

Assurance on CSR reports: impact on the credibility perceptions of non-financial information by bank directors

Assurance on
CSR reports

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Abstract

Purpose – This paper aims to clarify whether assurance on non-financial corporate social responsibility (CSR) reports impacts the perceptions and decisions of banks as capital providers. The authors investigate the effects of the type of assurance provider and the level of assurance provided on decisions by banks to grant credit, make their own personal investments or recommend share purchases to their customers. The study aims to expand the domain of assurance on CSR reports (CSRR) by taking up a call by Cohen and Simnett (2015), who ask for behavioral research on how non-financial report's intended users interpret and react to assurance.

Design/methodology/approach – The paper is based on an experiment case on a fictitious company with a $2 \times 2 + 1$ between-subjects design. To overcome concerns regarding external validity and to prove results in a real-world setting, the authors selected German bank directors as subjects due to the extremely high relevance of banks to the German economy. The authors investigated the perceptions of 69 bank directors and analyzed the influence of CSR assurance on their decisions.

Findings – The findings suggest that assurance positively influences confidence in CSRR and that, consequently, bankers are more likely to make favorable decisions toward the reporting companies, such as approving applications for credit, investing themselves in the company or recommending the purchase of shares to their clients. These effects are stronger when an accounting firm provides the assurance and when the assurance level is reasonable rather than limited.

Research limitations/implications – The arguments presented are, strictly speaking, limited to the case in the experiment and the views held by the bank directors at the time the authors sent out the questionnaires. Moreover, the cell sizes are quite small. Nevertheless, the authors were able to find highly significant results.

Practical implications – The main implication of the paper is that the purchase of CSRR assurance services has a positive effect on bank directors' perceptions and decisions. They favor the provision of such services by accounting firms and they prefer a reasonable assurance level. Thus, it can be concluded that bank directors perceive quality differences between assurance providers, are able to recognize the difference between reasonable and limited assurance and that the related information is relevant for their decisions.



Originality/value – This paper fulfils an identified need to study the influence of CSRR assurance on decisions by bank directors. The observation of a high decisions-usefulness of CSRR assurance suggests that regulators should consider mandating some form of assurance on non-financial reports throughout the EU member states.

Keywords Assurance level, Assurance provision, Bank directors, Corporate social responsibility reports

Paper type Research paper

1. Introduction

Nowadays, companies are being held to account for the social and environmental consequences of their activities, and, as a result, corporate social responsibility (CSR) has become an inescapable priority for business leaders (Porter and Kramer, 2006). Research on the influence of CSR over a firm's economic output shows some support for a positive impact through positive correlations between CSR reports (CSRR) and access to finance (Cheng *et al.*, 2014), lower equity capital costs (Dhaliwal *et al.*, 2011) and lower banks loan costs (Goss and Roberts, 2011). The European Union (EU) has also recognized the need for managing change toward a sustainable global economy and has established minimum legal requirements for non-financial reporting, thereby mandates CSR reporting, and in doing so raises the profile of CSR reporting within organizations. EU Directive 2014/95 requires public-interest entities with more than 500 employees during a given financial year to disclose a non-financial statement. At a minimum, this statement must provide information on specific environmental, social, employee, human rights, anti-corruption and bribery matters (European Parliament and Council of the European Union, 2014).

Two aspects of the EU Directive 2014/95 are particularly interesting in terms of how stakeholders perceive the credibility of the non-financial information a company presents. Credibility requires that the reports are reliable, i.e. they must be prepared in a way that they can be subject to examination and balanced, i.e. they must reflect all material positive and negative aspects (Farooq and de Villiers, 2020). First, it only mandates that an auditor must check to ensure that the required non-financial statement has been provided. Second, member states may, at their discretion, mandate that an independent assurer verifies the information provided within the non-financial statement. Such as most member states, Germany implemented EU Directive 2014/95 on April 11, 2017, via the CSR-Richtlinie-Umsetzungsgesetz (Law on the Implementation of the EU Directive 2014/95). In its implementation, Germany did not mandate independent assurance; thus, providing external verification of the non-financial information disclosed is entirely voluntary (Deutscher Bundestag, 2017). However, externally verifying this information has the potential to increase its credibility, augment the social legitimacy or organizations and generate greater confidence among stakeholders (Power, 1997; Gilbert and Rasche, 2007; Boiral, 2013). This seems especially to be true in a scenario with mandatory CSR reporting in which organizations are more likely to demand external assurance of their CSRR (Ackers and Eccles, 2015). Further, stakeholders are becoming increasingly aware that some of the non-financial aspects of a company can be highly relevant to its financial performance and to the creation of value (Reimsbach *et al.*, 2018). Demand for greater disclosure of these issues is therefore growing, and G250 companies seem to be responding in kind. According to a recent report by KPMG, 67% of G250 companies have sought to independently assure their CSR data (KPMG, 2017). This resonates well with the question of whether such assurance is beneficial to a company's stakeholders. In this context, the perceptions of bankers as capital providers are of interest. Do they also find external assurance beneficial? Then, if so, how do these benefits manifest?

In this paper, we examine whether assurance over CSRR impacts the perceptions and decisions of banks as capital providers. More specifically, we investigate the effects of the type of assurance provider and the level of assurance provided on decisions by banks to grant credit, make their own personal investments or recommend share purchases to their customers. In the German environmental setting, debt financing is more important than in Anglo-Saxon countries (Detzer, 2014), banks are important providers of debt but also of equity capital, and they have insights and influence via representatives on supervisory boards. We apply an experimental research design. In an experiment, independent variables are manipulated and dependent variables are measured; any extraneous variables are controlled. Thus, the results allow the researcher to claim causation. Participants do not know the research objectives and the researchers have little contact with them and cannot impose their own opinions. As a consequence, the data are more valid and less biased. Moreover, an experiment can be performed when archival data is not available. In undertaking this research, we are also taking up a call by Cohen and Simnett (2015) who ask for behavioral research on how a non-financial report's intended users interpret and react to assurance. Bank directors were chosen as our subjects of study because bankers reflect different interest groups, including creditors, investment consultants and private and professional investors.

In general, our findings support our hypotheses in that bank directors rely more on a CSRR that has been assured than one that has not; and that assured CSRR increase the likelihood of credit approvals, investment recommendations and their own investment decisions. Additionally, perceptions toward CSRR assurance differ by the type of assurance provider and the level of assurance provided as do the decisions made as a consequence. Assurance provided by an accounting firm has a stronger positive impact than assurance from the technical control board and more importance is attached to reasonable assurance than limited assurance, which reduces the risk of engagement to the lowest level of acceptable risk (ISAE 3000.12).

Despite the voracity of the discussion by various national and supranational organizations over whether CSRR assurance should be mandatory or voluntary, research is scarce. Only a handful of experimental studies on the effects of assuring CSRR have been conducted in the USA, Australia and the UK, whereas there is a lack of experimental findings from Continental European countries. There, only some archival research has been done, but mainly in Spain. As noted by Abernathy *et al.* (2017), the influence of the type of provider, the level of assurance provided and the perceptions of capital providers are all under-researched areas. Cohen and Simnett (2015, p. 71) describe it as a "relatively under-researched but potentially rich and fruitful area for future research." We respond to this statement by investigating the decision-usefulness of CSRR assurance for a sample of German bank directors. In particular, we show the influence of CSRR assurance on decisions by bank directors after the implementation of the EU Directive 2014/95.

Bank directors are typically highly knowledgeable people and notoriously difficult to attract for research studies. As subjects of study, bank directors are of particular relevance as creditors, investors and financial intermediaries. Thus, our results provide insights into the impact of CSRR assurance on the decisions of banks as capital providers. Prior experimental research did not investigate the impact of CSRR assurance on the perceptions and decisions of bank directors and highly knowledgeable subjects may react differently on assured reports. To the best of our knowledge, this is the first study to try and generate new insights into the way assurance on CSRR is perceived as the adoption of the EU Directive 2014/95 which harmonized CSRR within the EU, made it mandatory, and thus, changed the environmental setting. Furthermore, recent scandals may have eroded trust in assurance

providers and this potentially reduces the impact of assurance on credibility. In addition, this research contributes to the literature on the theory of professions and the theory of source credibility by using both in a novel context. The findings of this study should be of interest to national and supranational regulators and standard setters, and in particular to their deliberations on whether or not to make CSRR assurance mandatory.

The paper proceeds as follows. Section 2 provides some background information, an overview of prior research and the hypotheses. Section 3 describe our experimental case and the subjects participating in the study, followed by the empirical results. Finally, Section 4 summarizes the main findings, discusses their implications, points to the study's limitations and identifies areas for future research.

2. Background, prior research and development of hypotheses

2.1 Assurance provision

Legitimacy and signaling theory may explain why some stakeholders positively perceive the voluntary assurance of CSRR. “[I]t is probable that legitimacy theory is the most widely used theory to explain environmental and social disclosures” (Campbell *et al.*, 2003, p. 559). Legitimacy theory explains that companies assume an implicit social contract between themselves and society, which, in turn, encourages them to comply with certain norms and values (Cuganesan *et al.*, 2010).

