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THE GLOBAL REPORTING INITIATIVE AS A TOOL FOR ANALYZING CORPORATE TAX AVOIDANCE?

The Global Reporting Initiative as a tool for analyzing corporate tax avoidance?

Evidence from 581 Small-Medium, Large and Multinational Organizations

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Abstract

This research approaches corporate tax avoidance as a sustainability problem and addresses the following research question: ‘What is the linkage between the Global Reporting Initiative, as a sustainability disclosure standard, and corporate tax avoidance?’ By addressing the relationship between GRI sustainability reports and effective tax rates based on a sample stock listed organizations, the contribution of corporate activities by disclosing sustainability information according GRI-standards on the occurrence of tax avoidance was examined. Presented results displayed evidence of the existence of an asymmetric effect between GRI sustainability disclosure and corporate tax avoidance.

Keywords: Tax avoidance, sustainability disclosure, GRI, ETR,

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2. Introduction

Organizations exploit opportunities for avoiding income taxation. Exploitation of tax avoidance results in corporate activities that locate operations in low-tax countries, shift incomes from high-tax locations to low-tax locations, usage of differences between the tax rules of countries and by taking advantage of tax subsidy agreements with and between countries (Olhofs-Rego, 2003). The issued Panama Papers in 2016 gave a striking insight into modern tax avoidance practices, by making use of so called 'tax havens'. These papers exhibited abundant tax avoidance practices of organizations, interest groups and even individuals without evident violations of legal frameworks, (Chohan, 2016). Tax havens are mainly characterized by their appeal of deliberate lack of transparency, which makes their analysis challenging. For example, estimates of the size of global offshore assets vary widely from \$7 to \$32 trillion (O'Donovan, Wagner, & Zeume, 2016). After the diffusion of the Panama Papers, public administrators denoted reforms to address corporate tax avoidance. However more recently, the European Union indicated that the size of yearly avoided income taxation by organizations through EU-member states amounts 832,5 billion euro (Murphy, 2019). Such corporate tax avoiding practices result in considerable differences between the amount of tax revenues that are actually collected by tax authorities and the sum of tax revenues that could be collected if tax legislation is adhered more vigorously.

Corporate tax avoidance can barely be seen as just a levy problem for tax authorities, but more of a problem that indicates organizational regulative nonconformity, contestable integrity and prepossessed legitimacy, that ultimately addresses reconsideration of the organization's responsibilities and business ethics (Bird & Davis-Nozemack, 2018). A broader and more comprehensive understanding of the consequences of corporate tax avoidance is realised through applying an institutional and stakeholder approach and by defining tax avoidance as a corporate sustainability problem (Avi-Yonah, 2014; J. M. Fisher, 2014). Application of a stakeholder and institutional approach can be deemed suitable for the present research setting, since it allows for focussing on social mechanisms and constituents that play a role in corporate tax avoidance. Tax payments can be defined as a prerequisite for sustaining modern societies by provisioning the distribution of public goods. As a consequence, corporate tax avoidance practices impede the ability of governments to provide public goods and distribute wealth, essential for modern societies. Moreover, corporate tax avoidance is double edged; organizations make convenient use of public goods, but also take great efforts to avoid as much contribution as possible to fund public goods. From a corporate sustainability perspective, this results in a sustainability problem, because it is not compatible with the founding assumption that organizations should solve the needs of current stakeholders without compromising the ability to solve the needs of future stakeholders. To solve this sustainability problem, established sustainability metrics could have the capacity to include tax avoidance measures or highlight firms that engage in corporate tax avoidance. This, however, is not a straightforward inquiry since it requires integration of corporate sustainability into the organizational system.

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Academics have found little consensus on the proposition that organizations with considerable sustainability performance are less likely to commit tax avoidance (Davis, Guenther, Krull, & Williams, 2016; Lanis & Richardson, 2012). Propositions regarding the way in which organizations should integrate and manage a higher sustainability performance also have not reached consensus yet. As an illustration, Arjaliès & Mundy (2013) depicted a gap in contemporary literature which indicates an insufficient understanding of managing strategic processes that allow for corporate sustainability integration. Moreover, literature studies shows various metrics or tools of which it is generally accepted that it could support companies in integrating corporate sustainability into their organisational system (Witjes, Cramer, & Vermeulen, 2017). Nonetheless, clear distinctions how these tools actually support corporate sustainability integration and thereby possibly affect corporate tax avoidance practices are nominal.

A proposed metric that possibly can contribute in integrating corporate sustainability and address the sustainability problem of corporate tax avoidance involves a code of conduct for integration of and reporting on corporate sustainability, a concept better known as sustainability disclosure. A well-known and widely applied sustainability disclosure standard concerns the Global Reporting Initiative (Global Reporting Initiative, 2016a), (GRI). The GRI sustainability disclosure standard supports organizations to disclose both financial and non-financial information based on the triple bottom line concept that addresses the economic, environmental and social impact of organizations (Dyllick & Hockerts, 2002; Elkington, 1997). In short, GRI provides organizations with universal guidelines to achieve and report organization specific developments in sustainability topics such as economic value creation and distribution, ecological impact, governance practices as well as developing social value within and outside the company.

Organizations willingly to integrate corporate sustainability into their systems are increasingly adopting sustainability disclosure guided by GRI-standards. However, ambiguous concerns about GRI's functionality and specificity are not unspoken within academic literature. This is mainly due to the assumption that sustainability disclosure offers organizations possibilities of 'cherry picking' and eschewing societal issues which they may impact (Hopwood, 2009; Milne & Gray, 2013; Thijssens, Bollen, & Hassink, 2014). In addition, a case study conducted among MNEs substantiated GRI's reporting standards as insufficient to highlight and comprehend the complexity of organizational social impact (Toppinen & Korhonen-Kurki, 2013). Levy & Brown (2010) noted that the emergence of GRI standards did not result in the locus of data that are vis-à-vis comparable across organizations to enhance true accountability. More fundamental, Moneva et. al. (2006) provided criticism that the GRI concept for organizations to integrate sustainability reveals problems such as (1) running risk of obscuring an integrative view on sustainability by development of separate indicators, and (2) potential compromising of an integrative view by promoting the of optimization of a set of indicators instead of compelling to the founding assumption of corporate sustainability.

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GRI sustainability disclosure concerns a voluntary activity and since differences in tax compliance exist, organizations differ in how they perceive the payment corporate taxes. This results in some organizations that do not disclose any information about their tax propositions (Davis, Guenther, Krull, & Williams, 2013). Moreover, it builds on academic criticism that the varying ways of implementing sustainability disclosure erodes its meaningfulness, since it presumably could portray an untrue reflection of ‘accountability’ towards stakeholders (Hopwood, 2009; Thijssens et al., 2014). Nevertheless, this does not mean that organizations willingly or actually complying to the GRI standards do not disclose their tax propositions to a greater extent or even adopt GRI’s position on tax compliance because stakeholders demands increase in doing so, (Willis, C. A., 2003).

Although academic literature provides arguments for as well as against sustainability disclosure and the GRI, specifics into a possible correlation of GRI, sustainability disclosure, and corporate tax avoidance are still lacking in academic literature. By addressing the relationship between organizations that integrate corporate sustainability through realizing GRI sustainability disclosure standards and the effect on corporate tax avoidance, this research intends to provide new theoretical insights into the existing body of academic knowledge on the phenomena of corporate tax avoidance and sustainability disclosure. Moreover, by integrating extant work on corporate sustainability in conjunction with tax avoidance and GRI, this research aims to characterize the effect of the most frequent used sustainability disclosure standard for organizations, GRI, in corporate tax avoidance (i.e. actions that organizations undertake to lower their tax burden). By doing so, this research also aims to enhance current research regarding the methodology for measuring GRI-application levels by expanding the scope and scale of measurement. Identification of the relationship of GRI sustainability disclosure and corporate tax avoidance can finally lead to; new theoretical insights in sustainability disclosure as a tool for sustainability integration, new theoretical insights in stakeholder and institutional theory by application to the phenomena of corporate tax avoidance, elevated attention to approaching corporate tax avoidance as a corporate sustainability problem, the development of new tools for analyzing corporate tax avoidance, and new insights for institutions or entities specialized in corporate sustainability or corporate tax compliance. The following research question is stated:

RQ: *‘What is the linkage between the Global Reporting Initiative, as a sustainability disclosure standard, and corporate tax avoidance?’*

3. Theory

The following section provides a theoretical conceptualization of the phenomena corporate tax avoidance, sustainability disclosure and GRI. Reviewing prior literature, sketching main findings and aligning theories within the academic field allows for the development of hypotheses.

3.1 Corporate tax avoidance

3.1.1 Defining corporate tax avoidance

Although the limited diffusion in contemporary business literature may provide oversight in the intensity, determinants and consequences of corporate tax avoidance practices, a broadly accepted definition of corporate tax avoidance is still lacking (Hanlon & Heitzman, 2010). As a 'tax' can simply be defined as a compulsory levy imposed by the government on the income or wealth of a person or corporate entity without the involvement of direct compensation in return (Payne & Raiborn, 2018 p.469). The way in which taxes are imposed, through laws and regulations, offers organization variation in the level of obligation to paying taxes and thus varying organizational behaviour regarding making tax decisions.

Various corporate tax avoiding activities positioned across the thresholds of legality versus illegality and compliance versus noncompliance encouraged the conceptualization of several latent terms within business literature to describe corporate tax avoidance behaviour (aggressiveness, sheltering, evasion). The threshold of legality versus illegality builds upon on the degree of 'abiding by the spirit of the law' and 'abiding by the letter of the law' (Dowling, 2014 p.174). Furthermore, a range between the two extremes of legality and illegality exists that represents a grey area in which it is not apparent whether the activities are legal or not. Corporate tax (1) aggressiveness, (2) sheltering and (3) evasion represent individual tax avoidance characteristics and therefore reflect specific tax motivated activities (Lisowsky, 2013). (1) Tax aggressiveness suggests that the weaker the justification of an organization's tax position, the more reasonable it is to doubt the level of compliance and legality that the tax position holds (Hanlon & Heitzman, 2010). (2) Tax sheltering considers a specific category of tax motivated activities by the use of tax loopholes, misstatement of tax positions and offshore tax havens which test the frontiers of legality. (3) Tax evading refers to tax motivated activities committed to deliberate intent to fraud and are therefore considered illegal (Crocker & Slemrod, 2005). Corporate tax avoidance ranges from purely legal activities, which are under strict compliance such as selecting specific accounting depreciation methods or tax-privileged investments, to possible illegal activities under noncompliance such as tax sheltering, until entirely illegal non-compliant evasion activities with the intention to fraud.

