REP-ABFP	REP-ROE	REP-ROA	REP-ROI	REP-STOCK	REP-BRAND	REP-INNOV	REP-R&D int.	REP-R&D exp.	BRAND-ABFP	BRAND-Assets	BRAND-ROA	BRAND-ROE	BRAND-Sales	BRAND-STOCK	BRAND-INNOV	BRAND-R&D	INNOV-ABFP	INNOV-ROA	INNOV-Sales	R&D-ABFP	INNOV-STOCK	R&D-STOCK	ABFP-STOCK
S338									0.03				0.34																									
S338																							0.01		0.01					0.14					-0.04		
S338									0.11				0.32												0.01					0.14								
S338									0.08				0.16																						0.07			
S338									0.27				-0.05																									
S345									0.350			0.180																										
S345									0.320			-0.110																		0.170								
S346		0.12									0.14						0.19					-0.01																
S348																				0.126																		
S348																				0.245																		
S351																				0.078																		
S351																				0.402																		
S357							0.044	0.152					0.041																						-0.056		0.298	-0.682	
S357							0.023	0.160					0.051																										
S357								0.161					0.07																										
S358								0.060					-0.01																										
S359								0.019																													0.25		
S361																									0.04				0.02					0.3		0.28	0.044	
S362																									0.141				0.079								0.59	
S363																									0.203			0.159									0.172	
S364																0.2		0.29																			0.093	
S364																		0.37																				
S364																		0.24																				
S364																0.21		0.31																				
S364																																						
Sample	33	32	13	7	8	12	11	23	35	27	21	8	26	18	2	9	4	3	0	1	8	1	8	1	2	3	4	10	3	2	1	10	5	10	7
ber of ef	116										55			33						8	20							14							15		
verage E	survey	54		seconc	62									survey	25	seconc	8			innovation only	survey	0	0.1315	0	secondary	20			0.043	0.21275								0.1174
63								0.079	0.24337	0.367	0.3337	0.075	0.078615	0.345				0.142000	0	0.3983	0.1505	average su									0.31167				0.14853		
	average	0.142									innovation + RnD		0.175473	averag	0.372					Innovati		average se	0.12085								Innovation + R&D+	16	0.0835	innovatic	0.078	
	average s	0.1676									innovation only		0.333657	averag	0.261																Innovation + R&D :	5	0.2158			
	average s	0.1198																													Innovation + R&D :	11	0.023363636			
																															Innovation + all FF	3	0.311666667			
																															Innovation + surve	3	0.311666667			
																															Innovation + secor	0	0			

Notes: light green - survey-based financial data

CSR	corporate social responsibility	R&D Exp	R&D Expenditures
STOCK	Stock performance	R&D int.	R&D intensity
BRAND	Brand Equity	ABFP	Accounting-based financial performance
REP	Firm Reputation		
INNOV	Innovation		

Appendix 7. Model 1a




```
25 . estat gof, stats (all)
```

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(4)	**13.623**	model vs. saturated
p > chi2	**0.009**	
chi2_bs(15)	**115.842**	baseline vs. saturated
p > chi2	**0.000**	
Population error		
RMSEA	**0.091**	Root mean squared error of approximation
90% CI, lower bound	**0.041**	
upper bound	**0.146**	
pclose	**0.082**	Probability RMSEA <= 0.05
Information criteria		
AIC	**4878.704**	Akaike's information criterion
BIC	**4937.477**	Bayesian information criterion
Baseline comparison		
CFI	**0.905**	Comparative fit index
TLI	**0.642**	Tucker-Lewis index
Size of residuals		
SRMR	**0.047**	Standardized root mean squared residual
CD	**0.200**	Coefficient of determination

```
26 .
   end of do-file

27 . do "/var/folders/r5/_sgw8ztd4h3f4bpf03xsbh1r0000gn/T//SD00802.000000"

28 . *** Estimation of direct-indirect-total effects
29 . estat teffects
```

Direct effects

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	.366593	.0545399	6.72	0.000	.2596967	.4734893
INNOV						
CSR	.175473	.0577115	3.04	0.002	.0623606	.2885854
BRAND						
CSR	.243371	.0568585	4.28	0.000	.1319304	.3548116
ABFP						
REP	.2447122	.0612752	3.99	0.000	.124615	.3648094
INNOV	-.0288792	.0579919	-0.50	0.618	-.1425413	.0847829
BRAND	.0727491	.0590416	1.23	0.218	-.0429703	.1884686
CSR	.0174217	.0620684	0.28	0.779	-.1042302	.1390736
STOCK						
REP	.1184827	.0624954	1.90	0.058	-.004006	.2409714
INNOV	.1292037	.0591467	2.18	0.029	.0132782	.2451292
BRAND	-.0060629	.0602173	-0.10	0.920	-.1240867	.111961
CSR	.0144038	.0633044	0.23	0.820	-.1096705	.1384782