Thus, legitimacy theory has come to stress how corporate managers react to community expectations (Deegan, 2019): managers will implement a set of legitimating strategies and firms will engage in CSR reporting because the company needs to legitimate its activities (Fernando and Lawrence, 2014; Patten, 2019). The set of legitimating strategies usually consists of regulative, cultural and normative elements that essentially provide management with a corporate governance instrument. Complying with the law has been referred to as “pragmatic legitimacy,” whereas complying with the prevailing cultural expectations of the time has been linked to what is called “cognitive legitimacy” while complying with the normative expectations of a particular corporate environment has been claimed as a way of generating “moral legitimacy” (Deegan, 2019). Externally-available company disclosures, such as those found in CSRR, reflect a pragmatic approach to legitimacy as the disclosures satisfy the perceived needs of specific stakeholder groups (e.g. shareholders or employees) (Dumay *et al.*, 2015). Managers are aware of this pragmatic approach to legitimacy and their decision to assure a CSRR can be seen as a corporate governance instrument for legitimizing aspects of a company's sustainability (Faisal *et al.*, 2012; Velte and Stawinoga, 2017). However, they know that, over the long-term, they cannot afford to ignore any of these three forms of legitimacy (Deegan, 2019).

Obtaining third-party assurance can be a valuable tool for addressing concerns regarding the credibility of information provided in CSRR (Cho *et al.*, 2014; Simnett *et al.*, 2009). Hence, an important aspect of CSRR assurance lies in its ability to enhance the credibility of the reported information and thereby legitimate the CSR efforts of the firm (Simnett *et al.*, 2009; Kolk and Perego, 2010). In this context, CSRR assurance is the beginning of a process that allows a company to assess its performance in relation to the expectations of society (Deegan, 2002). In terms of legitimacy theory, CSRR assurance can be viewed as a managerial device that directs various social pressures away from a company.

While many adopt legitimacy theory as a theoretical perspective for explaining why stakeholders perceive voluntary CSRR assurance positively, some theorists consider that legitimacy is influenced by the actions set by the management to signal the credibility of a company's reported information. Signaling theory views firms as pools of information that stakeholders are not aware of, and reporting as a way for firms to reduce information

asymmetry (Connelly *et al.*, 2011). While CSRR can signal some of these hidden characteristics, CSRR assurance can provide insights into the actions of managers, signaling the credibility of the reported information (Ruhnke and Gabriel, 2013; Alon and Vidovic, 2015). In using signaling theory to examine stakeholder confidence in the credibility of CSRR, some studies postulate that there could be possible competitive advantages for a company, such as a better access to finance or reduced cost of capital (Dhaliwal *et al.*, 2011; Cheng *et al.*, 2014; Braam and Peeters, 2018).

In fact, archival research that finds and does not find support for the benefits of external CSRR assurance is relatively evenly divided. In the positively correlated camp, an empirical study conducted by Moroney *et al.* (2012) using data from Australian listed companies shows that the quality of voluntary environmental disclosures is significantly greater in assured reports than in non-assured reports. Using CSR restatements as a proxy with a worldwide sample, Ballou *et al.* (2018) demonstrate that CSRR assurance improves CSRR quality. Likewise, Michelon *et al.* (2019) find that voluntary assurance of sustainability reports is associated with increased sustainability restatements. Birkey *et al.* (2016) reveal that assurance on CSRR is positively associated with environmental reputation for US firms'. From a sample of international companies, Martínez-Ferrero and García-Sánchez (2017) found lower costs of equity capital for companies that assure their sustainability reports. Similarly, Casey and Grenier (2015) revealed that CSRR assurance in the USA is associated with a lower cost of capital along with lower forecast errors and dispersion. For the world's largest listed firms, assured sustainability reporting leads to more accurate analysts' forecasts (Cuadrado-Bellesteros *et al.*, 2017).

Conversely, other research finds little to no upside from CSRR assurance. With an international sample, Alon and Vidovic (2015) estimated the effect of third-party assurance of firm sustainability reports on their reputation for sustainability using covariance-based structural equation modeling (SEM) path analysis. They did not find a statistically significant impact, concluding that external stakeholders do not incorporate such assurance into their evaluation of firm sustainability reputations. In US companies, Cho *et al.* (2014) failed to identify a significant association between CSRR assurance and firm value. In Italian listed firms, Fazzini and Dal Maso (2016) do not find an increase in the market value linked to the external assurance of environmental disclosures. Then, in Spanish listed companies, García-Benau *et al.* (2013) conclude that changes in the CSRR assurance strategy of companies does not have a significant impact on their assets or equity returns, the market to book ratio and Tobin's Q. Findings from Gietl *et al.* (2013) for STOXX Europe 600 firms indicate that the issuing of external assured CSRR could even be negatively related to firm value, according to Tobin's Q.

Experimental studies complement these archival findings, but, this time, the results form a consistent chorus of support for CSRR assurance as an advantageous undertaking. Evidence by Hodge *et al.* (2009) reveals that assuring a sustainability report increases the perceived credibility of the environmental and social information it holds. The participants in this study were MBA students enrolled at Australian universities serving as proxies for typical sustainability report users. In a behavioral experiment, Pflugrath *et al.* (2011) examined whether financial analysts from Australia, the USA and the UK perceived a difference in the credibility of CSRR depending on whether they were assured. The results show that the credibility of a CSRR to be greater when assured than when not.

Coram *et al.* (2009) performed an experiment with chartered accountants and members of the Securities Institute of Australia as proxies for "sophisticated financial statement users." Their findings indicate that an assured report only has a significant effect on stock price estimates when the disclosed non-financial indicators are positive. Yet, in a similar

experimental study in the USA, [Brown-Liburd and Zamora \(2015\)](#) find that CSR information is only value relevant if it has been assured and that assurance has a positive impact on the investors' stock price assessments.

Results from Australia by [Cheng et al. \(2015\)](#) highlight that assurance can increase an investor's willingness to invest if the environmental, social and governance indicators are highly relevant to a company's strategy. Findings from [Shen et al. \(2017\)](#) in the Chinese context indicate that CSRR assurance impacts decision-making by non-professional investors and can increase an investor's willingness to invest and also that this effect is greater when CSR disclosures are positive than when they are negative. Note that the "non-professional investors" in this study were postgraduate students enrolled in a Masters of Finance program. Research by [Reimsbach et al. \(2018\)](#) in Germany shows that assuring sustainability information positively affects the evaluations of a firm's sustainability performance by professional analysts and fund managers and increases the attractiveness of the investment.

Overall, the archival research findings are mixed, but, in contrast, almost all experimental studies reveal CSRR assurance has a positive impact, at least under certain conditions. Companies may opt for voluntary CSRR assurance to legitimize the company and to prove its commitment to sustainability or to signal credibility of its disclosed non-financial information. Against this theoretical backdrop, we ask the research question: Does assurance impact the perceptions held by bank directors of whether reported CSR information is credible? Drawing on both legitimacy and signaling theory, as well as based on previous archival and experimental research, we anticipate that CSRR assurance will have a positive effect on bank directors' decision-making. Hence, we formulate our first hypothesis as follows:

H1. CSRR assurance will have a positive impact on a bank director's decisions.

2.2 Type of assurance provider

Differences in the way bank directors perceive the assurances given by different types of providers may be grounded in the theory of professions. Professions and professionalization have increasingly become a key facet of socio-economic development in the modern world ([Brock et al., 2014](#)). Accordingly, the theory of professions provides guidance in the core characteristics of the dynamics of professional groups. For instance, formal education and training is an important characteristic of many professions and, usually, learning from the required systematic knowledge base is controlled by a professional body. Often, some form of certification is attached to the training that serves as an entry permit to future employment in the field. Thus, "the profession" becomes recognized as a distinct and credible authority within its domain.

Another distinguishing trait of a profession is that its practitioners frequently work in accordance with ethical codes, i.e. specific norms, values and expectations concerning personal conduct. Professional standards of practice are typically agreed upon and maintained through widely-recognized professional associations. These professional associations also generally take responsibility for evaluating and disciplining the conduct of the field's practitioners.

A final feature of a profession is that it exists because it serves a function to society. Implicit in this characteristic is that its professionals should apply their knowledge and skills in an altruistic and ethical manner and enjoy public trust in exchange ([Freidson, 1986](#); [Abbott, 1988](#); [Freidson, 1989](#); [Larson, 1990](#); [Macdonald, 1995](#); [Sullivan, 2005](#); [Saks, 2012](#); [Ackroyd, 2016](#)). However, professions are also commonly described in terms of the way

they, perhaps unfairly, exercise their power or pursue their own elite self-interests – say, by seeking to create a monopoly for their services or restricting practitioner numbers to maintain fee levels or social standing (Larson, 1977).

By all these criteria (e.g. formal education and training controlled by a professional body, certification, work in accordance with ethical codes, fulfillment of a societal function), auditors belong to a profession.