In summary, perfectly nonaggressive legal tax avoiding activities, more doubtful tax aggressiveness, questionable tax sheltering, and fraudulent tax evasion are all covered under the generic conception of corporate tax avoidance (Dyreng et. al., 2007). Because the present study does not imply to discriminate between specific corporate tax behaviour or activities, and moreover aims to capture the

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overall scope in which firms reduce their tax liabilities, the most broad definition of corporate tax avoidance as ‘the reduction of explicit taxes’ is adopted (Christensen, Dhaliwal, Boivie, & Graffin, 2015 p.1992 ; Hanlon & Heitzman, 2010 p.27). By defining corporate tax avoidance in such a way it reflects all organizational activities that lowers the organization’s explicit tax burden or liability. This definition, however, does not distinguish between the magnitude or distribution of specific tax motivated activities that are applied (e.g. aggressiveness, sheltering, evasion), nor differentiate for legal or illegal tax avoiding activities.

3.1.2 Theoretical approaches towards corporate tax avoidance

Tax systems can reveal different characteristics and consequences for individuals and organizations when applying different theoretical perspectives or points of view.

Allingham & Sandmo (1972) apply a game theoretical approach to tax avoidance and describe the individual process whether to comply or avoid taxation as decision-making under uncertainty in which the individual decision maker seeks for the highest expected utility or pay-out. Determinants for tax compliance or avoidance therefore correlate with the probability of detection and punishment, receiving tax-penalties, risk-orientation profile as well as intrinsic motivations such as civic duty or tax morality. The authors finally conclude that the rational, consistent, individual will always declare less income and short sighted avoid taxes, until this behaviour becomes discovered and he or she will declare everything de facto. These determinants also apply till some extent for corporate tax decisions, although more fundamental issues arise when tax decisions are examined from an organizational perspective (Fisher & Fairbanks, 1967; Hanlon & Heitzman, 2010).

Graham (2003) dictates from a corporate financing approach that country specific tax structures correspond to varying organizational capital structures, organizational form and restructuring efforts, pay-out policies, compensation policies and risk management. The author states that from a finance perspective, tax avoidance is mainly seen as an instrument to gain debt tax benefits, decrease the cost of capital and boost firm value. This is in line with the most elemental approach of corporate tax avoidance in business literature, which is rooted in the neoclassical theory of the firm (Rumelt et. al., 1994). The neoclassical theory of the firm approach considers the government’s imposition of taxes as detrimental for organizations since it hindrances organizations in the main objective of maximizing profits and with it maximizing shareholder value (Desai & Dharmapala, 2009; Landry, Deslandes, & Fortin, 2013). Given the main objective of maximizing shareholder value, organizations conceive financial incentives to adopt tax strategies that allow them to minimize their taxes and raise profits. Another distinguished theoretical approach towards corporate tax avoidance is grounded in agency theory (Eisenhardt, 1989). This approach examines corporate tax avoidance primarily from the relationship of monitoring problems between corporate shareholders as principals on one side, and managers as agents on the other (Crocker & Slemrod, 2005; Hanlon & Heitzman, 2010). This approach also applies income taxation as a significant cost for organizations which directly affects

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profitability, shareholder returns, and firm value in general, but the focal core points to financial incentives for managers to develop and implement strategies that allow for minimizing tax payments and the occurrence of opportunism that comes with it. Misguided risk-seeking, opportunistic tax avoidance strategies of managers therefore call for more extensive monitoring of management (agents) by ownership (principals) which inherently increases costs. From an agency perspective, forthcoming corporate tax avoidance activities depend on whether the expected incremental benefits of minimizing tax payments exceeds the incremental monitoring costs or not.

Although the neoclassical theory of the firm and agency theories represent conventional and distinguished bodies of knowledge on corporate tax avoidance, other settled theories coexist in business literature and can be deemed as more suitable for the present research setting, since more substance is drawn on the social mechanisms and constituents that play a role in corporate tax avoidance instead of merely financial incentives.

3.1.3 Converging a stakeholder and institutional theoretical approach

Although contemporary business research has not managed yet to provide distinctive empirical evidence into the socioeconomic effects of corporate tax avoidance, it is clear that corporate tax avoidance practices decline governmental income and impede the ability of governments to provide public goods and the distribution of wealth in general, which ultimately are essential for modern societies. It is not hard to imagine that extensive corporate tax avoidance activities play a role in shifting tax burdens to employees, consumers and small businesses, ultimately increasing economic inequality and inhibiting further economic and social development. Following this, it may not seem more than logical that the reduction of explicit taxes by corporations has potential to initiate problems which influence a broad range of people all over the world.

It is in this same line of reasoning that Freeman et. al. (2010) developed a framework of stakeholder theory. A stakeholder theoretical approach suggests that there is a better chance to effectively deal with today's societal problems if a perspective is adopted that analyses these problems from the 'relationships between a business and the groups and individuals who can affect or are affected by it' (Freeman et al., 2010 p.405). Following stakeholder theory, organizations are seen as a set of relationships among groups that have a stake in the primary activities that are conditional for the organization to exist. Management should therefore aim to orchestrate and shape these organizational relationships in that it creates as much value as possible for stakeholders, and regulate the distribution of that value. This 'stakeholder management' not only enables organizations to survive and develop economically (Bosse, Phillips, & Harrison, 2009), but it also includes the ethics of doing business because it concerns inquiring values, choices, potential harms and benefits of intended business strategies for large groups and individuals.

When this reasoning is applied to corporate tax avoidance, it supposes that when the profitability of a corporation is mainly transferred to its shareholders, as primary beneficiaries of minimizing tax

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payments, other organizational stakeholders are affected by these avoidance practices (Payne & Raiborn, 2018). In the objective of creating and distributing stakeholder value, corporate decisions on whether avoiding taxes is legitimized should, for example, include considerations on whether it could create higher employment or investments rates as a result of greater corporate expending of profits; or does it force governments to cut public services or underfund public investments that could initiate economic growth and reduce poverty. According to stakeholder theory, organizations need to consider and act upon whether various parties are affected positively or negatively consequent to their conduct, but as illustrated this is not a straightforward inquiry. Tax applies as a significant cost for organizations (Godwin, 1978), and organizations therefore regularly take great efforts to avoid as much as tax contribution possible. However, the notion that all organizations endeavour in minimizing their taxes does not hold due to the fact that tax avoidance exposes the organization to dealing with many types of risks and pressures stemming from institutions within the organizational social context the organization acts in (Dacin & Scott, 2002; Scott, 1987).

An institutional theoretical approach focuses on influences of institutional environments on organizations through processes of organizational (non)conformance to social norms and expectations. Following this approach, institutions 'are the rules of the game in a society, or more formally are the humanly devised constraints that shape human interaction' (North, 1990 p.3) Institutions can take shape in formal (laws, rules and regulations) and informal (sanctions, customs, traditions, codes of conduct) degree of formality and can, accordingly, be categorized in regulative, normative and cognitive types. Whereas regulatory institutions are formal and establish rules, monitor compliance and have the possibility to sanction, punish or reward; normative institutions are more informal and can set prescriptive, evaluative and rather obligatory rules into the social context. Cognitive institutions are most informal and shape meaning and perceived reality through shared beliefs, languages, and cultures (Scott, 1995). Institutions can put pressures on organizations, since they have the ability to sanction undesirable organizational behaviour. The main premises of institutional theory therefore states that organizations strive for external legitimacy from the social context in order to operate but also to reduce uncertainty and provide stability. Organizations accordingly adopt their behaviour (i.e. structures, procedures, ideas) to obtain legitimacy and support from and within the social context or imitate (structures, procedures, or ideas) from organizations of which it is perceived it will increase legitimacy, (DiMaggio & Powell, 1983).

Following an institutional perspective, corporate strategies designed to minimize taxes all across the threshold of legality versus illegality expose organizations to different institutional pressures and with it associated risks (Christensen et al., 2015). (1) Tax risks refer to the occasion that tax regulators or authorities can disapprove organizational tax reporting propositions, whether tax avoidance practices have been applied or not. Tax regulators and authorities can put regulative pressures on organizations by charging organizations to pay lost taxes, fines, penalties, and interest. Tax avoidance can likewise expose organizations to (2) reputational risks (Antonetti & Anesa, 2017).

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Public revelation of tax avoidance can put normative pressure on organizations by targeting public protests, media attention, and activist groups to such an extent that its organizational reputation is harmed and may result in customer backlash or dropping stock prices. (3) Political risks can arise for tax avoiding organizations on the grounds that public sentiment can evolve in such ways that organizations are not paying their fair share of taxes. These political risks can thereupon raise regulative, normative as cognitive pressures to take further actions in forms of adverse legislative or regulatory action or tax law changes, introducing new codes of conduct, or change shared beliefs and thereby potentially inflict damage on the organization.

Tax avoidance can expose organizations thus to an extensive range of pressure and inherent risks which can have significant implications. How these risks are managed depends on the organizational degree of conformity to particular pressures. Managing these risks can be done by designing tax structures or investments such that it strengthens the organizational ability to operate (compliance), by increasing external legitimacy or at least preserving it; or compel tax structures or investments such to make it difficult for regulators to identify the true economics of the organization (noncompliance), putting external legitimacy at risk. Following a likewise rationale, Oliver (1991) distinguished several corporate response strategies (acquiescence, compromise, avoidance, defiance, manipulation) to external pressures. Particular strategies represent varying degrees of which organizations conform to expected social norms of behaviour, or respond to external pressures through applying a range of strategies that eventually may alter the need of compliance and may apply as a rationale for organizations that do and do not avoid taxes. Acquiescence is based on the rationale that comprehensive conformity to institutional pressures serves the organization's interest. This results, in the case of corporate taxation, in organizations that consciously and strategically comply with evolving tax systems and rules in order to pertain legitimacy and reduce uncertainties. Acquiescence responding organizations, do not avoid taxation. Compromising response strategies only represent partial conformance, in which organizations take an active stand in promoting their own interests, which diverge from the institutional pressures imposed. Compromising strategies result in organizations that balance, bargain, and pacify tax system and rules and eventually avoid taxes by, for example, usage of differences in tax systems of countries or by negotiating tax agreements with governments. Avoidance response strategies are based on the 'desire to circumvent the conditions that make conforming behaviour necessary' (Oliver, 1991 p.156) in which organizations buffer or conceal themselves towards tax regulation by more tax aggressive activities to justify the organization's tax position, or even may apply tax sheltering activities by locating operations in low-tax countries or shift income from high-tax locations to low-tax locations (Laamanen & Simula, 2012). Defiance and manipulation response strategies eventually represent the most non-conforming response strategies, in which organizations reject the institutional pressures, or in the case of manipulation even change or exert institutional pressures. Organizations that apply defiance or manipulation strategies, apply

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extensive tax avoidance activities, and may even breach the threshold of legality through evading taxes in order to challenge, attack and influence the systems they are supposed to be constrained to.