Indirect effects

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	0	(no path)				
INNOV						
CSR	0	(no path)				
BRAND						
CSR	0	(no path)				
ABFP						
REP	0	(no path)				
INNOV	0	(no path)				
BRAND	0	(no path)				
CSR	.1023473	.0294761	3.47	0.001	.0445752	.1601194
STOCK						
REP	0	(no path)				
INNOV	0	(no path)				
BRAND	0	(no path)				
CSR	.0646312	.0282007	2.29	0.022	.0093588	.1199036

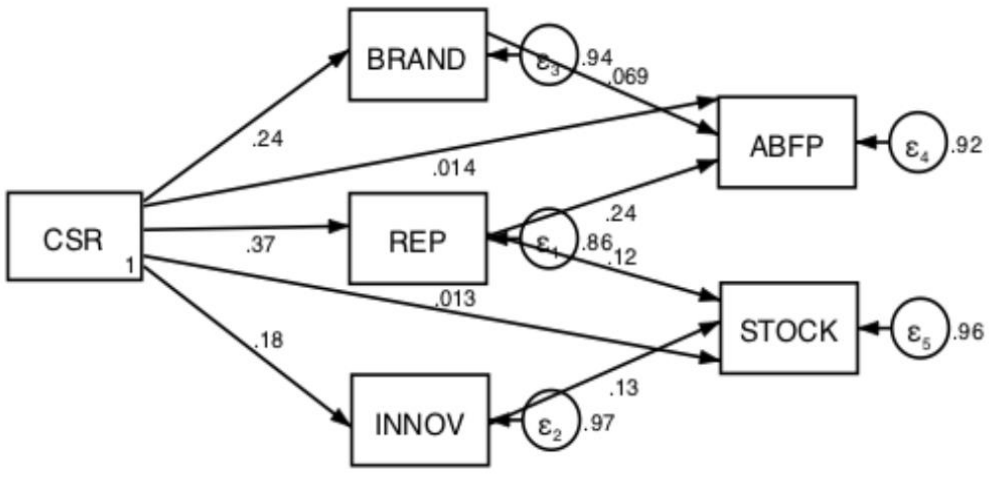
Total effects

	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	.366593	.0545399	6.72	0.000	.2596967	.4734893
INNOV						
CSR	.175473	.0577115	3.04	0.002	.0623606	.2885854
BRAND						
CSR	.243371	.0568585	4.28	0.000	.1319304	.3548116
ABFP						
REP	.2447122	.0612752	3.99	0.000	.124615	.3648094
INNOV	-.0288792	.0579919	-0.50	0.618	-.1425413	.0847829
BRAND	.0727491	.0590416	1.23	0.218	-.0429703	.1884686
CSR	.119769	.0581351	2.06	0.039	.0058263	.2337117
STOCK						
REP	.1184827	.0624954	1.90	0.058	-.004006	.2409714
INNOV	.1292037	.0591467	2.18	0.029	.0132782	.2451292
BRAND	-.0060629	.0602173	-0.10	0.920	-.1240867	.111961
CSR	.079035	.0583706	1.35	0.176	-.0353692	.1934392

```
30 .
   end of do-file

31 .
```

Appendix 8. Model 1b. The main one



Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(6)	13.881	model vs. saturated
p > chi2	0.031	
chi2_bs(15)	115.842	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.067	Root mean squared error of approximation
90% CI, lower bound	0.019	
upper bound	0.114	
pclose	0.227	Probability RMSEA <= 0.05
Information criteria		
AIC	4874.962	Akaike's information criterion
BIC	4926.388	Bayesian information criterion
Baseline comparison		
CFI	0.922	Comparative fit index
TLI	0.805	Tucker-Lewis index
Size of residuals		
SRMR	0.046	Standardized root mean squared residual
CD	0.200	Coefficient of determination

```
15 .
   end of do-file

16 . do "/var/folders/r5/_sgw8ztd4h3f4bpf03xsbh1r0000gn/T//SD00802.000000"

17 . *** Estimation of direct-indirect-total effects
18 . estat teffects
```

Direct effects

	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	.366593	.0545399	6.72	0.000	.2596967	.4734893
INNOV						
CSR	.175473	.0577115	3.04	0.002	.0623606	.2885854
BRAND						
CSR	.243371	.0568585	4.28	0.000	.1319304	.3548116
ABFP						
REP	.2422976	.0611091	3.97	0.000	.122526	.3620692
BRAND	.0691284	.0586172	1.18	0.238	-.0457592	.184016
CSR	.0141205	.0617397	0.23	0.819	-.1068871	.1351281
STOCK						
REP	.1177848	.0621109	1.90	0.058	-.0039503	.2395199
INNOV	.1284703	.0586976	2.19	0.029	.0134252	.2435155
CSR	.0133128	.0623712	0.21	0.831	-.1089325	.1355581

Indirect effects

	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	0	(no path)				
INNOV						
CSR	0	(no path)				
BRAND						
CSR	0	(no path)				
ABFP						
REP	0	(no path)				
BRAND	0	(no path)				
CSR	.1056485	.0285919	3.70	0.000	.0496094	.1616875
STOCK						
REP	0	(no path)				
INNOV	0	(no path)				
CSR	.0657222	.0260124	2.53	0.012	.0147389	.1167055

