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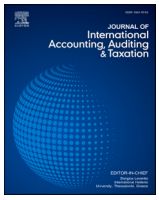

Corruption prevention practices and tax avoidance: The moderating effect of corporate board characteristics

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ABSTRACT

This paper examines the impact of corruption prevention practices on tax avoidance from a neo-institutional theoretical perspective. Our study also contributes to the existing corruption and tax literature by considering the moderating effect of corporate board characteristics on the association between corruption prevention practices and tax avoidance. Based on a sample of FTSE 350 United Kingdom (UK) listed firms, our findings illustrate that a firm's commitment to good anti-corruption practices is linked with lower tax avoidance. Furthermore, corporate board characteristics complement anti-corruption practices in minimizing corporate tax avoidance. Our findings provide useful evidence to governments, regulators, and other stakeholders who aim to determine best business practices that could help in reducing the risk of corporate tax avoidance. In general, our findings are robust to alternative measures of tax avoidance and different types of multivariate regression methods, namely ordinary least squares, two-stage least squares and Tobit regression techniques.

1. Introduction

This study investigates the effect of corruption prevention practices (CPP) on tax avoidance among FTSE 350 United Kingdom (UK) listed firms and consequently ascertains whether corporate board characteristics can moderate the CPP-tax avoidance nexus.

In recent years, there has been increased interest in issues relating to fighting corruption. This is mainly due to the idea that corruption can lead to inefficiencies in delivery of public services by aggravating social and income inequality, reducing public investment efficiency, and thus lowering economic growth (Cardoni et al., 2020). Evidence suggests that the global cost of corruption is about $2.6 trillion every year, which represents about 5 % of the global gross domestic product (GDP) (United Nations, 2018). In the European Union (EU), the estimated annual cost of corruption is about €120 billion, which represents about 1 % of the EU GDP. In the UK, the estimated annual cost of corruption is around £193 billion (Eaves, 2016), representing about 1 % of the total GDP. This shows the potential negative impacts of corruption on the economy and the wider society. Therefore, several national and international laws and regulations have been introduced to promote sustainable corporate governance practices by encouraging corporations to implement serious and effective anti-corruption measures/practices.[1]

This issuance of various regulations and laws aimed at promoting public accountability, sustainability, and preventing corruption has, arguably, increased public attention and media debate about the effectiveness of such laws/acts in reducing tax avoidance. For example, in 2019, the Tax Justice Network published the Corporate Tax Haven Index, which provides ranking for the leading tax haven countries used

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[1] For example, since 1889, the UK has been at the forefront of introducing several corruption regulatory and legislative provisions (e.g., 1889 The Public Bodies Corrupt Practices Act; 1906 and 1916 Prevention of Corruption Acts; 2001 Anti-terrorism Crime and Security Act; 2010 Bribery Act; and 2017 Criminal Finances Act), aimed at enhancing public accountability, sustainable governance practices and supporting corporations in fighting corruption. For example, the 2010 Bribery and 2017 Criminal Finances Acts require UK corporations to implement appropriate measures to prevent the facilitation of tax avoidance activities. Failure to prevent such facilitation can result in unlimited financial penalty and serious crime prevention/confiscation orders for convicted organisations.

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by multinational companies. The index shows that the UK and its overseas territories (Bahamas, Bermuda, British Virgin Islands, and Cayman Islands) are by far the world's biggest enablers of corporate tax avoidance, and they account for more than one third of the global tax avoidance risks (Tax Justice Network, 2019). Further, the anti-corruption group "Transparency International UK" published a report in September 2020 which showed more than 900 UK companies involved in 89 cases of global money laundering and corruption, accounting for about £137 billion of economic damage (Transparency International UK, 2020).