Many archival studies have explored the link between the type of provider and the (perceived) quality of assurance provided. In a study of US firms, Birkey *et al.* (2016) find that outside assurance enhances a firm's environmental reputation regardless of the assurer type. Moreover, studies by Perego and Kolk (2012) and Ballou *et al.* (2018) indicate that the quality of assurance is highly dependent on the type of provider. In contrast, Moroney *et al.* (2012) do not find an impact of the assurance provider on the quality of voluntary environmental disclosures. Peters and Romi (2015) provide evidence that, when provided by professional accountants, the value-relevance of sustainability assurance increases over time. In a later sample period (2008–2010), they also find a significant positive association between such assurance and the market valuation of equity. Casey and Grenier (2015) show that, in the US CSRR assurance market, reductions in the cost of equity capital and analyst forecast dispersion are significantly higher when CSRR assurance is provided by an accounting firm. Similarly, findings from Martínez-Ferrero and García-Sánchez (2017) indicate the cost of equity capital is much lower when assurance is provided by a Big 4 accounting firm versus an engineering or consultancy firm. Research by Cuadrado-Bellesteros *et al.* (2017) reveals that analysts produce more accurate forecasts from sustainability reports that have been assured by a Big 4 accounting firm than other providers. Similarly, Martínez-Ferrero and García-Sánchez (2018) show that the probability of detecting material errors and omissions in a sustainability report is higher if it is verified by a Big 4 accounting firm and by an industry expert as an assurance practitioner. Martínez-Ferrero and García-Sánchez (2018) also find an impact of the brand reputation and industry specialization of assurance providers on the level of assurance.

The conclusions made in a handful of experimental studies on assurer type are mixed. Evidence by Hodge *et al.* (2009) does not support the hypothesis that the assurer type affects people's perceptions of the credibility of the information. Pflugrath *et al.* (2011), however, find to the contrary, showing that financial analysts in Australia, the USA and the UK perceive CSRR to be more credible when the assurer is a professional accountant rather than a sustainability consultant. In China, Shen *et al.* (2017) find that the assurer type has little impact on a non-professional investor's willingness to invest.

In tandem with the theory of professions, source credibility theory may be able to lend some useful insights into why the persuasiveness of a conclusion differs depending on the profession that issued it (Giffin, 1967). Source credibility theory states that a source is more credible when it holds greater expertise, greater competence and greater trustworthiness (Birnbaum and Stegner, 1979; McGinnies and Ward, 1980; DeZoort *et al.*, 2003; Pornpitakpan, 2006). Less credible information could, for example, be discounted in commercial loan officers' loan decisions (Beaulieu, 1994).

By this reckoning, one would expect stakeholders to treat messages of corporate CSR performance from low-credibility sources with skepticism. In this respect, it is not reasonable to assume that a bank director will be familiar with the expertise and reputation of every individual assurance provider. However, according to Schwarzkopf (2007), it is reasonable to believe they will ascribe a level of credibility to a profession. In this regard, accounting firms may have some competitive advantages over other professions. First, auditors are public accountants and research shows that the opinions of public accountants

are commonly perceived as being credible. That said, the financial crisis in conjunction with numerous accounting scandals, such as Voltabox and Steinhoff in Germany, Carillion and BHS in the UK, Toshiba in Japan and Linkway Trading owned by the Gupta family in South Africa, has tarnished the reputation of the profession. Furthermore, CSRR assurance differs from traditional financial audits, for example, in that respect that it is less a verification of quantifiable data. As a consequence, it might be questioned whether accountants have greater knowledge than, for example, engineers over the subject matter of CSRR assurance (Farooq and de Villiers, 2019). Therefore, alternate assurance providers may now be deemed more trustworthy and competent, and particularly as CSRR contain more social and environmental information than financial (Wong and Millington, 2014). Notably, these alternate providers are not without their own scandals (e.g. the collapse of a dam in Brazil by Vale, the Volkswagen Dieselgate case or deficient breast implants by Poly Implant Prothèse). Thus, we raise the research question: Does the type of assurance provider impact a bank director's perceptions of a CSRR's credibility?

Prior research frequently finds a positive correlation between accounting firms and the quality of the assurance provided (Moroney *et al.*, 2012; Perego and Kolk, 2012; Ballou *et al.*, 2018; Pflugrath *et al.*, 2011). In particular, in case that the accounting firm is also responsible for assuring the company's financial statements and already has a long-term relationship with the company, it may have a strong understanding of the organization and thus is in a better position to undertake CSRR assurance (Farooq and de Villiers, 2019). Therefore, we have formulated our second hypothesis as follows:

- H2.* The impact on bank directors' decisions is greater when an accounting firm provides the assurance.

2.3 Level of assurance

The objective of CSRR assurance is to provide stakeholders with confidence about a CSRR (Nugent and Simnett, 2007; Cohen and Simnett, 2015). A core element of this confidence is the assurance providers' own stated confidence in their opinion, known as the level of assurance. The level of assurance is the extent to which the assurer feels the information given in a report is correct and, in turn, a reflection of how much trust users should place in the content of a report (Ackers and van Heerden, 2015).

The different types of assurance levels stem from the many national and international audit frameworks that regulate assurance engagements, but the two most common levels are reasonable and limited. For example, ISAE 3000 and ISAE 3410, which govern assurance engagements for financial information and greenhouse gas statements, respectively, both stipulate between reasonable and limited assurance (ISAE 3410.6; Simnett *et al.*, 2009), as does the German Institut der Wirtschaftsprüfer (the Institute of Auditors) in their IDW (2006) PS 821 guidelines under the terms "standard audit" (reasonable assurance) and "review" (limited assurance). The global consulting and standards firm Accountability uses the terms high and moderate assurance level (AA1000AS.3.1.3).

Both reasonable and limited assurance offer an acceptable level of confidence in the accuracy of the disclosures. However, reasonable assurance is the higher of the two levels and is expressed as an unmodified conclusion in positive form, for example, "that the CSRR is prepared, in all material aspects, in accordance with the legal CSRR provisions" (Braam and Peeters, 2018). This is the typical level of assurance given during a standard financial audit. While still offering an acceptable level of confidence, limited assurance is a conclusion in negative form and so is not as strong as reasonable assurance – for example, "no matters have come to the attention of the assurance provider that causes his/her to believe that the

CSRR is not prepared, in all material aspects, in accordance with the legal CSRR provisions” (ISAE 3000.71). Implied in these conclusions is that the assurer has undertaken a more thorough audit to reach the stronger and positive reasonable level of assurance (ISAE 3000. A4). From a practical perspective, CSRR often cover multiple subjects associated with mixed levels of assurance – reasonable assurance on some subjects, limited assurance on others and possibly no assurance on others still (Cohen and Simnett, 2015).

The research on assurance levels is extremely limited. As Cohen and Simnett (2015, p. 63) outline: “Research related to the assurance on CSRR is at an early stage of its evolution when compared to decades of research on financial statement audits.” We were only able to identify three studies on this topic. In a study of the sustainability reports of the world’s largest listed firms, Cuadrado-Bellesteros *et al.* (2017) find that analysts’ forecasts are more accurate when based on reports with a reasonable level of assurance than those with a limited assurance. From a European sample, Fuhrmann *et al.* (2017) shows that sustainability reports with high assurance levels are significantly and negatively related to bid-ask spread, but other reports are not. While Hodge *et al.* (2009) did not find a correlation between assurance levels and perceived credibility in their experiments involving Australian MBA students and sustainability report assurance.

We believe that a positively formulated assurance level is likely to be more appealing to stakeholders than a negative one. Additionally, it is reasonable to conjecture that users will place less stock in limited assurance if they know it to be a lower cost, more superficial undertaking. However, what is not clear is whether stakeholders will be able to differentiate between the two levels of assurance. As a result, we pose the research question: Does the level of assurance impact a bank director’s perceptions of credibility in a CSRR?

We take the position that bank directors are knowledgeable parties and so will be able to differentiate between reasonable and limited assurance. Further, there is more support in the research for the positive impact of reasonable assurance than not. Therefore, hypothesis three is formulated as follows:

- H3.* The extent to which bank directors make favorable decisions on the basis of a CSRR is positively linked to the level of assurance provided. Stronger levels of assurance will garner more favorable decisions.

3. Research method

3.1 Experiment

3.1.1 Case materials. To test our hypotheses, we conducted an experiment with a $2 \times 2 + 1$ between-subjects design. The experiment entailed two treatment variables, assurance provider (accounting firm vs non-accounting assurance provider) and assurance level (reasonable vs limited). In addition, there was one control condition with no CSRR assurance. This resulted in five experimental conditions and each participant received just one condition.

To ensure a realistic setting, we selected an actual company and upscaled its financial data by a factor of 1.5. Three public accountants from different Big 4 accounting firms checked the case for realism, which resulted in some minor alterations. The final case materials were then presented to participants as a fictitious company called Engineering Factory AG (EF AG). The materials included brief information on the firm such as its headquarters and subsidiaries, the nature of its business, employees and stock exchange listing on the Prime Standard of the Frankfurt Stock Exchange. This was followed by a more detailed description of EF AG’s business situation, income statements, balance sheets

and free cash flows for two consecutive years. Participants were then informed that EF AG published a CSRR on its website coupled with information on the auditor, the audit opinion and the audit and non-audit fees paid for the assurance. A translation of the original materials from German into English appears in the Appendix.