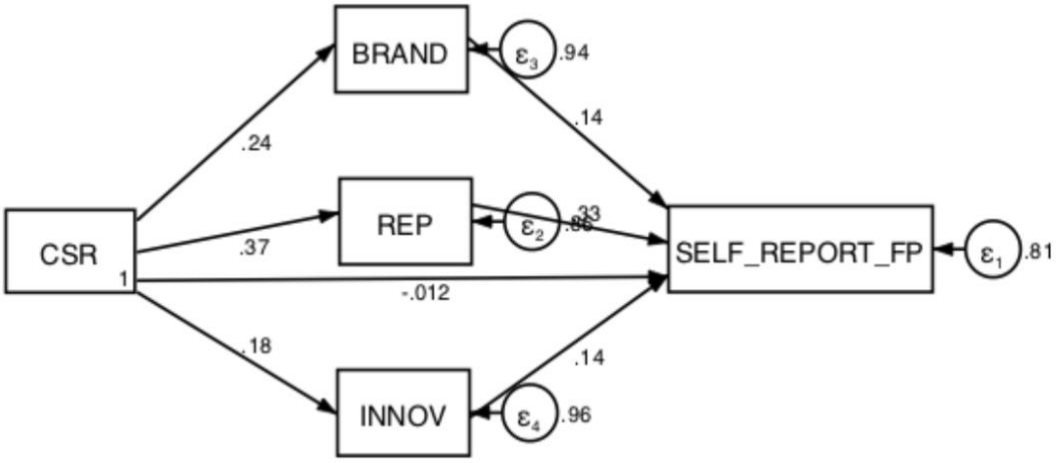
Total effects

	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
REP						
CSR	.366593	.0545399	6.72	0.000	.2596967	.4734893
INNOV						
CSR	.175473	.0577115	3.04	0.002	.0623606	.2885854
BRAND						
CSR	.243371	.0568585	4.28	0.000	.1319304	.3548116
ABFP						
REP	.2422976	.0611091	3.97	0.000	.122526	.3620692
BRAND	.0691284	.0586172	1.18	0.238	-.0457592	.184016
CSR	.119769	.0580901	2.06	0.039	.0059145	.2336235
STOCK						
REP	.1177848	.0621109	1.90	0.058	-.0039503	.2395199
INNOV	.1284703	.0586976	2.19	0.029	.0134252	.2435155
CSR	.079035	.0583609	1.35	0.176	-.0353503	.1934203

```
19 .
   end of do-file

20 .
```

Appendix 9. Model 2




```
30 . estat gof, stats (all)
```

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(3)	8.732	model vs. saturated
p > chi2	0.033	
chi2_bs(10)	106.733	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.093	Root mean squared error of approximation
90% CI, lower bound	0.023	
upper bound	0.167	
pclose	0.125	Probability RMSEA <= 0.05
Information criteria		
AIC	3083.221	Akaike's information criterion
BIC	3120.700	Bayesian information criterion
Baseline comparison		
CFI	0.941	Comparative fit index
TLI	0.802	Tucker-Lewis index
Size of residuals		
SRMR	0.053	Standardized root mean squared residual
CD	0.200	Coefficient of determination

```
31 .
   end of do-file

38 . estat teffects

   Direct effects
```

	OIM				
	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]

Structural						
SELF_REPOR~P						
REP	.3255759	.0657301	4.95	0.000	.1967472	.4544046
BRAND	.1448224	.0633342	2.29	0.022	.0206898	.2689551
INNOV	.1443669	.0622081	2.32	0.020	.0224412	.2662926
CSR	-.0123389	.066581	-0.19	0.853	-.1428353	.1181575
REP						
CSR	.366593	.0623029	5.88	0.000	.2444815	.4887045
BRAND						
CSR	.243371	.0649515	3.75	0.000	.1160683	.3706737
INNOV						
CSR	.175473	.0659259	2.66	0.008	.0462605	.3046855

Indirect effects

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
SELF_REPOR~P						
REP	0	(no path)				
BRAND	0	(no path)				
INNOV	0	(no path)				
CSR	.1799319	.0369111	4.87	0.000	.1075875	.2522763
REP						
CSR	0	(no path)				
BRAND						
CSR	0	(no path)				
INNOV						
CSR	0	(no path)				

Total effects

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
SELF_REPOR~P						
REP	.3255759	.0657301	4.95	0.000	.1967472	.4544046
BRAND	.1448224	.0633342	2.29	0.022	.0206898	.2689551
INNOV	.1443669	.0622081	2.32	0.020	.0224412	.2662926
CSR	.167593	.0652046	2.57	0.010	.0397943	.2953917
REP						
CSR	.366593	.0623029	5.88	0.000	.2444815	.4887045
BRAND						
CSR	.243371	.0649515	3.75	0.000	.1160683	.3706737
INNOV						
CSR	.175473	.0659259	2.66	0.008	.0462605	.3046855

```
39 .
end of do-file
```