3.2 Corporate sustainability

After several commemorated publications (Carson, 1962; Malthus, 1798; Meadows, 1972) alarming the earth's limited capacity to support further economic development of our modern society, it was Brundtland (1987) that coined the term 'sustainability' and set the still widely accepted and applied definition that future socioeconomic development should 'meet the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland, 1987 p.16). An engagement between ecological and economic dimensions to prevent hindering future human development. After that, it was Elkington (1997) with his 'triple bottom line' concept to successfully introduce a strategic framework for organizations into the field of academic business literature in which economic prosperity, environmental management and social accountability were approached as aspects of equal importance.

Corporate sustainability requires that firms embrace the economic, ecological and social expectations of all stakeholders it concerns, instead of merely serving the expectations of financial shareholders (Dyllick & Hockerts, 2002). Corporate sustainability compels organizations to embrace and integrate the principles of ensuring ecological integrity, economic prosperity and social equity in which it is preserved that organizational action (1) does not erode the earth's land, air, and water resources; (2) creates and distributes goods and services such that will help to raise the standard of living of affected stakeholders and ensures equal access to resources (3) adds value to the communities in which it operates by increasing human capital of organizational partners as well as increasing the societal capital of affected communities. Moreover, organizational action should be performed in such a way that stakeholders understand and subscribe to the underlying motivations of the organization's value systems (Bansal, 2005; Dyllick & Hockerts, 2002).

The conceptual linkage between the phenomena corporate tax avoidance and corporate sustainability, or in other words the application of corporate tax avoidance as a sustainability issue, lies in the fact that (1) the key assumption declares that an organization has a responsibility to pay its share of taxes which is in line with stakeholders expectations on it, and which ultimately can be perceived as 'fair'. In light of these concerns, external stakeholders recently have increased their focus and expectations of corporate tax behaviours and more specific its tax avoiding activities (Murphy, 2019), of which hardly can be believed that organizations conform to these increased expectations, when the entrenchment and extensiveness of corporate tax avoiding activities is examined, (Allred et al., 2017; Chohan, 2016; O'Donovan et al., 2016; Olhoft-Rego, 2003). Furthermore, (2) corporate tax avoidance practices can be considered as a breach of the key assumptions of corporate sustainability, when it's believed that it impedes the government's ability to provide public goods and the distribution of wealth in general. Corporate tax avoiding activities therefore negatively affect the government as

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legitimate stakeholder, but also society at large because it deprives essential resources, lowers the standard of living and imbalances the equal access to the resources of affected stakeholders.

3.2.1 Stakeholder and institutional theory underpinning corporate sustainability integration

Present business literature differs greatly in setting and prescribing dissertations regarding the way in which organizations should integrate and manage corporate sustainability. Stakeholder and institutional business literature however does suggest that organizations that pursue the integration of corporate sustainability should involve at least three basic processes of environmental assessment, stakeholder management, and issues management (Wood, 1991). Environmental assessment contains the act of scanning the external organizational landscape to identify triple-bottom line issues (social, economic, and environmental) and subsequently behave to them appropriately (Bansal, 2005). As mentioned earlier, stakeholder management aims to establish organizational relationships such that as much value as possible is created for legitimate stakeholders. Setting strong stakeholder relationships, transparent operations, representation of stakeholders in organizational decision making, and decent distribution of generated value created among legitimate stakeholders allows firms to detect and respond to extensive societal problems of individuals and groups outside organizations that have a legitimate stake in the organization (Freeman et al., 2010). Social issue management refers to organizations addressing and tackling societal issues, although ‘direct ties to the relationships between the firm and its stakeholders’ (Hillman & Keim, 2001 p.219) are absent.

Although the integration of corporate sustainability thus involves three basic processes of environmental assessment, stakeholder management, and issues management, institutional theoretical assumptions also represent significant processes that affect integration of corporate sustainability into the organizational system (Bansal, 2005). First of all, as individual values and beliefs on corporate sustainability represent normative as cognitive institutions pressuring the organization; the degree of organizational conformance to integrate sustainability therefore will affect the organization’s acceptability and legitimacy. Second, distinguished actors of corporate sustainable integration will affect informal institutions through establishing norms, common beliefs, and discourses to determine that the adoption of a given sustainability practice complies. Third, and most elemental, it is likely that a great substance of corporate sustainability integration will be institutionalized more formally through codes of conduct, regulations and international agreements (Bansal, 2005; Green, 2004).

3.2.2 Corporate sustainability disclosure

Organizations employ various tools or practices that provide them with data for identifying opportunities and risks associated with the integration and management of sustainability related decisions; inform stakeholders about the organizational impact of corporate processes on the triple bottom line dimensions; and track the development of corporate strategies towards corporate sustainability (Witjes et al., 2017). A widely diffused sustainability integration practice concerns corporate sustainability disclosure (Kim & Lyon, 2015). Sustainability disclosure references to the

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triple bottom line terms introduced by Elkington (1997) and embraces the concepts of managing, measuring and reporting elements of the organization's social, environmental, and economic impacts (Milne & Gray, 2013). Corporate sustainability disclosure concerns a voluntary practice and results in a corporate sustainability report that in general provides 'a mixture of strategic and operational, monetary and non-monetary, quantitative and qualitative information' (Schaltegger & Wagner, 2006 p.11) stemming from performed assessments of the corporate operations, interactions and links between social, environmental and economic issues constituting to the three dimensions of sustainability. A sustainability report evaluates which and to what extent an organization applies strategies in relation to corporate sustainability with the possibility to audit their sustainability report externally to confirm the reliability the performed assessments. The preeminent aim of corporate sustainability disclosure is situated in achieving comparable, transparent and complete sustainability performance indicators. However as phrased, aiming implies a need of organizations to set and adopt universal sustainability reporting standards and indicators. Setting universal sustainability reporting standards has nonetheless shown to be problematic, since organizations are confronted with diverging pressures between the demands of shareholders, and both internal as external stakeholders (Doshi, Dowell, & Toffel, 2013). Organizations can therefore posit incentives to exaggerate (greenwash) their sustainability accomplishments through their information disclosure strategies, or even choose to understate (brownwash) their sustainability achievements (Kim & Lyon, 2015). This in turn facilitated the development of accounting and reporting standards to better ensure consistency and higher information quality.

3.2.3 The Global Reporting Initiative

In line with the great diffusion of sustainability reporting, a wide array of established organizations (industry associations, nongovernmental organizations, consultants and accountancy bureaus) developed guidelines for sustainability reporting (Etzion & Ferraro, 2010). However many guidelines coexist, it was the Global Reporting Initiative that developed and introduced a strict international standard for reporting economic, environmental, and social performance of organizations since its establishment in 1997. After its establishment, the GRI became a leading standard for organizations to voluntarily report on sustainability, and can be observed as a case of institutional entrepreneurship (Brown, de Jong, & Levy, 2009; Etzion & Ferraro, 2010). Institutional entrepreneurship can be defined as 'actors who initiate and actively participate in the implementation of changes that diverge from existing institutions' (Battilana et al., 2009 p.70) Moreover, the GRI gained legitimacy by theorizing the change they wish to effect (David, Sine, & Haveman, 2013): (1) Serving information as an instrument for private civil regulation through mobilizing stakeholders to demand particular performance levels and provide a channel for transparency, and; (2) the creation and further development of codes of conduct initiate new organizational norms and practices that lead to new understandings in organizational responsibility and accountability (Global Reporting Initiative, 2016a;

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Levy & Brown, 2010). Besides, the GRI developed and specified sustainability issue related categories of actors and according international standards (OECD, UNGC, IFC, ISO, SDGs) and conceptualized the generic organizational problem of integrating sustainability by justifying sustainability reporting as a solution to this problem. The GRI therefore develops and poses strategies in order to gain legitimacy and to promote and institutionalize sustainability reporting practices that emphasize organizations to implement corporate sustainability related changes.

Although GRI's intentions of solving stakeholders demands and enhancing transparency seem pretentious and are hardly empirical tested, sustainability disclosure as a key concept has proven to provide distinctive function. Brooks & Oikonomou (2018) stated that high quality sustainability reports are generally associated with better corporate sustainability performance. Moreover, Hummel & Schlick (2016) denoted that high sustainability performing organizations provide high-quality sustainability reports to signal their performance to the market. In contrast, Guidry & Patten (2012) found that lower sustainability performing organizations present low-quality sustainability disclosure to disguise their performance and try to protect organizational legitimacy.

3.3 Hypothesis development

Frey & Torgler (2007) stressed the importance of the effect of institutions on tax avoidance. The authors imply that the degree of tax avoidance is influenced by (1) the capacity to formulate and implement sound tax policies and (2) of most importance for this research, the recognition of institutions to govern economic and social interactions of organizations, by inducing rules of engagement through legislation or controlling efforts through implying codes of conduct. When building on the importance of institutions as contributing conditions for corporate tax compliance, GRI has potential to contribute in controlling corporate tax avoidance, since implying its codes of conduct implies disclosing tax specific information which could enhance transparency (Global Reporting Initiative, 2016c). Moreover, GRI perceives noncompliance to tax obligations as unethical, since it recognizes that tax avoidance is not a way in which organizations make positive contributions to society, but that payment of corporate taxes support government programs and improve social welfare. The GRI therefore has the potential to exert institutional pressure on organizations to increase conformity to tax systems and preserve organizational legitimacy. This leads to the development of the first hypothesis:

H1: Organizations are likely to commit less avoidance when it practices sustainability disclosure according to the GRI standard. (GRI sustainability disclosure)

The GRI lists taxes as a core economic indicator and organizations which execute GRI-standards are asked to provide detailed information on tax payments: 'An organization can calculate payments to governments as all of the organization's taxes plus related penalties paid at the international, national, and local levels.' (Global Reporting Initiative, 2016b p.7). However, sustainability disclosure

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according to the GRI-standards still concerns a voluntary corporate activity. This results in some firms that do not disclose any information about their taxes, since organizations respond differently to institutional pressures through applying a range of conformance strategies that alter level of compliance. Different corporate response strategies to applying the GRI sustainability disclosure standard can therefore also affect organizations in how they view, report and ultimately apply corporate tax avoidance. This results in the development of the second hypothesis:

H2: Organizations are likely to commit less avoidance when its GRI sustainability report is compliant to the GRI sustainability disclosure standard. (Compliance)

As mentioned, organizations adopt their behaviour (i.e. structures, procedures, ideas) to obtain legitimacy and support from and within the social context, but also by imitating (structures, procedures, or ideas) from organizations of which it is perceived that it will increase legitimacy, but on top of that, reduce uncertainty. This leads to the development of the third hypothesis:

H3: Organizations are likely to commit less avoidance, when its GRI sustainability report is audited and assured externally (External assurance)

A main premise of corporate sustainability integration refers to stakeholder management processes of setting strong stakeholder relationships, transparent operations, and representation of stakeholders in organizational decision making. The GRI sustainability disclosure standard translates this stakeholder management by referring to the process of institutionalizing regulation through mobilizing stakeholders demands and particular performance levels. This leads to the development of the fourth hypothesis:

H4: Organizations are likely to commit less avoidance, when its GRI sustainability report is constructed with representation of a stakeholder panel. (Stakeholder panel)

Other main premises for corporate sustainability integration concern environmental assessing and issues management. As environmental assessment contains the act of scanning the external organizational landscape to identify and respond to questionable triple-bottom line impacts, social issues management refers to organizations that address and tackle societal issues, although direct relationships between the organization and its stakeholders are missing. This leads to the development of the fifth hypothesis:

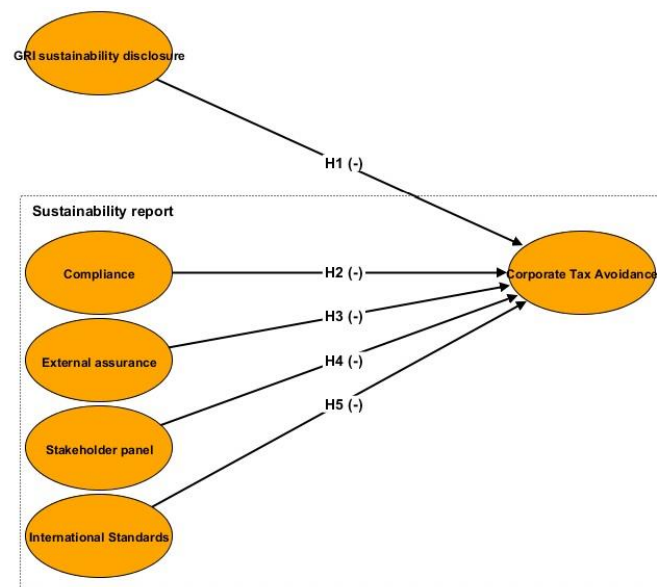
H5: Organizations are likely to commit less tax avoidance when its GRI sustainability report includes additional issue related international standards (International standards)

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4. Method

As section III ‘Theory’ acts as a conceptual fundamental point of departure in providing an empirical deductive explanation for the yielded research question, Figure I ‘*Conceptual model*’ and attachment I ‘Table 1 ‘*Overview of research population, constructs, variables and indicators*’” address the intended research operationalization in order to answer the research question: ‘*What is the linkage between the Global Reporting Initiative, as a sustainability disclosure standard, and corporate tax avoidance?*’

Figure 1
Conceptual Model



4.1 Data and sample

In order to accomplish valid and reliable measurement of the central constructs ‘corporate sustainability disclosure’ and ‘corporate tax avoidance’ a variance based research method is suggested. By accessing secondary digital data sources (i.e. databases containing financial and business related data of corporations) an opportunity exist to collect and merge financial tax data with sustainability disclosure related data of stock listed organizations. By subtracting qualitative data from the GRI-database, the content of sustainability reports that organizations produce can be analysed to indicate different posed aspects of sustainability disclosure. By subtracting organization unique identifier data from the ORBIS database, financial data regarding taxes can be obtained from the EIKON database. Obtaining financial tax data regarding the income tax expenses and earnings before taxes allows for calculating the effective tax rates that organizations convey and construction of an indicator for the dependent ratio variable to measure corporate tax avoidance.

Attachment III ‘Table 3 ‘*Sample selection and distribution*’” shows the sample selection process and sample distribution by organization region, type, size and industry group. After accessing the GRI Sustainability Database sustainability disclosure data from 6425 organizations was obtained from 1999 until 2016. The possible time series analysis spans from (2012 – 2016) since crucial

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sustainability disclosure data to compose metric and categorical variables relevant according to the intended research constructs turned out to be limited, since not all unique organizations were represented for each year. The ORBIS database was used to link GRI listed unique organizations with an identifier code essential to access corresponding financial tax data from the EIKON database. After excluding organizations with more than two missing data points to construct an indicator, a sample of N=581 remained, consisting of 2905 observations for the five year time series.

4.2 Measurement

Attachment II ‘Table 2 *Measurement overview*’ summarizes all concerned research hypothesis with related variables, descriptions and method of measurement. A description in greater detail follows below.

4.2.1 Dependent variables

The dependent variable in this research considers corporate tax avoidance. Robinson et al. (2010) tested a measurement for corporate tax avoidance, one which this research chooses to adopt, by constructing the effective tax rate of organizations (ETR). Lower ETRs result from corporate tax planning strategies designed to either reduce tax payments and manage tax accruals. Moreover, ETRs reflect book-tax differences, indicate tax motivated transactions and indicate corporations that avoid corporate taxes (Lanis & Richardson, 2012). The specific indicators applied to measure the construct corporate tax avoidance are the GAAP Effective Tax Rate (GAAP ETR) and the Cash Effective Tax Rate (CASH ETR). The pairing measurements are applied to expand the scope of analysis in order to measure corporate tax avoidance more congruently, by compensating for limitations when only one specific measure is used (Christensen et al., 2015). The GAAP ETR is calculated by dividing the total income tax expense by the pretax income (Hanlon & Heitzman, 2010). The CASH ETR is calculated by determining and dividing cash taxes organizations paid by the total pretax income (Dyreng et al., 2007). Both ratios reflect the closer to 0, the more taxes a firm avoids and the closer to 1, the more taxes a firm pays. Constructing the GAAP ETR and CASH ETR results in a corporate tax avoidance ratio variable that ranges from 0.0 to 1.0 due the premise that organizations cannot pay less than 0.0% and no more than 100% of its income in taxes.

4.2.2 Independent variables

Fuente et. al. (2017) applies a method of accessing the overall degree of sustainability information disclosure which this research intent to adopt and develop further by adding and adopting the score method of GRI reports initiated by Dragu & Tudor (2013): Scoring ‘0’ if GRI reporting format indicators are not disclosed, and ‘1’ if they are disclosed. See attachment I ‘Table 1 *Overview of research population, constructs, variables and indicators*’ for the indicators that relate to the specific variables. By dividing the total score of an organization (i.e. the actual sum score on compliance, external assurance or international standards) by the total possible score for that variable, an

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independent ratio variable (index-score) is constructed. Because, the independent variables ‘GRI sustainability disclosure’ and ‘Stakeholder panel’ concern only one particular indicator, these variables remain categorical.

4.2.3 Control variables

To avoid unreliable analysis and test results for robustness, several control variables are being included in the statistical testing to address for factors which fall outside the scope of this research. Representing; organization type, size, industry, country and region. The control variable organization type (private company, state-owned, cooperative, subsidiary, public institution, non-profit organization or non-governmental organization) checks whether the organizational ownership structure specifics influences tax behaviour or practice of sustainability disclosure (Landry et al., 2013; Moore, Suh, & Werner, 2017). Organization size is determined by specifying its total assets, turn over and number of employees. Moreover a categorical size variable has been included which specifies organizations into SMEs, Large and MNEs according to the definition of organizational size given by the European Commission. The industry an organization is operating in is subtracted by specifying the three-digit SIC code. In turn, the country an organization is positioned in is classified for level of development (OECD, DAC, and Non-OECD/DAC) and its region is expressed due geographical location (Africa, Asia, Europe, Latin America, North America and Oceania) since these specific contexts may demonstrate high variance in reliable rules of tax laws, regulatory frameworks and compliance conditions that may affect future findings (Allred et al., 2017; Laamanen & Simula, 2012). For all categorical control variables, (organization type, size, industry, country and region) dummy variables have been constructed, added to the data sample and included in the analysis.

4.3 Analysis

4.3.1 Regression method

In constructing an empirical explanation for the yielded research question, statistical analysis is proposed; by conducting simple linear regression analysis (OLS) potential results may indicate a significant asymmetric effect, a significant symmetrical effect, or no significant effect. Potential results should provide a foundation for statistical testing to confirm or falsify the research hypotheses H1 to H5.

4.3.2 Statistical accuracy

Data points that appeared to be significantly different than the majority of data points have been identified by using the outlier labelling technique and by constructing box and whiskers plots. Outliers can increase skewness from a normal distribution and affect the accuracy of statistical analysis or affect the sample in representing the research population. In order to consolidate external validity and generalisability outlier data has been treated using trimming techniques. To ensure that hypothesis testing is done adequately and moreover regression analysis is appropriate; all variables have been

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checked for violations of non-linearity, multicollinearity, heteroscedasticity and autocorrelation. In addition dependent variables have been checked for violations of normality.

4.4 Research ethics

Regardless of whether the research topic, approach or design considers confidential or potential harmful data, decent academic work should account for some fundamental ethical principles of doing research. However this research does not specifically imply to touch upon sensitive topics, human understandings varies and therefore some further explanation could be justified. First of all, when specific disclosure data was obtained from the GRI database, an agreement was signed that this data should not be distributed to third-parties without GRI's consent. Moreover, specifics into the scoring of individual organizations on tax avoidance or sustainability disclosure will not be highlighted, and should be treated with confidentiality and anonymity. Furthermore, it must be mentioned that financial data regarding the tax avoidance activities was obtained without the organization's explicit consent due the fact that these were obtained from relatively public accessible data sources. Additionally, although observer bias perhaps is of greater substance when newly data is generated or more qualitative observations are applied than when, established, given quantitative data sources are used; great carefulness in constructing, cleaning, testing and interpreting the data is promised to serve the independence and impartiality of the research results.

5. Results

The following sections present the findings of realized empirical research. First a section on controlling for assumptions of regression analysis and descriptive statistics will be discussed to set the stage for the main results obtained from performed regression analysis. A last section will be stated on performed robustness checks.

5.1 Descriptives

Table 4 '*Descriptive statistics*' presents statistical results regarding the mean, standard deviation, minimum value, maximum value and correlations stemming from the Pearson Correlation test of variables included in the constructed regression models. Interestingly, GRI Sust. Disclosure is significantly negatively correlated with GAAP ETR (-,115) and CASH ETR (-,109) which indicates a first inconsistency with the proposition that GRI reporting organizations avoid less taxes. Compliance shows significantly negative correlations with GAAP ETR (-,049) and CASH ETR (-,064) and therefore indicates that higher compliance to the GRI disclosure standard results in less tax avoidance. The positive significant correlation coefficient of External assurance with GAAP ETR (,045) provide some indication that organizations of which its GRI sustainability report is audited and assured externally avoid less taxes, but full consistency does not hold since the correlation coefficient with CASH ETR (,42) is not at the .05 significance level. Stakeholder panel is non-significantly negatively correlated with GAAP ETR (-,037) but is significantly negatively correlated with CASH ETR (-,66) causing inconsistency for the proposition that organizations which have their GRI sustainability report constructed with representation of a stakeholder panel commit less tax avoidance. The positive non-significant correlation of International standards with GAAP ETR (,044) and positive significant correlation CASH ETR (,071) provides partial consistency for organizations that include additional issue related international standards in their GRI sustainability report commit less tax avoidance. Table IV '*Descriptive statistics*' indicates that some independent variables correlate with each other, however an additional analysis did not suggest violation of the assumption of multicollinearity. A more narrow description on multicollinearity is presented in the next section 5.2 '*Testing assumptions*'.