3.1.2 Dependent variables. Disclosure of non-financial information is essential for managing change toward a sustainable global economy by combining long-term profitability with social justice and environmental protection and to meet the needs of capital providers, with easy access to information on the impact of businesses on society (European Parliament and Council of the European Union, 2014). Information made available through CSRR allows stakeholders to form opinions and to make informed decisions. CSRR assurance potentially increases the credibility of CSRR and reduces stakeholders' decision risks. Thus, the impact of CSRR assurance on bankers' CSRR reliance and decisions are the main focus of our research interest. Credit granting and investment advice are core decisions of bankers.

First, the participants had to read the case. Then, the experimental task asked the participants to judge their reliance on the CSRR on a seven-point Likert scale (*RELY*), to quantify the probability that they would grant credit to the company (*CREDIT*) on a scale from 0% to 100%, to evaluate the likelihood that they would recommend non-professional investors to buy shares of EF AG on a scale from 0% to 100% (*ADVICE*) and the likelihood that they would invest in shares of the EF AG on a scale from 0% to 100% (*INVEST*). Finally, we asked participants to complete a manipulation check survey and to answer some demographic questions in a post-experiment questionnaire.

3.1.3 Independent variables. CSRR may be motivated by economic thinking (Spence and Gray, 2007) and enhance shareholder value. Michelin and Parbonetti (2010) see them as part of the dialogue between a company and its stakeholders, to provide information on a company's activities that legitimize its behavior, inform and change perceptions and expectations of the stakeholders (Vukic, 2015). Such functions can only be fulfilled if the addressees of CSRR perceive them as credible (Ackers and Eccles, 2015). CSRR assurance potentially increases such credibility (Brown-Liburd and Zamora, 2015). However, CSRR assurance is not mandatory in the German environmental setting. Therefore, a company's management needs to decide whether it voluntarily should demand such assurance (Braam and Peeters, 2018) and a first independent variable relates to assurance provision. The purchase of assurance is only appropriate if it is provided at an adequate quality (Quick and Schmidt, 2018). We use the type of assurance provider as a treatment variable because CSRR assurance is not designated by law to chartered accountants. Thus, clients can choose the assurance provider and this choice may impact the perceptions and decisions of addressees. Moreover, the quality of an assurance service may be significantly affected by the assurance level (Cuadrado-Bellesteros et al., 2017; Boiral et al., 2019), our second treatment variable.

The first of two independent variables was assurance provider type (*APROVIDER*), manipulated at two levels, namely, Big 4 accounting firm and technical control board. In Germany, technical control boards are frequently engaged as alternates to auditors for assurance. They offer a broad range of services such as product inspection, cyber security and data security or functional safety engineering, but also audits and certifications. Thus, the technical control board is an external non-accounting assurance provider.

The second was level of assurance (*ALEVEL*), also manipulated at two levels: reasonable assurance and limited assurance. In the case materials that included reasonable assurance, the opinion of the assurance provider read as follows:

In our opinion, on the basis of the knowledge obtained in the audit, the CSR Report of Engineering Factory AG for the period from 1 January 2018 to 31 December 2018 complies, in all material respects, with the Sections 315b, 315c in conjunction with Sections 289b to 289e HGB.

The wording of the limited assurance opinion read:

Based on the procedures performed, nothing has come to our attention that causes us to believe that the CSR Report of Engineering Factory AG for the period from 1 January 2018 to 31 December 2018 is not prepared, in all material respects, in accordance with the Sections 315b, 315c in conjunction with Sections 289b to 289e HGB.

In addition, we included a control condition where no assurance on the CSRR was provided. Thus, there were five experimental conditions. [Table 1](#) provides an overview of the five and the number of participants per cell.

To improve the quality and validity of our research materials, four international researchers with substantial experience in experimental auditing research were asked to provide feedback. In addition, five bankers participated in pilot tests. Both these exercises led to a number of amendments. The final materials were approved by the Institutional Review Board of the university of one of the authors.

3.2 Participants

Prior studies have often used business students as participants, which raises some concerns over external validity as the results are not proven to hold in a real-world setting. We do not believe the decisions chosen for analysis in this research can be proxied by business students. Therefore, we selected bank directors as subjects and German bank directors in particular due to the extremely high relevance of banks to the German economy. The German model is described as a decentralized universal bank-based financial system ([Elsas and Krahnens, 2004](#); [Hardie and Howarth, 2009](#)) with three pillars, namely, privately owned banks, banks with government involvement including the regionally focused savings banks and small credit cooperatives ([Hackethal, 2004](#)). Universal banks offer a wide range of financial services and provide a significant share of finance through both debt and equity holding. In Germany, bank borrowing is the largest single external source of finance, especially via long-term loans ([Hackethal et al., 2005](#); [Deutsche Bundesbank, 2012](#)). In this so-called house-bank model, the relationships between banks and their corporate clients is very close ([Behr and Schmidt, 2015](#)). For instance, banks are widely represented on the supervisory boards of companies and often control very large blocks of shareholder voting rights. These voting rights derive from either direct ownership of the shares or from proxy powers as many banks operate a stockbroking service which includes an option for proxy rights management to passive investors as part of the share purchasing service ([Franks and](#)

Experimental condition	APROVIDER AF = accounting firm; TCB = technical control board	ALEVEL		No. of participants
		RA = reasonable assurance	LA = limited assurance	
1	–	–	–	23
2	AF	LA	–	24
3	AF	RA	–	20
4	TCB	LA	–	18
5	TCB	RA	–	24

Table 1.
Number of
participants per
experimental
condition

Mayer, 2001; Becht and Boehmer, 2003). Consequently, banks can often: elect their own managers to corporate boards (Dittmann *et al.*, 2010); handle the majority of new issues of marketable securities, frequently placing them with their own customers; and/or serve as financial intermediaries or investment advisory services to and on behalf of a firm. For all these reasons, banks play a major role in the structure of German corporate governance (Cable, 1985; La Porta *et al.*, 2000; Chirinko and Elston, 2006; Goergen *et al.*, 2008).

We used the BaFin database of banks (Bundesanstalt für Finanzdienstleistungsaufsicht = Federal Financial Supervisory Authority) to identify all registered German banks (1,384), and then manually collated the names of all corresponding bank directors from the banks' websites (3,827 as of Spring 2019). Next, we randomly selected one director from each bank and sent them an e-mail broadly introducing the research project and kindly requesting participation through a provided web link. To motivate participation, we offered a lottery with a donation to their charity of choice as the prize, plus an executive summary of the research outcomes (by request). One month later, we sent a reminder.

The result were 109 usable responses which means a response rate of 7.9[1]. To test for non-response bias, we performed *t*-tests for all dependent variables, comparing early respondents to those who responded after we sent the reminder (Oppenheim, 2000) and found no significant differences between the two[2], which indicates there is no non-response bias.

Table 2 provides demographic information on the participants.

On average, the participants had just over 25 years of practical experience in banking (*YEARS* mean = 25.64, median = 25, range = 5-48). The average number of firms for which

Variable	N	Mean	SD	Min	Max	Median
<i>YEARS</i>	95	25.64	10.2261	5	48	25
<i>NR_FIRMS</i>	90	985.50	2,165.9077	0	10,000	200
<i>NR_ADV</i>	89	1,353.48	2,284.9632	0	10,000	500
<i>AGE</i>	94	3.32	0.9969	1	5	3
<i>GENDER</i>	94	1.16	0.3682	1	2	1
<i>POSITION</i>	94	1.34	0.4764	1	2	1
<i>ACC_EXPERT</i>	94	5.77	1.0414	2	7	6
<i>AUD_EXPERT</i>	94	4.57	1.7007	1	7	5
<i>RISK</i>	93	4.26	1.3262	2	7	4
<i>TRUST_REPORT</i>	94	4.82	1.1068	2	7	5
<i>TRUST_CSR</i>	94	3.74	1.3752	1	6	4
<i>TRUST_BOARD</i>	93	4.82	0.8840	3	6	5
<i>TRUST_AUD</i>	94	5.04	1.2085	1	7	5
<i>TRUST_TCB</i>	92	3.70	1.3566	1	7	4

Notes: *YEARS* is the number of years the participant works in banking; *NR_FIRMS* is the number of firms the participant has granted a credit; *NR_ADV* is the number of private investors the participant has provided advice; *AGE* is the age of the participant (1 = <30, 2 = 30-40, 3 = 41-50, 4 = 51-60, 5 = >60); *GENDER* is the gender of the participant (1 = male, 2 = female); *POSITION* is the position of the participant within the bank (1 = board member, 2 = other); *ACC_EXPERT* is the self-assessed financial accounting knowledge on a seven-point Likert scale; *AUD_EXPERT* is the self-assessed auditing knowledge on a seven-point Likert scale; *RISK* is the self-assessed risk attitude on a seven-point Likert scale anchored at 1 = risk-averse and 7 = risk-prone; *TRUST_REPORT* is the self-assessed trust in annual reports on a seven-point Likert scale; *TRUST_CSR* is the self-assessed trust in CSR on a seven-point Likert scale; *TRUST_BOARD* is the self-assessed trust in directors of companies on a seven-point Likert scale; *TRUST_AUD* is the self-assessed trust in auditors on a seven-point Likert scale; *TRUST_TCB* is the self-assessed trust in the technical control board on a seven-point Likert scale