Despite the increased debate and controversy relating to tax avoidance among UK listed firms (McVeigh & Clark, 2011), there is a surprising paucity of empirical research investigating the impact of CPP on corporate tax avoidance. Further, and to date, the moderating impact of board characteristics, such as board gender diversity, independence, and size, on the CPP-tax avoidance nexus has not yet been empirically examined. Specifically, and despite the increasing anecdotal evidence that fighting corruption is an integral part of any organization's social responsibility, previous empirical studies predominantly focused on examining the impact of general corporate social responsibility (CSR) disclosure on tax avoidance (Sikka, 2010; Hasseldine & Morris, 2013; Hoi, Wu, & Zhang, 2013; Lin, Cheng, & Zhang, 2017; Abdelfattah & Aboud, 2020). However, and to the best of our knowledge, no existing study has examined the impact of corporate CPP on tax avoidance. This has, arguably, impaired the current understanding of whether good CPP can mitigate tax avoidance. Nevertheless, this is an important academic and policy issue because unlike the current emotionally charged public debates, our study can offer different and new insights by providing new empirical evidence on the extent to which CPP are effective in mitigating corporate tax avoidance among FTSE 350 UK listed firms. Therefore, and unlike much of the existing literature that has viewed CPP as independent from CSR (Cardoni et al., 2020), our research contributes to the existing literature by offering timely evidence on the extent to which CPP (using a score of six indicators reflecting firms' efforts to fight bribery and corruption) can influence tax behaviors among UK listed firms. Additionally, despite increasing normative/theoretical suggestions that a board of directors has significant influence on an organization's strategic decisions, including those relating to implementing good CPP (Zhang, 2018) and effective tax strategies (Lanis et al., 2019), none of the reviewed studies appear to have controlled for the moderating effect of corporate board characteristics of size, gender diversity, and independence on the CPP-tax avoidance nexus. Our research, therefore, contributes to the existing literature by offering evidence for the first time on whether the characteristics of corporate boards moderate the CPP-tax avoidance nexus. Finally, this study aims to contribute to a deeper understanding of issues relating to CPP and tax avoidance by offering a 15-year (2002 – 2016) longitudinal study of this relationship.

Using a sample of FTSE 350 UK listed firms, we find that firms with good CPP tend to engage less in tax avoidance behavior. Further, our results support the importance of corporate board characteristics in influencing the CPP-tax avoidance nexus. Our findings show that the negative CPP-tax avoidance relationship is moderated largely by corporate board characteristics.

Our study has important implications for governments, regulators, and other stakeholders. Our findings highlight possible opportunities for governments to increase corporate tax collection and should motivate governments to strengthen anti-corruption legislations. Further, our findings might lead to policy reforms that seek to increase corporate board size and gender diversity in order to complement the impact of CPP on reducing tax avoidance. Our results also encourage investors and other stakeholders to consider companies' CPP in their decisions, as adopting these practices could be a sign of efforts to reduce the risk of tax avoidance. To practitioners and managers, our findings highlight the importance of adopting good CPP and the need to complement these practices with other board monitoring mechanisms, such as large and gender diverse boards, to foster less involvement in tax avoidance behavior.

The remaining part of the paper is divided into five distinct sections. Sections 2 and 3 outline the theoretical framework and review relevant empirical literature to develop research hypotheses. Section 4 presents the methodology employed in this paper. The final two sections (5 and 6) discuss the main findings and draw some conclusions, respectively.

2. Corruption prevention practices and tax avoidance: Theoretical framework

Neo-institutional theory has become one of the most dominant theories in organizational studies over the last few decades (Alvesson & Spicer, 2019). The theory was first introduced by Meyer and Rowan in 1977, when they argued that beside efficiency and effectiveness, organizations that incorporate institutional elements into their operations/activities are more likely to be legitimate and successful (Meyer & Rowan, 1977). This notion of legitimacy is highlighted in the three pillars of "institutions" introduced by Scott (2014, p.56), stating that "*Institutions comprise regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life*". The regulative pillar, according to economists and political scientists, suggests that institutions set the laws and regulations that advance their interests, where institutions and individuals abide by laws and regulations to get rewards or to avoid punishments (DiMaggio & Powell, 1983; Scott, 2014). In the normative pillar, sociologists highlight the notion of "appropriateness" against "instrumentality", where actors engage in behavior appropriate to the situation, rather than behavior that advances their own interests (Ruef & Scott, 1998; Scott, 2014). The culture-cognitive pillar, which is closely linked to the notion of neo-institutional theory, is concerned with the shared conceptions that create social reality, where institutions and individuals who abide by the prevailing cultural values are more likely to be successful.