5.2 Testing assumptions

Attachment IV, 'Figure 2 '*Testing for non-linearity and heteroscedasticity*'" controls for violations of the assumption of linearity and homoscedasticity between the independent and dependent variables. The table shows no reasonable indications to assume that these assumptions have been violated for the fact that the Loess-curve results that the relationship between standardized predicted values and standardized residuals is linear around zero (Field, 2013 p.505; Jacoby, 2000). Moreover the scatterplot does not indicate that the variance of the residuals is heteroscedastic across different levels of the predicted values since no distinctive pattern to the residuals plotted can be identified. Attachment V, 'Figure 3 '*Testing for normality of residuals*'" contains a constructed P-Plot to test the

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assumptions of normally distributed residuals. The table shows that data points are clustered near the horizontal line and suggest that the distribution of residuals is normal.

Attachment VI ‘Table 7 *Testing for multicollinearity*’ checks whether violations of the assumption of multicollinearity exist, by constructing Variance Inflation Factors (VIF). The assumption of multicollinearity states that correlation among independent variables should be minimum to ensure that recognized unique effects of independent variables are unbiased (Hair, et. al., 2014 p. 200). A common threshold to assure no violations of the assumption of multicollinearity correspond to $VIF < 5$, a more critical threshold indicating multicollinearity corresponds to $VIF > 10$. The table shows that most variables indicate a VIF value below 5, and all variables indicate a VIF value below 10; proposing that the assumption of multicollinearity is not violated.

Attachment VII, ‘Table 8 *Testing for autocorrelation*’ controls for violations of the assumption of no or little autocorrelation in observed data. Autocorrelation, or violating the assumption of independence residuals could induce invalid confidence intervals or significance levels. Construction of the Durbin-Watson statistic showed little positive autocorrelation that is not perceived problematic when threshold value of 1.5 is maintained (Durbin & Watson, 1951; Savin & White, 1977).

Attachment IIX ‘Table 9 *Testing for influential outliers*’ controls for observations that could be considered significantly disproportional influent from other observations and possibly affect the reliability of performed regression analysis. Construction of the Cook’s distance statistic showed no disproportioned outliers influences with a maintained cut-off value of 0.05 (Cook, 1977).

5.3 Regression results

Table 5 ‘*Regression models GAAP ETR*’ and table 6 ‘*Regression models CASH ETR*’ represent outcomes from conducted regression analysis to test proposed hypotheses with respectively the GAAP ETR and CASH ETR as dependent variables. Both tables are constructed such, that model 1 contains the full range of controlling variables and each successive model contains an added independent variable to allow for testing hypotheses. (This results that model 2 includes GRI Sust. Disclosure to test H1; model 3 includes Compliance to test H2; model 4 includes External assurance for testing H3; model 5 contains Stakeholder panel to test H4; model 6 includes International standards to test H5, and also inherently represent the regression model with all explanatory variables concerned.)

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Table 4 ‘Descriptive statistics’

	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) GAAP ETR	,264	,134	,00	,98	1.00													
(2) CASH ETR	,262	,181	,00	1,00	,429*	1.00												
(3) GRI Sust. Disclosure	,690	,463	,00	1,00	-,115*	-,109*	1.00											
(4) Compliance	,414	,222	,00	1,00	-,049*	-,064*	-,055*	1.00										
(5) External assurance	,164	,210	,00	1,00	,045*	,042	-,044*	-,025	1.00									
(6) Stakeholder panel	,13	,337	,00	1,00	-,037	-,066*	-,027	,014	,147**	1.00								
(7) International standards	,251	,210	,00	1,00	,044	,071**	-,058*	-,017	,209**	,081**	1.00							
(8) Total assets	4098,2	171,13	230	30009	,024	,048*	-,009	-,055*	,002	,001	,017	1.00						
(9) Turnover	1277,8	268,6	,00	42071,4	-,012	,024	,127**	-,067*	,096**	-,013	,035	-,022	1.00					
(10) Employees	32,5	65,9	,00	537,7	,096**	,074**	,180**	-,117*	,084**	,019	,140**	,027	,584**	1.00				
(11) Org. Type	,27	,817	,00	6,00	,013	,015	,180**	-,100*	,057*	,003	,113**	,068**	,027	,068**	1.00			
(12) Industry	15,50	9,474	,00	37,00	,009	-,053*	,001	-,007	-,047*	,021	-,054*	,050**	-,011	-,021	,050**	1.00		
(13) Country	4,20	1,494	,00	5,00	,056**	-,001	-,106*	-,005	-,007	-,003	-,017	-,025	-,007	-,002	-,025	,056**	1.00	
(14) Region	1,91	1,151	,00	5,00	-,026	-,040*	,301**	-,006	-,044*	,033	-,004	,034	,048**	,019	,034	,057**	,251**	1.00

** p<0,01, * p<0,05

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Table 5 ‘Regression models GAAP ETR’

H	Variable	Exp. Sign	Model 1 GAAP ETR	Model 2 GAAP ETR	Model 3 GAAP ETR	Model 4 GAAP ETR	Model 5 GAAP ETR	Model 6 GAAP ETR
1	GRI Sust. disclosure	+		-,062** (,058)	-,065** (,058)	-,062** (,058)	-,061** (,058)	-,061** (,058)
2	Compliance	+			-,059** (,015)	-,058** (,015)	-,058** (,015)	-,058** (,015)
3	External assurance	+				,040 (,016)	,045* (,016)	,043* (,016)
4	Stakeholder panel	+					-,040 (,010)	-,040 (,010)
5	International standards	+						,006 (,016)
	Total assets		,003 (,000)	,003 (,000)	,002 (,000)	-,001 (,000)	-,003 (,000)	-,003 (,000)
	Turnover		,177*** (,000)	,178*** (,000)	,174*** (,000)	,172*** (,000)	,173*** (,000)	,173*** (,000)
	Employees		-,086*** (,000)	-,086*** (,000)	-,088*** (,000)	-,088*** (,000)	-,088*** (,000)	-,088*** (,000)
	Observations		1567	1567	1567	1567	1567	1567
	Adj. R-squared		,071	,074	,077	,078	,079	,079

*** p<.01, ** p<.05, * p<.1

Standardized errors in parentheses

To preserve space, controlling dummy variables have been excluded

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Table 6 'Regression models CASH ETR'

H	Exp. Sign	Model 1 CASH ETR	Model 2 CASH ETR	Model 3 CASH ETR	Model 4 CASH ETR	Model 5 CASH ETR	Model 6 CASH ETR
1 GRI Sust. disclosure	+		,012 (,079)	,009 (,080)	,013 (,081)	,013 (,080)	,015 (,081)
2 Compliance	+			-,067** (,021)	-,065** (,021)	-,063** (,021)	-,062** (,021)
3 External assurance	+				,043 (,023)	,051* (,023)	,046* (,023)
4 Stakeholder panel	+					-,069*** (,014)	-,071*** (,014)
5 International standards	+						,032 (,023)
Total assets		,018 (,000)	,018 (,000)	,017 (,000)	,015 (,000)	,011 (,000)	,013 (,000)
Turnover		,110*** (,000)	,110*** (,000)	,104*** (,000)	,103*** (,000)	,106*** (,000)	,101*** (,000)
Employees		-,021 (,000)	-,022 (,000)	-,025 (,000)	-,025 (,000)	-,025 (,000)	-,028 (,000)
Observations		1567	1567	1567	1567	1567	1567
Adj. R-squared		,046	,046	,049	,050	,055	,055

*** p<.01, ** p<.05, * p<0.1

Standardized errors in parentheses

To preserve space, controlling dummy variables have been excluded

5.3.1 Testing hypothesis

H1 states that organizations which practice sustainability disclosure according to GRI reporting standards avoid less taxes than organizations that do not. GRI Sust. Disclosure is added to model 2 in both table V and VI and the corresponding coefficients concern GAAP ETR ($\beta = -.062, p < .01$) and CASH ETR ($\beta = .012, p > .05$). Model fit, captured by R-Squared, has increased compared to model 1 in table V, and persisted in table VI which explain seven percent (7%) and nearly five percent (5%) of the variance of GAAP ETR and CASH ETR, $R^2 = .071, F(1556) = 3,266, p < .001, R^2 = .046, F(1556) = 2,303, p < .001$. A significant negative GAAP ETR regression coefficient provides evidence for rejecting H1, since the effect of GRI reporting organizations ($\beta = -.062, p < .01$) indicates that they have a (6,2%) lower GAAP ETR. However, due to a positive non-significant CASH ETR regression coefficient result, caution should be taken. A non-significant result does not conclude that no relationship with the dependent variable exists, but rather indicate insufficient evidence to fully reject the hypothesis. For this reason the negative coefficient on GAAP ETR presents partial evidence that organizations which practice sustainability disclosure according to GRI reporting standards leads to lower GAAP ETRs and therefore an increase of the likelihood of tax avoidance. Accordingly, H1 is partially rejected.

H2 states that an increase in compliance to the GRI disclosure standard results in a decrease of tax avoidance. Compliance is added in model 3 in both table V and VI and the corresponding regression coefficients GAAP ETR ($\beta = -.059, p < .01$) and CASH ETR ($\beta = -.057, p < .01$) both concern a significantly negatively relationship. This indicates, that an increase of GRI compliance with a value of one (1,00) results in respectively nearly six percent lower (6%) lower ETRs. Model fit has increased in both models compared to model 2 in table V and explain nearly eight (8%) and five (5%) percent of the variance, $R^2 = .077, F(1556) = 3,374, p < .001, R^2 = .049, F(1556) = 2,385, p < .001$. The negative regression coefficients on both GAAP ETR and CASH ETR provide evidence that a higher compliance to the GRI disclosure standard results in lower ETRs and therefore an increase in the likelihood of tax avoidance. Correspondingly, H2 is rejected by both models.