Table 2.
Demographic
information

the subjects had taken part in credit-granting decisions was quite high (*NR_FIRMS* mean = 985.50), but mean varied considerably (range = 0-10,000). The same was true for investment advice (*NR_ADV* mean = 1,353.38, range = 0-10,000). The exact age of the participants could not be requested for ethical reasons; however, the majority were between 40 and 50 years old. Most were male (mean = 1.16) and sat on the board of directors (mean = 1.34) [3]. Their self-assessed expertise in both financial accounting and auditing tended to be high (*ACC_EXPERT* mean = 5.77; *AUD_EXPERT* mean = 4.57) and, on average, they were neither risk-averse nor risk-prone (*RISK* mean = 4.26). They placed a high level of trust in annual reports, auditors and boards of directors (*TRUST_REPORT* mean = 4.82; *TRUST_AUD* mean = 5.04; *TRUST_BOARD* mean = 4.82). Conversely, their trust in CSRR and technical control boards was moderate (*TRUST_CSR* mean = 3.74; *TRUST_TCB* = 3.70).

The experimental materials included three manipulation checks to determine whether the participants had correctly perceived the provision of assurance services. The first check, "Has the CSRR been audited/certified?" was a yes/no question. In total, 30 participants failed to pass this manipulation check and were excluded from further analyzes. Ten participants incorrectly answered the second check, "Who provided assurance on the CSRR of EF AG?" and were also excluded. The third question, "How do you perceive the provided level of assurance on the CSRR?" was designed to control for assurance level perceptions. Answered on a seven-point Likert scale (1 = low; 7 = high), respondents should have perceived limited assurance as being of lower quality than reasonable assurance. A mean of 3.12 for limited assurance compared to a mean of 4.69 for reasonable assurance ($t = -2.977, p = 0.005$) indicates a successful manipulation.

4. Results

As [Table 3](#) shows, the means of all dependent variables concerning the type of assurance provider were higher when an accounting firm provided the assurance. In terms of the assurance level, all means were lower when only limited assurance was provided.

[Table 4](#) shows the means of the dependent variables for the five experimental conditions. Reasonable assurance provided by an accounting firm received the highest mean, while the control group with no assurance had the lowest means. Interestingly, limited assurance provided by an accounting firm had a consistently higher means than a reasonable level of assurance provided by a technical control board.

To examine whether any assurance at all had an impact on the perceptions and decisions of bank directors, and thus to test the first hypothesis, we performed *t*-tests for all four dependent variables by comparing the control group (with no assurance) to a pooled sample of every other response[4]. As reported in [Table 5](#), we found highly significant differences between the two groups, with the control group scoring lower in all dependent variables. This indicates that assurance on CSRR positively affects the decisions of bank directors. In other words, bank directors rely more in the CSRR and are more likely to grant credit,

Factor	Variable Level	<i>RELY</i>		<i>CREDIT</i>		<i>ADVICE</i>		<i>INVEST</i>	
		Mean	SD	Mean (%)	SD (%)	Mean (%)	SD (%)	Mean (%)	SD (%)
APROVIDER	AF	5.30	1.1706	76.0	15.19	57.4	23.67	59.4	28.00
	TCB	4.14	1.2069	55.0	20.35	41.3	17.92	40.9	22.81
ALEVEL	LA	4.39	1.1962	59.9	23.30	43.2	18.51	44.7	21.45
	RA	5.12	1.3365	72.4	15.76	56.3	24.35	56.8	30.71

Table 3.
Means and standard
deviations of
dependent variables
by factor levels

recommend the purchase of shares or make investments in a firm based on an assured CSRR than a non-assured report. *H1* is hence confirmed.

Turning to the second and third hypothesis, the results of the ANOVAs appear in Table 6 [5] along with the means, standard deviations and post hoc pair-wise comparison tests (Tukey's HSD)[6]. Table 6, Panel A shows the ANOVA results for the directors' reliance on the CSRR. In support of the *H2*, assurance provided by an accounting firm had a significant positive impact ($F = 10.58$; p -value = 0.002). *H3* was also supported, meaning

Table 4.
Means and standard deviations of dependent variables by experimental conditions

Variable Experimental condition	<i>RELY</i>		<i>CREDIT</i>		<i>ADVICE</i>		<i>INVEST</i>	
	Mean	SD	Mean (%)	SD (%)	Mean (%)	SD (%)	Mean (%)	SD (%)
1	2.32	1.5653	39.0	29.70	30.5	21.39	32.9	19.21
2	5.00	0.7845	71.9	16.61	52.8	14.98	54.4	18.93
3	5.62	1.4456	80.4	12.67	62.4	30.32	64.9	35.32
4	3.44	1.1304	41.3	20.15	28.2	12.82	29.6	16.18
5	4.62	1.0439	64.4	14.77	50.3	15.38	48.7	23.96

Table 5.
Differences in means of the dependent variables of control vs other experimental conditions

Variable	Mean control	Mean all other	<i>t</i> -value	<i>p</i> -value
<i>RELY</i>	4.78	2.32	6.571	<0.001
<i>CREDIT</i>	66.5%	39.0%	4.366	<0.001
<i>ADVICE</i>	50.2%	30.5%	3.273	0.002
<i>INVEST</i>	51.1%	32.9%	2.659	0.010

<i>Panel A</i>	<i>ANOVA results</i>			
	Type III sum of squares	df	<i>F</i> -value	<i>p</i> -value
Intercept	106.78	1	85.23	<0.001
APROVIDER	13.26	1	10.58	0.002
ALEVEL	7.29	1	5.82	0.020
APROVIDER × ALEVEL	0.92	1	0.73	0.397
Residuals	56.38	45		
<i>N</i>	48			

<i>Panel B</i>	Means
Cell	Mean
TCB LA	3.44
TCB RA	4.62
AF LA	5.00
AF RA	5.62

<i>Panel C</i>	<i>post hoc tests (Tukey HSD)</i>
Comparison	<i>p</i> -value (two-tailed)
TCB RA vs TCB LA	0.089
AF RA vs AF LA	0.489
AF RA vs TCB RA	0.119
AF LA vs TCB LA	0.011

Table 6.
Results for the dependent variable *RELY*

that the directors tended to rely more on the CSRR when the assurance level was reasonable ($F = 5.82$; p -value = 0.020). There was no significant interaction between the two treatment variables ($F = 0.73$; p -value = 0.397).

In Table 6, Panel C shows the post hoc tests results. Although the means met our expectations, not all tests indicated significant differences. The provision of assurance by an accounting firm only increased the reliance in the CSRR within a limited assurance engagement (p -value = 0.011). For a reasonable assurance engagement, the mean was 5.62 when an accounting firm provided the assurance and 4.62 in case of assurance provision by the TCB. However, the difference was not significant (p -value = 0.119). Likewise, a reasonable assurance engagement significantly increased such reliance only when the assurance was provided by the TBC (p -value = 0.089). Conversely, when the assurance was provided by an accounting firm, the mean for a reasonable assurance (5.62) was higher than the mean for limited assurance (5.00). However, the mean difference was insignificant (p -value = 0.489).

The second dependent variable is how likely the directors feel they would be to grant credit to EF AG. The ANOVA results are given in Table 7, Panel A. The likelihood of granting credit increased significantly with assurance provided by an accounting firm ($F = 20.18$; p -value < 0.001), once again confirming $H2$. The likelihood also increased significantly with a reasonable level of assurance ($F = 11.17$; p -value = 0.002), supporting $H3$. Again, there was no significant interaction between the two treatment variables ($F = 2.48$; p -value = 0.122).

The post hoc tests in Panel C were all in line with expectations, with most revealing significant differences. Assurance by an accounting firm significantly increased the likelihood of granting credit at both the reasonable level (p -value = 0.063) and the limited level (p -value < 0.001). Moreover, the provision of reasonable assurance resulted in significantly higher credit-granting likelihood in comparison to the provision of limited assurance when the TBC provided that assurance (p -value = 0.009). In case that an

<i>Panel A</i>		<i>ANOVA results</i>			
	Type III sum of squares	df	<i>F</i> -value	<i>p</i> -value	
Intercept	153,76.00	1	60.80	<0.001	
APROVIDER	5,104.11	1	20.18	<0.001	
ALEVEL	2,825.88	1	11.17	0.002	
APROVIDER × ALEVEL	627.08	1	2.48	0.122	
Residuals	11,379.87	45			
<i>N</i>	48				
<i>Panel B</i>		<i>Means</i>			
Cell		Mean			
TCB LA		41.33			
TCB RA		64.38			
AF LA		71.86			
AF RA		80.38			
<i>Panel C</i>		<i>post hoc tests (Tukey HSD)</i>			
Comparison		<i>p</i> -value (two-tailed)			
TCB RA vs TCB LA		0.009			
AF RA vs AF LA		0.511			
AF RA vs TCB RA		0.063			
AF LA vs TCB LA		<0.001			

Table 7.
Results for the
dependent variable
CREDIT

accounting firm provided the assurance the mean for a reasonable assurance was higher (80.38) than the mean for a limited assurance (71.86), but the difference between the two means was insignificant (p -value = 0.511).