Accordingly, Aguilera, Rupp, Williams, and Ganapathi (2007) identified three motives for individuals and institutions to engage in different activities: (i) instrumental, which implies achieving self-interests; (ii) relational, where they will engage in activities to maintain good relations with other actors; and (iii) moral, which suggests engaging in the right activities on moral bases. Drawing on these motives and the pillars of "institutions", Suchman (1995, p.574) defines legitimacy as "*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions*". In this respect, Ntim and Soobaroyen (2013) stress that beside competing for resources, actors in a society seek social acceptance and legitimacy. Consistently, there are two main pillars for neo-institutional theory: (i) the traditional one of "efficiency" or "instrumentality", where actors compete for "resources" as a means of pursuing self-interests and to sustaining institutions (Ntim & Soobaroyen, 2013; Scott, 2014); and (ii) legitimacy, where institutions align their values and norms with the wider systems seeking social acceptance (Suchman, 1995; Ntim & Soobaroyen, 2013; Scott, 2014). Some scholars go further and consider legitimacy as one of the resources that organizations should have (Dowling & Pfeffer, 1975). In this regard, Johnson, Dowd, and Ridgeway (2006) identify four stages for an action to be legitimated. These stages are innovation, local validation, diffusion, and general validation; where new actions must first be locally accepted, then to be widely adopted by others to be able to gain general acceptance, which eventually makes them part of the shared conceptions in society. Accordingly, the same practice might be legitimate in one society but not legitimate in another, based on the shared values and conceptions in each society.

Neo-institutional theory has been employed in interpreting different corporate practices, such as public relations (Fredriksson et al., 2013), organizational strategies (Royer, 1999; Suddaby, Seidl, & Lê, 2013), and sustainability reporting (Larrinaga, 2007). In addition, the theory has been employed intensively in explaining CSR practices (Aguilera et al.,

2007; Ntim & Soobaroyen, 2013; Shahab & Ye, 2018; Karyawati, Subroto, Sutrisno, & Saraswati, 2020). For example, Aguilera et al. (2007) employed neo-institutional theory to explain why companies are increasingly engaging in social and environmental activities, and argued that the three motives (instrumental, relational, and moral) work simultaneously. According to the instrumental motive, Aguilera et al. (2007) indicate that managers will engage in CSR activities when they are aligned with their self-interests, including increasing shareholder value and profitability, which eventually contributes to firm survival and hence their pay packages. Meanwhile, relational motives might lead companies to engage in CSR activities seeking to maintain good relations with external parties, thereby gaining legitimacy. The moral motive suggests that managers might have moral characteristics driving them to work diligently and to do the right thing, leading to engaging in CSR activities. Despite the extensive use in interpreting different organizational practices, to the best of our knowledge, neo-institutional theory has not been employed to explain organizational practices associated with CPP or tax behavior. Accordingly, the current paper seeks to extend our understanding of the motives of important prevailing organizational practices, including those relating to corruption prevention and taxation related practices. Our study is informed by the three-pillars model of "institutions" introduced by Scott (2014) and the three-motives model provided by Aguilera et al. (2007). Accordingly, we identify two main perspectives for neo-institutional theory: namely legitimization (relational and moral motives) and efficiency (instrumental).