H3 poses that organizations of which its GRI sustainability report is audited and assured externally avoid less taxes. External assurance is added in both models 4 and reveal non-significant regression coefficients of GAAP ETR ($\beta = .040, p > .1$) and CASH ETR ($\beta = .043, p > .1$). Model fit reveals, $R^2 = .078, F(1556) = 3,361, p < .001$, and $R^2 = .050, F(1556) = 2,392, p < .001$. Although these non-significant regression coefficients rather indicate insufficient evidence to fully accept the hypothesis; succeeding models 5 and 6 do indicate a degree of significant External assurance regression coefficients. Respectively, the positive External assurance regression coefficients in model 5 and 6 in Table V, GAAP ETR ($\beta = .045, p < .1$), GAAP ETR ($\beta = .043, p < .1$), and Table VI, CASH ETR ($\beta = .051, p < .1$), CASH ETR ($\beta = .046, p < .1$) do not match conventional significance levels of 5% and 1%, however they may indicate a greater possibility that a positive relationship exist instead of a negative relationship. Nonetheless, H3 cannot be falsified nor accepted with proper certainty,

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concluding that performed statistical testing failed to reject H3.

H4 states that organizations that have their GRI sustainability report constructed with representation of a stakeholder panel commit less tax avoidance. Stakeholder panel is added in both models 5 and the corresponding regression coefficients concern GAAP ETR ($\beta = -.040, p > .1$) and CASH ETR ($\beta = -.069, p < .01$). Model fit reveals $R^2 = .079, F(1556) = 3,352, p < .001$, and $R^2 = .055, F(1556) = 2,483, p < .001$. A significant negative CASH ETR regression coefficient provides evidence for rejecting H4, since stakeholder represented organizations show nearly seven percent (7%) lower CASH ETRs. The non-significant GAAP ETR regression coefficient calls for careful interpretation though. A closer look at the Stakeholder panel significance of the regression coefficient GAAP ETR in model 6, ($\beta = -.040, p = .104$) indicates that the effect on the dependent GAAP ETR is at the edge of the 10% significance level and may not truly support rejection of H4, but by any means does not object it. For this reason, partial evidence is found for organizations that construct their GRI sustainability report in representation of a stakeholder panel, have lower ETRs and therefore increased likelihood of tax avoidance. Accordingly, H4 is partially rejected.

H5 proposes that organizations which include additional issue related international standards in their GRI sustainability report commit less tax avoidance. International standards is added in both models 6 and the corresponding regression coefficients GAAP ETR ($\beta = .006, p > .01$) and CASH ETR ($\beta = .032, p > .01$) concern a non-significant relationship. Model fit reveals, $R^2 = .079, F(1556) = 3,292, p < .001$, and $R^2 = .055, F(1556) = 2,465, p < .001$. Encountered non-significant regression coefficients suggest that an increase in included additional issue related international standards to the GRI disclosure standard does not significantly results in lower or higher ETRs and therefore no increase or decrease in the likelihood of tax avoidance. Concluding that H5 failed to reject.

Ultimately, both models 6 represent the full regression models to check whether observed effects withhold when all independent variables are run simultaneously. As can be detected, the full regression models do generate some little change in regression coefficients, or initiate some attributive significance. This, however, does not change any direction of observed effects nor change the composition of evidence for alternative interpretations in rejecting hypothesis.

5.4 Robustness of results

To take into account the validity of found results and enhance replicability. The robustness and correctness of the performed regression results are evaluated by conducting several checks and additional analysis.

Attachment IX, 'Table 10 *Fixed effects model and OLS 5-year-average model*' contains the results from a constructed fixed effects regression model and a simple linear regression 5-year-average model based on OLS. The fixed effects regression model was constructed to control for all time invariant characteristics or features that could exist inside of the used data panel and ultimately could impact the dependent variables (Allison, 2006). To control for all time invariant characteristics, in this case,

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means that specific data panel effects that are stable are controlled for impact on the ETRs and therefore the tax avoidance level of a firm. The results from the fixed effects regression models, which are indicated in model 1 and 2, show that previous obtained OLS regression results in Table 5 '*Regression models GAAP ETR*' and table 6 '*Regression models CASH ETR*' are approximately the same for most variables. Although specific regression coefficients do not match perfectly, they do not indicate varying directions of observed effects.

Dyreng et al. (2007) place a well taken point that tax payments made in any period of time are related to tax payments from a prior period. This relationship could increase the volatility of measured ETRs and therefore negatively affect the statistical ability to correctly detect tax avoidance in a current period. For this reason, the authors suggest to sum both the ETRs nominator and denominator over the period of time to create a multiple year average. This results, in this case, in a 5-year-average GAAP and CASH ETR, which are indicated in model 3 and 4 of attachment IX, 'Table 10 '*Fixed effects model and OLS 5-year-average model*'. The results from the 5-year-average OLS regression models show more divergence from previous obtained OLS regression or the fixed effects regression models. In particular the significance levels indicate less support for rejected hypothesis. Nevertheless, it is not perceived that they provide significant evidence for the construction of alternative interpretations. Further analysis for correctness of obtained regression results focusses on the presence of reverse causality. This considers a check whether presumed causality between the GRI independent variables and dependent ETR variables considers a one-way direction from IVs to DVs, instead of DVs causing a change in IVs. Although problems of reverse causality are difficult to truly resolve statistically, and in general observational data only allow us for speculating or hypothesizing causal relations, a Granger test of causality is conducted to at least counter the suspicion of reverse causality (Granger, 1969). To designate and test the direction of causality between the GRI independent variables and ETR dependent variables, a LAG function is performed for one year-period. The significant F change in model 2 and 4 in Attachment X 'Table 11 '*Granger causality test*' indicate that the GRI independent variable is Granger causal for the change in the dependent GAAP and CASH ETR variables, but not vice versa.

6. Discussion

The following section allows for a positioning of accomplished research by interpreting and combining found results with complementary as dispersive related studies. This leads to the generation of points for consolidating accomplished research, indicate limitations and assign possible spaces for useful further research.

6.1 GRI and corporate tax avoidance

Earlier research provides little ground to reach clarity whether organizations with high levels of sustainability performance are less or more likely to commit tax avoidance, since evidence for both conceptions exist. (Davis et al., 2016; Lanis & Richardson, 2015). This research does not claim to contribute to this conception directly, however observed results suggest that organizations which are integrating corporate sustainability through sustainability disclosure, e.g. GRI sustainability reports, do not pay more taxes than organizations that do not integrate corporate sustainability through GRI sustainability disclosure. For this point, present research does claim to add directly into the academic debate on the appropriateness of sustainability disclosure (and in specific sustainability disclosure according to GRI principles) as a supportive tool for integrating corporate sustainability.

Present research was not able to provide evidence that could support earlier findings of Brooks & Oikonomou (2018) and Hummel & Schlick (2016) that sustainability reporting organizations are associated with better corporate sustainability performance and, as an extension, possibly commit less tax avoidance. On the contrary, evidence of GRI sustainability reporting organizations indicated an increase in the likelihood of corporate tax avoidance, and therefore even suggests a lower sustainability performance. When it is believed that corporate tax avoidance does not contribute in sustainable development of solving the needs of current stakeholders without compromising the ability to solve the needs of future stakeholders, GRI sustainability reporting organizations are more likely to erode its responsibility to pay its fair share of taxes and hinder the provision of public goods and the distribution of wealth in general. This distinction could be pointed in line with Davis et al., (2013) and Preuss, (2010) that organizations do make substantiated claims when it comes to corporate tax avoidance, but eventually do not view the payment of corporate taxes as complementing or fundamental for integrating corporate sustainability.

Furthermore, found evidence even suggest that higher compliance to GRI disclosure standard results in an increase in the likelihood of corporate tax avoidance. This result in itself constitutes to Oliver (1991), that organizations respond differently to institutional pressures through applying a range of strategies that alter level of compliance. Moreover, it eventually may address that high compliant GRI disclosing organizations disproportionally use the GRI disclosure standards for deploying avoiding, defiance and manipulation tactics to cover up non-conforming tax behaviour. This thereafter, could indicate the limited ability of GRI to pressure organizations to conform to desirable tax behaviour or a lack of ability to effectively sanction undesirable organizational behaviour, (Scott, 1987).

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Organizational use of GRI disclosure standards for deploying avoiding, defiance and manipulation tactics to cover up non-conforming tax behaviour, however, is no new conception in the line of sustainability disclosure research, which highlights these phenomena as organizations greenwashing (Kim & Lyon, 2015) or cherry picking (Moneva et al., 2006; Thijssens et al., 2014) their sustainability achievements.

Performed statistical testing failed to reject H3 properly. Found results could, nevertheless, suggest that there is a greater possibility that assuring sustainability disclosures decreases the likelihood of corporate tax avoidance, instead of increases. When this reasoning is set forth, it constitutes to understanding that organizations imitate (structures, procedures, or ideas) from organizations of which it is perceived that it will reduce uncertainty (DiMaggio & Powell, 1983). GRI disclosing organizations therefore might not include external assurance activities from an ethical sustainability integration perspective, but rather from a strategic decision-making process (Christensen et al., 2015) to reduce tax avoidance risks (Antonetti & Anesa, 2017) and to benefit from the potential advantages of doing so by externally assuring their sustainability reports.

Evidence of organizations that construct their GRI sustainability report in representation of a stakeholder panel revealed partial lower ETRs and therefore an increase in the likelihood of tax avoidance. These results seem to contradict the understanding that stakeholder theory should enhance organizations to address and solve societal problems (Freeman et al., 2010). However, this position seems inadequate since given evidence does not provide a reasoning that concerned stakeholder panels perceived organizational sustainability reporting practices as fair or just (Bosse et al., 2009), or provide any insight in the constellation of the stakeholder panel (Dowling, 2014), which might as well only included employees or investors which made scrutinizing tax avoidance issues less likely. The fact that representation of a stakeholder panel in GRI sustainability disclosures increases in the likelihood of tax avoidance however may contribute to earlier findings of (1) Doshi et al. (2013) who stated that organizations which are confronted with diverging pressures between the demands of shareholders and both internal and external stakeholders reveal divergent performances. Besides, Willis (2003) indicated GRI's limited capacity to produce sustainability reporting standards that are responsive to a diverse set of stakeholders and their inherent diverse expectations about performance levels.

After H5 statistically failed to reject, it could be concluded that the observed relationship of included additional issue related international standards in the composed sample did not significantly increase or decrease in the likelihood of tax avoidance. A reason for these non-significant results could be that a significant relationship actually does not exist. However, it is more likely that this specific non-significant relationship will not be observed in the actual empirical population that this sample could represent. Nevertheless, this research differs from other research that supposes a significant a-symmetrical relation between international standards and corporate tax avoidance, for example on UNGC principles in Wagner (2004), SDGs (Spangenberg, 2017), and IFC standards (Jespersen, 2016).