The next condition tested was how likely the bank directors felt they would be to recommend a share purchase in EF AG to a non-professional investor based on the CSRR. Table 8, Panel A, shows the ANOVA results. Again, assurance by an accounting firm and a reasonable level of assurance both had a significant positive impact on the recommendation in support of $H2$ and $H3$, respectively (accounting firm: $F = 8.22$; p -value = 0.006; reasonable assurance $F = 6.45$; p -value = 0.015). There was no significant interaction between the two treatment variables ($F = 1.15$; p -value = 0.289).

In this decision, too, the post hoc tests met our expectations but not all tests indicated significant differences. The provision of assurance by an accounting firm only increased the bank directors' likelihood that they would recommend non-professional investors a purchase of shares of the fictitious company for a limited assurance engagement (p -value = 0.031). For a reasonable assurance engagement, the mean was 62.38 when an accounting firm provided the assurance and 50.31 in case of assurance provision by the TCB. However, the difference was not significant (p -value = 0.426). Likewise, a reasonable assurance engagement significantly increased this likelihood only when the assurance was provided by the TBC (p -value = 0.067). Conversely, when the assurance was provided by an accounting firm, the mean for a reasonable assurance (62.38) was higher than the mean for limited assurance (52.79). However, the mean difference was insignificant (p -value = 0.604).

In Table 9, Panel A presents the ANOVA results for the final decision as to whether the directors themselves would invest in EF AG. Unsurprisingly, assurance by an accounting firm had a significant positive impact ($F = 5.30$; p -value = 0.026), confirming $H2$. However, this time, the assurance level was not of consequence ($F = 3.06$; p -value = 0.087). Therefore, $H3$ is not supported. Again, there were no significant interactions between the two treatment variables ($F = 0.34$; p -value = 0.561).

<i>Panel A</i>		<i>ANOVA results</i>			
	Type III sum of squares	df	<i>F</i> -value	<i>p</i> -value	
Intercept	7,168.44	1	17.82	<0.001	
APROVIDER	3,305.39	1	8.22	0.006	
ALEVEL	2,594.04	1	6.45	0.015	
APROVIDER × ALEVEL	463.50	1	1.15	0.289	
Residuals	18,103.76	45			
<i>N</i>	48				
<i>Panel B</i>		<i>Means</i>			
Cell			Mean		
TCB LA			28.22		
TCB RA			50.31		
AF LA			52.79		
AF RA			62.38		
<i>Panel C</i>		post hoc tests (Tukey HSD)			
Comparison			<i>p</i> -value (two-tailed)		
TCB RA vs TCB LA			0.067		
AF RA vs AF LA			0.604		
AF RA vs TCB RA			0.426		
AF LA vs TCB LA			0.031		

Table 8.
Results for the
dependent variable
ADVICE

Table 9.
Results for the
dependent variable
INVEST

<i>Panel A</i>	<i>ANOVA results</i>			
	Type III sum of squares	df	<i>F</i> -value	<i>p</i> -value
Intercept	7,861.78	1	12.36	0.001
APROVIDER	3,369.78	1	5.30	0.026
ALEVEL	1,947.60	1	3.06	0.087
APROVIDER × ALEVEL	218.38	1	0.34	0.561
Residuals	28,613.13	45		
<i>N</i>	48			
<i>Panel B</i>	<i>Means</i>			
Cell	Mean			
TCB LA	29.56			
TCB RA	48.69			
AF LA	54.36			
AF RA	64.92			
<i>Panel C</i>	<i>post hoc tests (Tukey HSD)</i>			
Comparison	<i>p</i> -value (two-tailed)			
TCB RA vs TCB LA	0.311			
AF RA vs AF LA	0.700			
AF RA vs TCB RA	0.367			
AF LA vs TCB LA	0.113			

The post hoc tests results in Panel C all lead to insignificant results. However, all means corresponded to our expectations.

Graphs of all the ANOVA results appear in [Figure 1](#).

To ensure that our results were not biased by characteristics of the participants that systematically varied between cells despite random selection, we conducted a ANCOVAs for each dependent variable. First, we calculated the correlations between the dependent variables and the participants' demographic information. Then, we added significantly correlated variables as covariates.

The dependent variable *RELY* was only significantly correlated with the demographic variable *TRUST_CSR* (coefficient = 0.445, *p*-value < 0.001). Adding the variable *TRUST_CSR* as a covariate led to results similar to the ANOVA. The significance of the treatment variables was even higher ([Table 10](#), Panel A), and, in addition, there was a significant positive effect of the directors' general reliance on CSRR and their specific reliance on the CSRR in this experiment ($F = 6.88$; *p*-value = 0.005).

Four demographic variables were significantly correlated to the dependent variable *CREDIT*: *TRUST_CSR* (coefficient = 0.258, *p*-value = 0.044), *TRUST_BOARD* (coefficient = 0.278, *p*-value = 0.032), *TRUST_AUD* (coefficient = 0.286, *p*-value = 0.026) and *TRUST_TCB* (coefficient = 0.373, *p*-value = 0.004). Using these variables as covariates again confirmed the ANOVA results and increased their significance levels. The covariates themselves were not significant ([Table 10](#), Panel B).

The dependent variable *ADVICE* had two significantly correlated demographic variables: *POSITION* (coefficient = 0.254, *p*-value = 0.048) and *TRUST_CSR* (coefficient = 0.398, *p*-value = 0.001). Adding them as covariates also led to results similar to those from the ANOVA, but with increased significance ([Table 10](#), Panel C). The variable *POSITION* had no significant impact on the likelihood of granting credit, whereas the variable *TRUST_CSR* significantly increased it ($F = 10.20$; *p*-value = 0.003).

The dependent variable *INVEST* had three significantly correlated demographic variables: *NR_ADV* (coefficient = -0.276 *p*-value = 0.040), *RISK* (coefficient = 0.288, *p*-

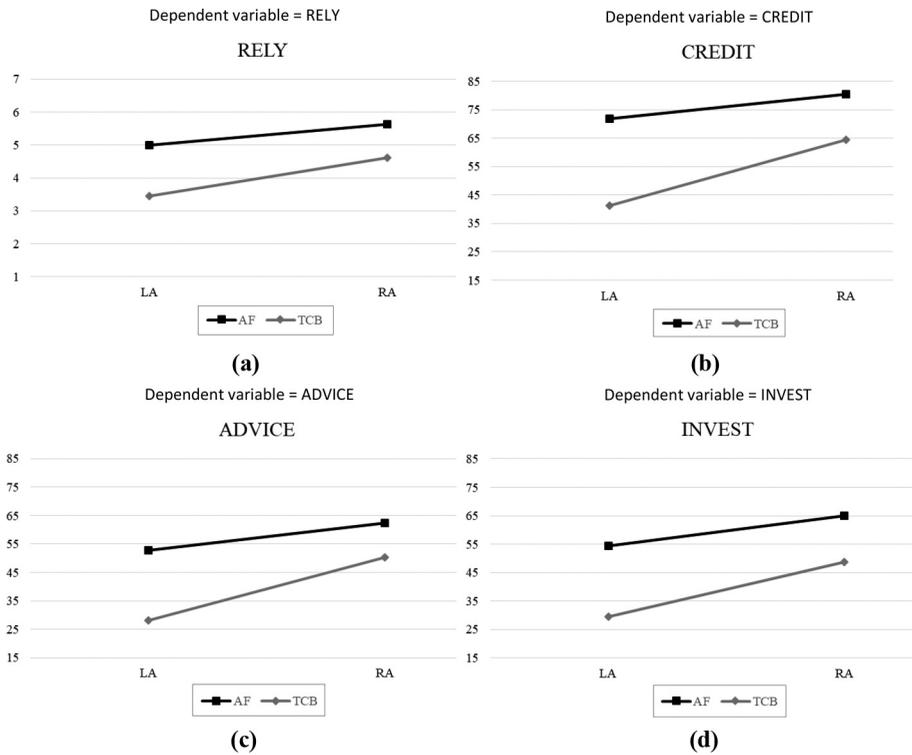


Figure 1.
ANOVA results
(Tables 6-9)

value = 0.026) and *TRUST_CSR* (coefficient = 0.517 p -value = 0.000). In general, the ANCOVA results were in accordance with the ANOVA results. However, the ANCOVA indicated that the level of assurance is significant where the ANOVA did not (Table 10, Panel D). In addition, all three covariates were significant. More experience in investment consulting (*NR_ADV*, $F = 15.65$; p -value < 0.001) reduced the likelihood that a director would invest in EF AG. Conversely, the directors who were more risk-prone ($F = 7.41$; p -value = 0.010) and had a higher general reliance on CSRR ($F = 4.02$; p -value = 0.053) were more likely to invest.