According to the legitimacy perspective (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Suchman, 1995; Aguilera et al., 2007; Ntim & Soobaroyen, 2013; Scott, 2014), organizations will seek to align their values, practices, and norms with the shared values and conceptions of the broader society/group in order to gain the right to operate and survive. Consistently, organizations might be pressured to engage in corruption prevention activities and practices to prove their commitment to the shared values and norms of the wider society. Further, this engagement is expected to convey a message to employees that the organization is committed to fair practices, including paying their fair share of tax on their profits,[2] which will ultimately improve social equality. In addition, prior studies (Hanlon & Heitzman, 2010; Wilde & Wilson, 2018; Abdelfattah & Aboud, 2020) indicate that while tax avoidance is legitimate and formally legal, aggressively avoiding taxes by using arrangements and financial instruments to obtain tax results not anticipated or intended by the government can be seen as immoral and socially unacceptable behavior. These mechanisms include making administrative payments, charging royalties, using transfer pricing, recognizing expenses in countries with high-tax rates, and shifting profits to low-tax rate countries. For example, many multinational firms such as Amazon, Google, and Starbucks have faced years of heated criticism due to paying little or no corporation taxes on their UK sales by taking advantage of legal loopholes (Barford & Holt, 2013; Neate, 2022). In 2011, it was revealed that Starbucks had sales in the UK of £400 m, but paid no corporation taxes on these sales. Starbucks reduced its tax liabilities by following complex transfer pricing arrangements, including buying beans from a Swiss subsidiary before they are roasted at a subsidiary in Amsterdam (Bergin, 2012). More recently in 2021, Starbucks made profit of £95.1 m and paid just £5.4 m in UK corporation tax after making administrative payments of £78 m, including royalties, utilities, and maintenance (Neate, 2022). According to the legitimization perspective, tax avoidance is viewed as immoral and socially unacceptable behavior because it can cause immense harm to society by increasing social and income inequality, reducing public investment efficiency, and lowering economic growth, and ultimately harms the firms themselves by damaging a firm's reputation and image (Abdelfattah & Aboud, 2020; Cardoni, Kiseleva, & Lombardi, 2020). One way to reduce a firm's engagement in such immoral and socially unacceptable tax behaviors is by strengthening its CPP (Sun, 2021). Consistent with this view, and according to the legitimization perspective of neo-institutional theory, committing to good CPP can reduce managers' opportunistic behaviors by encouraging them to obey not only the letter, but also the spirit/intention of tax laws, and hence reduce tax avoidance practices. This in turn can improve a firm's reputation and image by ensuring that public scrutiny and criticisms are addressed.

Similarly, the efficiency (instrumental) perspective of neo-institutional theory (Aguilera et al., 2007; Ntim & Soobaroyen, 2013; Scott, 2014) suggests that organizations engage in activities in their institutional context not only to legitimatize their operations, but also to compete for resources that are needed to sustain their operations. This can be achieved through the conformance with regulative, normative, and cultural-cognitive elements (Scott, 2014), which ensures good relations with the powerful actors and, therefore, a competitive advantage in securing access to the critical resources. Accordingly, greater commitment to good practices, in the form of engaging in corporate anti-corruption initiatives and paying their fair share of taxes, can promote corporate efficiency through improving and maintaining good relations with powerful stakeholders, such as shareholders, government, customers, suppliers, and lenders, to access vital economic resources. Further, engaging in corruption prevention activities, such as providing anti-corruption training to employees, is expected to promote morals and ethics in the workplace, and lead to fairer and more efficient practices, including paying their fair share of taxes. Anti-corruption initiatives might also increase pressure on companies to be fairer in their taxation practices. However, Lin et al. (2017) and Abdelfattah and Aboud (2020) suggest that managers may have incentives to reduce taxes or engage in tax avoidance strategies in order to maximize shareholders wealth. Meanwhile, undertaking aggressive tax avoidance strategies can also be viewed as a risky investment as it can lead to increasing public concerns and scrutiny about the legitimacy of corporate tax planning practices (Wilson, 2009; Laguir, Staglianò, & Elbaz, 2015; Jiang, Zhang, & Si, 2022). Therefore, and from an impression management perspective, firms may show better CPP to cover up their use of tax avoidance strategies.