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6.2 Effective tax rates

Present research showed unexpected differences in significance levels between independent and dependent GAAP ETR and CASH ETR variables. These differences initiated a cautious approach for interpreting the findings and lead to determining only partial rejection of H1 and H4. To examine these diverging significance levels, a more narrow understanding of the measurement of GAAP ETR and CASH ETR or alternative measurements for designating corporate tax avoidance seems appropriate and desirable.

Although literature research provided a wide array of measurements for corporate tax avoidance which may specify unique explaining characteristics or indicative power (Hanlon & Heitzman, 2010; Lietz, 2013); the decision to incorporate the GAAP and CASH ETR as measures of tax avoidance seems justified since they do not discriminate for the magnitude or distribution of specific tax motivated activities and therefore, combined together, capture a broad spectrum of corporate tax avoidance strategies. Notwithstanding the broad spectrum, they do not capture similar types of tax avoidance strategies. GAAP ETR measures the extent to which organizations reduce their tax expense for accounting purposes, CASH ETR measures the extent to which organizations reduce their cash taxes actually paid. Encountered differences in significance levels therefore could very possibly result from the possibility that organizations have to adjust tax expenses without affecting the actual paid cash taxes and also the other way around.

Although GAAP ETR and CASH ETR are widely dispersed methods of measurement in contemporary business research, it should be mentioned that, although widely dispersed, there is little empirical evidence that suggests that constructing GAAP and CASH ETRs are the most appropriate methods of accessing corporate tax avoidance. In general, there is even little empirical discretion to direct researchers in constructing the most appropriate research design for maximizing the research power or reliability of corporate tax avoidance related studies. Instead, for example Austin (2019) notes the point that most research considers corporate tax avoidance stemming from deliberate organizational actions. The author however notably provides evidence for supporting alternative measures of corporate tax avoidance which are affected by factors outside organizational control, which the author conceptualizes as ‘tax surprises’.

6.3 Theoretical contributions

Present results provides evidence for the existence of an asymmetric effect between GRI sustainability disclosure and corporate tax avoidance. In other words, performed research indicated that GRI sustainability reporting organizations do not avoid less taxation than organizations that do not practice GRI sustainability reporting. This distinction adds into the academic debate on whether sustainability disclosure (and in specific sustainability disclosure according to GRI principles) is a valid mechanism to support integration of corporate sustainability by providing rationales for scholars who criticize it (Brown et al., 2009; Hopwood, 2009; Moneva et al., 2006; Thijssens et al., 2014; Toppinen &

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Korhonen-Kurki, 2013). Present research provides additional specificity to the distinction that sustainability disclosing organizations cherry pick, greenwash or ignore major societal issues which they impact, vary likely also applies to corporate tax behaviour in which sustainability disclosing organizations pose substantiated claims, but eventually do not view the payment of corporate taxes as complementing or fundamental for integrating corporate sustainability.

Another motivation of theoretical contribution remains in the fact that contemporary literature lacks distinctive answers to whether corporate sustainability relates positively or negatively to corporate tax avoidance (Avi-Yonah, 2014; Bird & Davis-Nozemack, 2018; Davis et al., 2013; Dowling, 2014; Lanis & Richardson, 2012, 2015). Although present research does not claim to contribute to this inquiry directly, it does contribute evidence that a negative relationship is persistent. Present research indicates that organizations which are integrating corporate sustainability through sustainability disclosure, e.g. GRI sustainability reports, do not pay more taxes than organizations that do not integrate corporate sustainability through GRI sustainability disclosure and in fact even may display an increased likelihood of tax avoidance.

From a more abstract point of view, present research might provide confirmative results for institutional theory, or more specific confirmation for Oliver (1991), Scott (1987) and DiMaggio & Powell (1983) by suggesting that high compliant GRI disclosing organizations may use the GRI disclosure standards disproportionally for deploying avoiding, defiance and manipulation tactics to cover up non-conforming tax behaviour and include external sustainability report assurances to reduce tax avoidance risks and inherently to risk, uncertainty.

6.4 Limitations and areas for future research

Inherent to conducting empirical research, the results of present study are also subject to a specifically amount of limitations. First, the generalizability of found results depends heavily on the yielded data sample. Present study did not intend to focus solely on any particular organization for example in view of geographical location or size. Although, when it comes to generalizability of the results, it should be noted that this study has only examined organizations which were presented in the GRI Sustainability Disclosure Database, and in any way related to some degree of sustainability reporting. Moreover, as a premise for constructing the final sample, organizations had to be in possession of a ISIN code which inherently only include stock listed firms. As a consequence that data for unlisted firms was unavailable, many small to medium enterprises were ruled out from the original sample. While the lack of focus on any particular geographically located organization might enhance the scope of present results and possibly could be interesting for comparison with other studies, since most corporate tax avoidance studies examine particular geographical regions. The proposition that the results may hold in a global context however seems to pretentious since it is not believed that the sample withholds representativeness for the entire population, as the majority of the sample concerns organization deriving from Europe, Asia and Northern American. Therefore, found results may only

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be representative for large to multinational European, Asian and American stock listed organizations. Outcomes may vary for smaller unlisted organizations located elsewhere.

Second, the replicability of found results depends heavily on reliability of yielded data. It should be noted that this study only had access to accounting data for measuring corporate tax avoidance; which can be pertained to questionable or rather improper tax estimates that do not represent actual organizational tax propositions. In addition to the point of replicability and reliability, another caveat of the present study relates to the secondary sustainability disclosure data collected from the GRI Disclosure Database of which it also cannot be ensured that it does not contain improper observations. Besides, the range of available observations in the GRI Disclosure Database could be classified as a limitation in itself and turned out to be of substantial influence for the sustainability disclosure measurement opportunities and ultimately the validity of the measurement approach.

Possible directions for useful future research are suggested to inquiry present research results which did not allow for supporting stakeholder theory and its proposed conception to enhance organizational problem solving capabilities. As stated earlier, performed research did not account for the constellation or saliency of stakeholder representation, nor did it reflect any valuation of particular stakeholder demands or reactions to concerned sustainability report. For example it would be interesting to uncover if distinct stakeholder mechanisms or configurations in sustainability disclosures could possibly contribute to indicating tax avoidance, and if so, why does this specific mechanism contribute, and to which extent can current stakeholder representation practices in corporate sustainability disclosure be improved to better address corporate tax avoiding activities. Moreover, insights in the socioeconomic effects of corporate tax avoidance could support for defining a relationship with stakeholder theory. For example, is it possible that ‘successful’ tax avoidance activities create comprehensive stakeholder value, distributed such a way that it maximizes profit to benefit, shareholders, management, employees, communities and society in general? Or does a lack of corporate tax avoidance activities even initiate overpayment of corporate taxes and destroy value available to shareholders and stakeholders. Can it put organizations at a strategic disadvantage with other companies which are using legal tax avoidance mechanisms or even place the organization in danger of acquisition due to underutilized resources? These areas exceed the scope of the present research, but could possibly serve as useful points for future research.

6.5 Implications

Obtained results indicated that GRI sustainability reporting organizations do not avoid less income taxation than organizations that do not practice GRI sustainability reporting. For society these results provide a rationale for organizations to consider whether they should implement GRI sustainability disclosure if they wish to pursue in more fair tax practices. Moreover current GRI sustainability disclosing organizations should at least reconsider their sustainability disclosure implementation strategies and management in general to evaluate whether found results comply to them and consider

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if the goal of establishing sustainable development is truly served by retaining tax avoidance strategies. On the contrary, if organizations wish to perform tax avoiding activities and to some extent integrate corporate sustainability to minimize the risk of negative exposure or compromising legitimacy, implementing sustainability disclosure activities according to the GRI sustainability reporting standard is a possibility.

In addition, the present results provide governments with a rationale not to address legislative reforms imposing sustainability disclosure (according GRI at least) if less corporate tax avoidance is the aim. However, the used research method did manage to indicate specifics of GRI sustainability reports that could possibly contribute to developing tools to signal increased likelihoods of corporate tax avoidance. Finally and obviously, obtained results should question GRI as a leading institution for incorporating transparency and solving stakeholder demands, or at least lead to fundamentally reconsidering the tax-compliance section in the disclosure format and incorporate efforts of restructuring and improvement.

7. Conclusion

7.1 Summary

Performed research questioned whether the Global Reporting Initiative as a sustainability disclosure standard is related to corporate tax avoidance. A variance based research method was applied, found on secondary digital data sources, the construction of a sample of N=581 geographically dispersed organizations consisting of 2905 observations for a five year time series, and statistical analysis by conducting simple linear regression using ordinary least squares. Presented results displayed evidence of the existence of an asymmetric effect between GRI sustainability disclosure and corporate tax avoidance; or in other words, indicated support that GRI sustainability reporting organizations do not avoid less income taxation than organizations that do not practice GRI sustainability reporting.

Furthermore, conducted research into the specifics of GRI sustainability reporting organizations found (1) evidence that higher compliance to the GRI disclosure standard results an increase in the likelihood of tax avoidance and (2) partial evidence for organizations that construct their GRI sustainability report in representation of a stakeholder panel results into an increase in the likelihood of tax avoidance.

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Attachments

Attachment I, Table 1 'Overview of research population, constructs, variables and indicators'

Research population	Constructs	Variables	Indicators
Organization 'X'	IV - Corporate Sustainability Disclosure	GRI Sustainability Disclosure	- GRI/Non GRI
		Compliance	- Adherence level
			- Report integrated
			- Report type
		External assurance	- AccountAbility Assurance standard
			- International Standard on Assurance Engagements
			- National General Assurance standard
	DV- Corporate Tax Avoidance	Stakeholder panel	- National Sustainability Standard
			- Stakeholder panel/Non stakeholder panel
			- OECD
		International standards	- UNGC
			- CDP
			- IFC
	Controlling variables	GAAP ETR	- ISO
			- SDGs
		CASH ETR	- Income tax expenses / Earnings before taxes
			- Cash taxes paid / Total pretax accounting income
		Organization type	- Private company, State-owned, Cooperative, Subsidiary, Public institution, Non-profit, NGO
			- Size
		Size	- Total assets
			- Turnover
		Industry	- Number of employees
			- SME, Large, MNE
		Country	- SIC code
			- OECD, DAC, Non-OECD/DAC
		Region	- OECD/DAC
			- Africa, Asia, Europe, Latin America, North America and Oceania

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Attachment II, Table 2 '*Measurement overview*'