In summary, all three hypotheses (first, assurance on CSRR positively impacts bank directors' decisions; second, the impact on bank directors' decisions is greater when an accounting firm provides the assurance; and third, the impact on bank directors' decisions is greater when reasonable assurance is provided) are confirmed. The implication of this is that the purchase of assurance services has a positive effect on bank directors' perceptions and decisions. They favor the provision of such services by accounting firms, and they appreciate a reasonable assurance level. Linking the study's results with expectations derived from legitimacy and signaling theory we show that assured CSRR have a significant positive impact on bank directors' perceptions and decisions. Assurance increases the reliance in CSRR and the likelihood of credit granting, investment advice and personal investment. As disclosed in the hypotheses' section our expectations which derived from the theory of professions and the credit

Panel A	Dependent variable = <i>RELY</i>			
	Type III sum of squares	df	F-value	p-value
Intercept	17.08	1	21.89	<0.001
APROVIDER	11.68	1	14.97	<0.001
ALEVEL	8.81	1	11.29	0.002
APROVIDER × ALEVEL	1.26	1	1.61	0.212
TRUST_CSR	6.88	1	8.82	0.005
Residuals	30.43	39		
N	44			
Panel B	Dependent variable = <i>CREDIT</i>			
	Type III sum of squares	df	F value	p-value
Intercept	32.96	1	0.19	0.669
APROVIDER	5,791.09	1	32.68	<0.001
ALEVEL	2,428.60	1	13.71	0.001
APROVIDER × ALEVEL	755.38	1	4.26	0.047
TRUST_CSR	19.00	1	0.11	0.745
TRUST_BOARD	344.54	1	1.94	0.172
TRUST_AUD	0.11	1	0.00	0.980
TRUST_TUV	406.07	1	2.29	0.140
Residuals	5,846.92	33		
N	41			
Panel C	Dependent variable = <i>ADVICE</i>			
	Type III sum of squares	df	F value	p-value
Intercept	427.13	1	1.72	0.197
APROVIDER	2,424.42	1	9.77	0.003
ALEVEL	2,254.86	1	9.08	0.005
APROVIDER × ALEVEL	333.11	1	1.34	0.254
POSITION	461.34	1	1.86	0.181
TRUST_CSR	2,533.44	1	10.20	0.003
Residuals	9,433.81	38		
N	44			
Panel D	Dependent variable = <i>INVEST</i>			
	Type III sum of squares	df	F value	p-value
Intercept	8.76	1	0.04	0.842
APROVIDER	1,419.72	1	6.53	0.015
ALEVEL	1,203.94	1	5.53	0.024
APROVIDER × ALEVEL	10.54	1	0.05	0.827
NR_ADV	3,404.96	1	15.65	<0.001
RISK	1,613.11	1	7.41	0.010
TRUST_CSR	874.15	1	4.02	0.053
Residuals	7,615.11	35		
N	42			

Table 10.
ANOCVA results for
all dependent
variables

source theory were confirmed. Applying the theoretical lenses to our results mean that bank directors perceive information stemming from accounting firms as more credible than from other assurance providers. The perception differences between accounting and non-accounting assurance providers may also be caused by the fact that they adhere to different standards and apply different methodologies (Farooq and de Villiers, 2019). This effect is in line with prior results as suggested by Ballou *et al.* (2018), Casey and Grenier (2015) and Cuadrado-Bellesteros *et al.* (2017), who, however, used very different variables and subject groups than in the study on hand. The

assurance level is in most cases relevant for the bank directors' perceptions and decisions. Only for their personal investment decisions, no significant effect has been revealed. Thus, it can be concluded that bank directors are able to identify the difference between reasonable and limited assurance and that the related information is relevant for their decisions.

5. Conclusion

With this research, we have attempted to generate some new insights concerning the way users perceive voluntary assurance on CSRR when making decisions. The major contribution of this paper to what [Cohen and Simnett \(2015, p. 71\)](#) describe as a "relatively under-researched but potentially rich and fruitful area for future research" is that we show the influence of CSRR assurance on decisions by bank directors post-implementation of the EU Directive 2014/95. All in all, we contribute to the stream of research engaged in analyzing specific characteristics of assurance, such as [Cuadrado-Bellesteros et al. \(2017\)](#). In this case, those characteristics are the type of assurance provider and the level of assurance provided. This is a crucial area where our research "can help develop a tipping point where it may be to a company's advantage to engage in appropriate CSR behavior and to document this behavior in a report that will receive the rigorous scrutiny of quality assurance providers" ([Cohen and Simnett, 2015, p. 72](#)).

Our experiments involved a sample of German bank directors who were asked to make three different decisions based on the CSRR of a fictitious engineering company. The experiments included two manipulations (the type of assurance provider and the level of assurance) and a control group. The three decisions were case evaluations to grant credit, make a share purchase recommendation to their clients and to make their own personal investment in the firm. Our findings suggest that assurance increased the credibility of the information in the minds of the bank directors and that, on the whole, they found CSRR assurance to be decision-useful. This confirms the recent findings obtained by [Cuadrado-Bellesteros et al. \(2017, p. 1153\)](#) who concludes that "sustainability assurance is a valuable tool for improving the accuracy and credibility of sustainability information, thus increasing the analysts' ability to predict future cash flows".

We argue that, with this paper, we have met [Abernathy's et al. \(2017\)](#) research demand by performing an experimental study on the influence of assurance providers that examines whether different CSRR assurance providers carry different levels of credibility. Our results show that when a CSRR was verified by an external assurance provider, the bank directors relied on the reports more. Additionally, they were more willing to grant credits, to advise non-professional investors to buy shares in the firm and to invest themselves. Further, the effects were stronger if an accounting firm had provided the assurance. Our analysis also clearly shows that the influence of a reasonable assurance was stronger than that of limited assurance.

The EU Directive 2014/95 did not mandate that an independent assurer verifies the information provided within CSRR but included a Member State option to introduce such mandatory assurance. Some countries, such as France, Italy or Spain made use of this option while others did not. In light of our findings, not only the legislators from those country but also the European legislator might consider mandating the verification of non-financial statements, too. In this perspective, legislators may also consider which assurance providers would be best to engage and what levels of assurance to require. However, regulators should be careful not to stifle competition in the market for CSRR assurance ([Farooq and de Villiers, 2019](#)). Moreover, a third-party assurance is a costly and time-consuming process. It is, thus, not surprising that according to the economics-based theory, companies will only use third parties if the expected benefits of external assurance exceeds the costs ([Jones and Solomon,](#)

2010; Lys *et al.*, 2015). CSRR assurance does not only enhance report credibility but also add value by highlighting system and process weaknesses and recommending improvements (Farooq and de Villiers, 2020). Consequently, because CSRR and related assurance are just one component within a company's corporate governance arrangements, the EU legislator should take into account whether alternate elements with a similar function may be more cost-effective than CSRR assurance.

Such as all studies, this work also has limitations. The arguments presented here are limited to the case of the engineering firm used in the experiment and the views held by the bank directors at the time we sent out the questionnaires. It is very possible that the results would vary given a different industry, a different time or by bank directors working in different structural conditions. In addition, our case refers to a specific economic situation of the client and bankers may have formed a perception based on those specific circumstances. We cannot exclude that our participants would react differently, if, for example, the case company was financially distressed. Moreover, our experimental case refers to a given CSRR and it is well possible that bank directors' perceived credibility of assured CSRR varies with report quality. Furthermore, our experimental case assumed assurance provision by a Big 4 accounting firm. As a consequence, we cannot claim that assurance provision by a non-Big 4 accounting firm has a greater impact on bank directors' decisions than assurance provision by an alternate provider. German banks are different from banks in Anglo-Saxon countries insofar as they have much closer relationships to their corporate customers. Therefore, our findings may not apply to countries such as the USA, the UK, Australia or New Zealand. However, countries such as Austria, France (Marchetti and Sabetta, 2010), Italy (De Bonis *et al.*, 2011), Japan (Kutsuna *et al.*, 2007) and Spain (Carrasco *et al.*, 2014) have similarities in their banking systems, and thus, the results of our study are quite likely relevant for such countries, too. Interestingly, the sustainability performances of Germany, Austria, France and Italy are quite similar (Cucchiella *et al.*, 2017). Although the cell sizes analyzed were quite small, which could undermine the reliability of the results (Simmons *et al.*, 2011), having highly knowledgeable subjects, such as bank directors, as opposed to large cell sizes is a more appropriate way of answering our research question: What are bank directors' perceptions concerning the credibility of assured CSRR? Despite the relatively low power of a small sample test, we were able to find highly significant results.

There are a number of lessons to be learned from our findings that present future research opportunities. First of all, given that CSRR assurance is viewed positively, future research could examine the conditions under which companies prefer to have their CSRR assured. In line with Cohen and Simnett (2015, p. 72), it may be worthwhile investigating "whether assurance on CSRR will or will not, be considered a frivolous luxury if a company is in retrenchment mode." More generally, "in this relatively under-researched but potentially rich and fruitful area for future research [...] nearly every research question and research method that has been examined in financial statement audit research can be explored for CSRR assurance," claim Cohen and Simnett (2015, p. 71). This leaves open a vast number of research questions to be explored.

Future work could also investigate whether stakeholders' perceived credibility of CSRR assurance is subject to report quality. In addition, the credibility of CSSR assurance can also be influenced by the type of underlying assurance standards (e.g. ISEA 3000 vs AA1000AS standard; Farooq/de Villiers 2019). This leads to another promising avenue of future research, to investigate whether stakeholders' perceptions and decisions differ according to the applied assurance standard. CSSR assurance engagement differ from narrow to broad in scope and are tailored to reporters' requirements (Farooq and de Villiers, 2020). Future studies could investigate whether such scope variations impact credibility perceptions of stakeholders.

Notes

1. The answers of another 14 participants could not be used, for example, because they did not provide information with regard to all dependent variables. Furthermore, we received many responses from participants explaining why they were not willing to participate in our study, for example, due to a lack of time, the fact that the bank is very specific and does not grant credits to companies or the argument that the bank does not have listed clients. Thus, the response rate is much higher than the participation rate. For many analyzes, N is smaller than 109, as the questionnaire was not completed in full by all participants.
2. *RELY*: mean early respondents = 4.0, mean late respondents = 4.4; $t = -0.771$, $p = 0.443$; *CREDIT*: mean early respondents = 59.2%, mean late respondents = 57.5%; $t = 0.227$, $p = 0.821$; *ADVICE*: mean early respondents = 3.78, mean late respondents = 4.12; $t = 1.303$, $p = 0.195$; *CREDIT*: mean early respondents = 43.2%, mean late respondents = 49.7%; $t = -0.933$, $p = 0.354$; *INVEST*: mean early respondents = 43.8%, mean late respondents = 54.1%; $t = -1.344$, $p = 0.184$.
3. We exclusively invited directors to participate in the study. However, we assumed that some directors passed the experimental materials to staff members or that they did not arrive at the directors but were treated by staff members. Therefore, we asked for the hierarchical position and the responses confirmed our assumption.
4. The application of *t*-tests requires a normal data distribution and assumes equal variances in the two sub-samples. The assumption of normality was violated; however, Mann–Whitney U-tests confirm our findings.
5. These ANOVAs are based on two broad assumptions: a homogeneous variance and normality. Homogeneous variance was proven by Levene-tests. Normality was not proven for most of the dependent variables according to Shapiro Wilk-tests. However, the ANOVA results are robust as non-parametric Scheirer-Ray-Hare tests lead to similar findings.
6. The post hoc analyzes are based on parametric tests and again the assumption of normality was violated. Therefore, we additionally applied Kruskal-Wallis-tests with Benjamini-Hochberg adjustments, which confirm our original results.

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Further reading

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Experimental case

Case

General. “Engineering Factory AG” is a mechanical engineering company with its headquarters located in Frankfurt, Germany and with 20 subsidiaries around the world. It produces a broad range of machines with a focus on computerized numerical control (CNC) machining centers for diverse use cases. Since 2016, it has produced robotic systems for additional automation in their CNC machining centers. In recent years, “Engineering Factory AG” has been successful in selling its products both nationally and internationally.

“Engineering Factory AG” has 1,086 employees and its current labor agreement will end on February 28, 2020.

Stocks of “Engineering Factory AG” are listed in the Prime Standard of the Frankfurt Stock Exchange.

Business situation. “Engineering Factory AG” increased sales from €591m (2017) to €603m (2018). The net income slightly increased from €110m to €115m. Cost of materials increased by 5% to €262m due to a higher output and increased prices for raw materials. Labor costs increased by 8% to €108m due mainly to an increase in the number of employees. The personnel expenses ratio is usual in the industry.

In comparison to 2017, balance sheet total has marginally increased by €24m, i. e. increased to €396m. The following figures provide further balance sheet information on the structure of assets and capital at the financial year end December 31, 2018 and December 31, 2017:

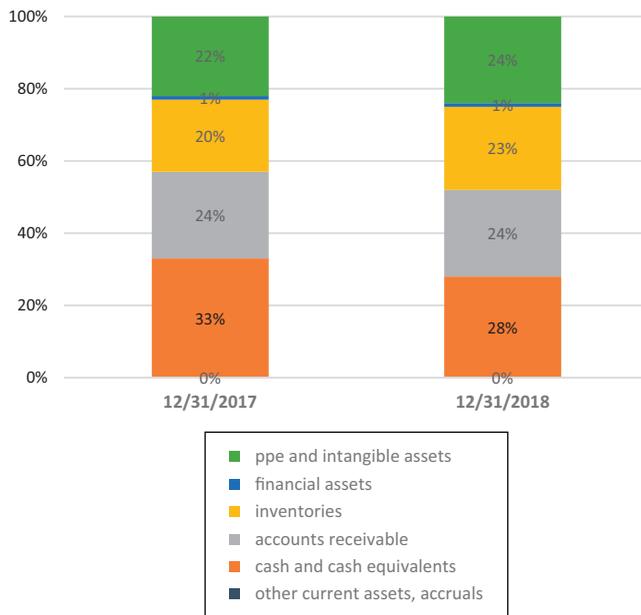


Figure A1.
Structure of assets

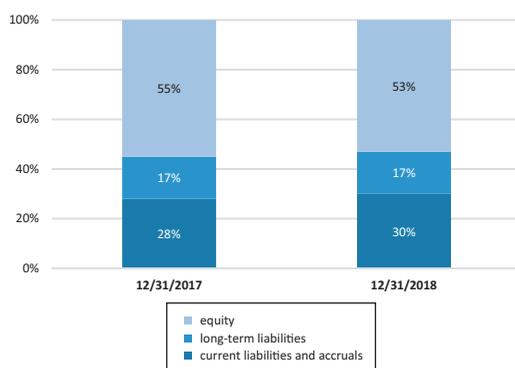


Figure A2.
Structure of capital

In 2018, a positive free cash flow of €122m was generated (2017: €121m). The price earnings ratio is 12 (2017: 11).

Corporate governance. The management board of “Engineering Factory AG” consists of three members. These chairpersons receive a fixed basic salary and some fringe benefits such as cars. In addition, the supervisory board determines annually in December a performance-related compensation based on existing contracts.

The supervisory board consists of seven members, two of them represent employees. All members receive a fixed payment at year end and a reimbursement for expenses.

All members of the management and of the supervisory board possess the necessary professional and personal capabilities.

CSR reporting. “Engineering Factory AG” publishes a separate CSR report on its website. Its CSR reporting includes a description of the business model, environmental, social and employee matters, the respect for human rights and anti-corruption and bribery matters. This corresponds to the sector’s companies’ practices.

Auditor. Since 2012, the accounting firm ABCD is responsible for the statutory audit. ABCD is one of the Big 4 accounting firms which operate on the German audit market. ABCD has always issued an unqualified audit opinion and there has been no disagreement between management and ABCD over accounting principles, the financial statements and the scope of the audit or the type of audit procedures.

ABCD performs the statutory audit in accordance with the auditing requirements of the German Commercial Code, the EU regulation on statutory audits of public-interest entities (Regulation (EU) No 537/2014), the auditing standards of the German Institute of Auditors and the International Standards of Auditing.

ABCD was appointed by the supervisory board of “Engineering Factory AG” and an election by the general meeting.

ABCD also provides an unqualified opinion for the 2018 audit.

Moreover, ABCD (the technical control board) provides assurance on EF AG’s CSR reporting. It concludes: “Based on the procedures performed, nothing has come to our attention that causes us to believe that the CSRR of EF AG for the period from January 1, 2018, to December 31, 2018, is not prepared, in all material respects, in accordance with the Sections 315b, 315c in conjunction with Sections 289b to 289e HGB”.

Moreover, ABCD (the technical control board) provides assurance on EF AG's CSR reporting. It concludes: "In our opinion, on the basis of the knowledge obtained in the audit, the CSSR of EF AG for the period from January 1, 2018 to December 31, 2018 complies, in all material respects, with the Sections 315b, 315c in conjunction with Sections 289b to 289e HGB".

Audit fee. The audit fee paid to ABCD for the statutory audit of the financial statements 2018 is €212,500. In addition, ABCD earned €26,250 for the provision of non-audit services in the same year.

About the author

Reiner Quick is a Professor of Accounting and Auditing at Darmstadt University of Technology. His research interest focuses on audit quality and auditor independence, the auditor's report, audit markets and audit methodology.

Professor Petra Inwinkl is affiliated with the Technical University of Vienna. She holds doctoral degrees in law from the University of Vienna and in business administration from WU Vienna University of Economics and Business. She has held various positions including visiting appointments at the Jönköping University, Macquarie University, University of North Carolina at Chapel Hill and the University of Vienna. Her research interests cover various aspects of corporate governance including audit committees, auditing of public interested entities, international accounting, corporate mergers and acquisitions and valuations. Petra Inwinkl is the corresponding author and can be contacted at: petra.inwinkl@tuwien.ac.at