Variable	Indicator	Description	Method of coding	Method of measurement
H1 - GRI Sustainability Disclosure	GRI / Non-GRI	Indicates whether a sustainability report is constructed in conjunction to GRI-standards	0=No 1=Yes	$\frac{\sum(\text{score effectively disclosed indicators})}{\sum(\text{maximum score})}$
H2 - Compliance	Adherence level	Assessment of application of GRI-standards that sustainability report has been declared in accordance.	0=No 1=Yes	
	Report integrated	Sustainability report includes financial as non-financial information disclosure.	0=No 1=Yes	
	Report type	Indicates whether most recent type of GRI-standard that has been applied in sustainability report. (Earlier GRI 1, GRI 2 GRI3 Standards, versus latest GRI 3.1 or GRI 4 Standard)	0= No 1= Yes	
H3 - External assurance	General Accounting Assurance	Indicates whether disclosed information is insured by providing a general accounting assurance statement the sustainability report.	0=No 1=Yes	
	Standard AA1000AS	Indicates whether disclosed information is insured through an available statement of the AccountAbility AA1000 Assurance Standard.	0=No 1=Yes	
	ISAE3000	Indicates whether disclosed information is audited and insured through an available statement of the International Standard on Assurance Engagements (ISAE) 3000.	0=No 1=Yes	
	National General Standard	Indicates whether information is disclosed in accordance with application of a general national assurance standard developed at the national level.	0=No 1=Yes	
	National Sustainability Standard	Indicates whether information is disclosed in accordance with application of a sustainability specific national assurance standard (developed at the national level).	0=No 1=Yes	

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H4 - Stakeholder panel	Stakeholder panel	Indicates whether there was representation of formalized input or feedback on the sustainability report by a panel of stakeholders.	0=No 1=Yes
H5 - International standards	OECD	The sustainability report indicates explicit reference and usage of the Organization for Economic Co-operation and Development guidelines for responsible organizational conduct consistent with applicable laws addressed by governments to organizations.	0=No 1=Yes
	UNGC	The sustainability report indicates explicit reference and usage of the United Nations Global Compact principles for adopting, implementing and reporting sustainable policies.	0=No 1=Yes
	CDP	The sustainability report indicates explicit reference and usage of the Carbon Disclosure Project guidance documentation for measuring and managing environmental impacts.	0=No 1=Yes
	IFC	The sustainability report indicates explicit reference and usage of the International Finance Corporation performance standards for defining environmental and social risks and responsibilities.	0=No 1=Yes
	ISO	The sustainability report indicates explicit reference and usage of the International Organization for Standardization 26000 clauses for sustainability reporting	0=No 1=Yes
	SDGs	The sustainability report indicates explicit reference and usage of the United Nations Sustainable Development Goals for initiating sustainable development.	0=No 1=Yes

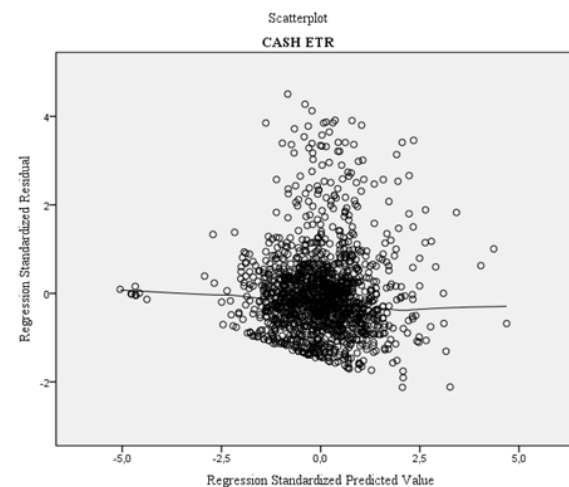
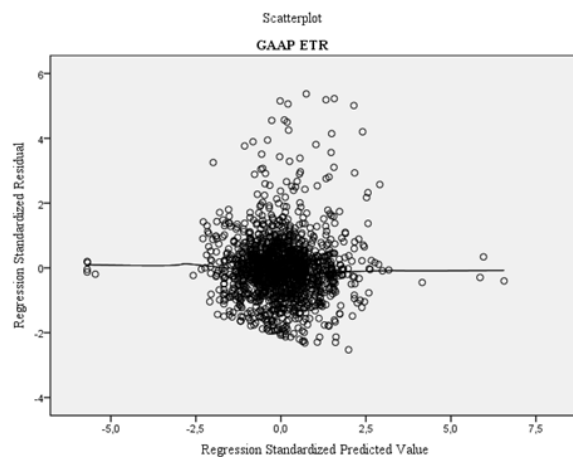
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Attachment III, Table 3 ‘*Sample selection and distribution*’

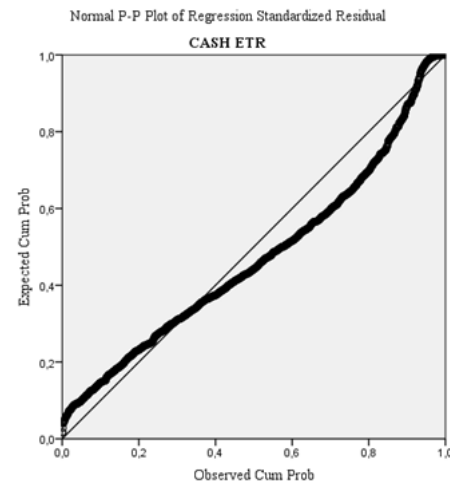
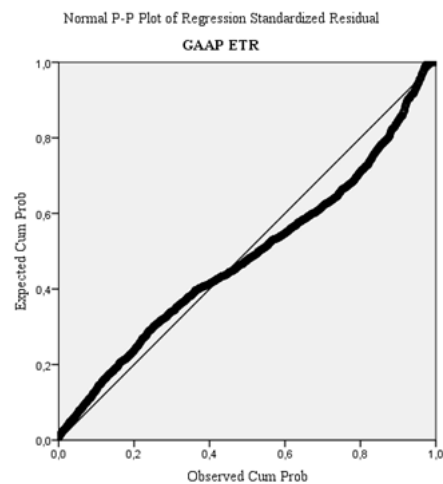
Panel sample selection					N
Initial Global Reporting Initiative Database Sample					6425
Less: Organizations not represented each year in GRI Sample during period 2012 – 2016.					-2.802 3632
Less: Organizations that did not match on ISIN (identifier) in the ORBIS database.					-2.034 1589
Less: Organizations that did not represent financial data on matching ISIN in EIKON database.					-182 1407
Less: Organizations that showed insufficient data points after merging GRI-data points with financial EIKON data points.					-826
Total sample size					581
Panel sample distribution					
By region	N	By type	N	By size	N
Africa	37	Private company	503	SME	25
Asia	200	State owned company	42	Large	347
Europe	216	Cooperative	2	MNE	209
Latin America & the Caribbean	45	Subsidiary	29		
Northern America	74	Public institution	2		
Oceania	9	Non-profit organization	2		
		Partnership	1		
Total	581	Total	581	Total	581
By industry group	N				
Agriculture	16	Healthcare Products		17	
Automotive	19	Healthcare Services		5	
Aviation	10	Logistics		10	
Chemicals	30	Metals Products		19	
Commercial Services	6	Mining		25	
Computers	11	Real Estate		25	
Conglomerates	22	Technology Hardware		24	
Construction	16	Telecommunications		27	
Construction Materials	13	Textiles and Apparel		7	
Energy	41	Tourism / Leisure		6	
Energy Utilities	25	Retailers		15	
Equipment	27	Other		58	
Financial Services	66				
Food and Beverage	31	Total		581	

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Attachment IV, Figure 2 ‘Testing for non-linearity and heteroscedasticity’



Attachment V, Figure 3 ‘Testing for normality of residuals’



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Attachment VI, Table 7 *‘Testing for Multicollinearity’*

	GAAP ETR VIF	CASH ETR VIF
GRI Sust. disclosure	1,096	1,100
Compliance	1,078	1,095
External assurance	1,155	1,163
Stakeholder panel	1,049	1,047
International standards	1,124	1,287
Total assets	2,130	2,137
Turnover	1,670	1,665
Employees	1,933	1,926
Org.Type*	2,887	3,234
Industry*	1,803	1,848
Country*	3,298	3,239
Region*	5,820	5,610

* Mean VIF-value for categorical variables, all included dummy variables below threshold of VIF <10

Attachment VII, Table 8 *‘Testing for autocorrelation’*

GAAP ETR	CASH ETR
Durbin-Watson	Durbin-Watson
1,530	1,540

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Attachment IIX, Table 9 *‘Testing for influential outliers’*

Cases	GAAP ETR	CASH ETR
	Cook’s Distance	Cook’s Distance
1.	0,045	0,036
2.	0,043	0,029
3.	0,036	0,026
4.	0,035	0,019
5.	0,034	0,017
6.	0,024	0,017
7.	0,017	0,013
8.	0,016	0,013
9.	0,015	0,013
10.	0,014	0,012

* Cases with a Cook’s Distance statistic > 0.05 were deleted

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Attachment IX, Table 10 *'Fixed effects model and OLS 5-year-average model'*

	Fixed Effects Model 1 GAAP ETR	Fixed Effects Model 2 CASH ETR	OLS 5-year-avg Model 3 GAAP ETR	OLS 5-year-avg Model 4 CASH ETR
GRI Sust. disclosure	-,060** (,057)	,020 (,078)	-,052* (,082)	,005 (,087)
Compliance	-,033** (,014)	-,048** (,020)	-,036* (,046)	-,085* (,072)
External assurance	,027* (,015)	,038* (,022)	,053 (,040)	,082 (,064)
Stakeholder panel	-,010* (,009)	-,039** (,014)	-,067* (,039)	-,155** (,065)
International standards	,000 (,015)	,022 (,022)	0,015 (,041)	,027 (,068)
Total assets	,000 (,000)	,000 (,000)	-,182 (,001)	,066 (,000)
Turnover	,000*** (,000)	,000*** (,000)	,092 (,000)	,027 (,000)
Employees	,000 (,000)	,000 (,000)	-,126 (,000)	-,058 (,000)
Observations	1567	1567	312	312
Adj. R-squared	x	x	,134	,060

*** p<.01, ** p<.05, * p<.1

x Adj. R-squared not available in SPSS Mixed Linear Modelling procedure

IVs for are also 5-year averaged for model 3 and 4

Standardized errors in parentheses

To reserve space, controlling dummy variables are not included in the results.

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Attachment X, Table 11 '*Granger causality test*'

	Model 1	Model 2	Model 3	Model 4
	GAAP ETR	GAAP ETR	CASH ETR	CASH ETR
	R-square	R-square	R-square	R-square
GAAP ETR Lagged (-1)	,017			
CASH ETR Lagged (-1)			,003	
GRI Lagged (-1)		,021		,005
Sig. F Change	,000***	,013**	,033**	,038**
Observations	1778	1777	1651	1650

*** p<.01, ** p<.05, * p<.1

Respectively, GRI Lagged concerns an index variable representing all independent variables