3. Empirics and hypotheses development

3.1. Corporate CPP and tax avoidance

Theoretically, many argue that corporations are responsible for promoting sustainability and social equality as well as protecting stakeholders' interests by committing to best business practices, including those relating to preventing corruption and paying fair tax contributions (Jamali, 2008; Cardoni et al., 2020). Specifically, the efficiency perspective of neo-institutional theory suggests that organizations tend to adopt proactive stakeholder engagement practices to demonstrate greater accountability to the wider community and access crucial resources (Hoi et al., 2013; Lanis & Richardson, 2013). Therefore, the efficiency perspective of neo-institutional theory indicates that engaging in good practices, in the form of increased involvement with anti-corruption measures, can contribute to improving corporate efficiency by increasing monitoring of the opportunistic behaviors of management (Pillay & Kluvers, 2014). Consequently, this can result in increasing pressure on management to pay fair tax contributions in order to demonstrate public accountability and maintain good relations

[2] According to the Institute of Business Ethics (2013), tax should not be seen "as a cost to be avoided, but as a legitimate payment from wealth created to the countries and communities that contributed to the wealth creation in the first place". Similarly, Xu et al. (2022, p. 271) state that "Payment of lower taxes may expose the organisation to a legitimacy gap if the organisation is perceived as not paying its fair share of taxes.". Therefore, consistent with Dowling (2014), Abdelfattah and Aboud (2020), and Lenz (2020), we adopt this responsible/ethical perspective when referring to fair share of taxes and we argue that corporations have a legal and ethical responsibility towards society to make tax contributions that are perceived by society to be fair.

with the influential stakeholders (Lin et al., 2017). Similarly, from a neo-institutional legitimization perspective (Deegan, 2002; Sun, 2021), organizations not only commit to good practices to obtain competitive advantages, but also to improve their social acceptance and image. In this regard, greater commitment to good CPP can increase pressure on corporations to pay their fair share of taxes on their profits, and this in turn may improve corporate social legitimacy and acceptance (Schwartz & Tilling, 2009). From the legitimization perspective, tax avoidance is also considered to be immoral and socially unacceptable behavior, since it can cause immense harm to society by increasing social and income inequality, reducing public investment efficiency, and lowering economic growth (Abdelfattah & Aboud, 2020; Cardoni et al., 2020). One way to reduce firms' engagement in immoral and socially unacceptable tax behaviors is by strengthening their CPP (Sun, 2021). Consistent with this view, committing to good CPP can reduce managers' opportunistic behaviors by encouraging them to obey both the letter and spirit of tax laws, and hence reduce tax avoidance practices. This in turn can improve a firm's reputation and image by ensuring that public scrutiny and criticisms are addressed. However, prior studies (Lin et al., 2017; Abdelfattah & Aboud, 2020) suggest that firms may use impression management to respond to legitimacy threats that arise from engaging in aggressive tax strategies. This implies that firms may show better CPP to cover up the adoption of tax avoidance strategies.

No prior study has empirically examined the impact of CPP on tax avoidance, and this may be due to the idea that "*corruption remains a neglected social issue among CSR priorities*" (Hills, Fiske, & Mahmud, 2009, p. 8). Thus, the issue of corruption was not included in major CSR initiatives, such as the UN Global Compact and the Global Reporting Initiative (GRI), until recently (Hess, 2012; Cardoni et al., 2020). Therefore, this offers a great opportunity to make a new contribution to the existing literature. Previous studies largely focused on examining the impact of CSR practices on tax avoidance (Huseynov & Klamm, 2012; Hoi et al., 2013; Landry, Deslandes, & Fortin, 2013; Laguir et al., 2015; Lanis & Richardson, 2015; Davis, Guenther, Krull, & Williams, 2016; Lin et al., 2017; Abdelfattah & Aboud, 2020; Jiang et al., 2022), and most of these studies found that firms with high CSR activities are less aggressive in avoiding taxes. In addition, few studies have examined the impact of corruption on tax behaviors (Alon & Hageman, 2013; Alm, Martinez-Vazquez, & McClellan, 2016; Sun, 2021), and the findings of these studies indicate that high levels of corruption are negatively associated with good tax practices. For example, using cross-country survey data of executives from over 5,000 companies in 22 former Soviet bloc economies, Alon and Hageman (2013) report that higher levels of corruption are associated with higher levels of tax non-compliance. Similarly, using a sample of nearly 600,000 Chinese companies, Sun (2021) finds that government corruption is positively and significantly associated with adopting aggressive tax practices. However, no existing studies have examined the impact of corporate CPP on tax avoidance behavior.

In the UK, issues relating to corruption and tax avoidance remain highly controversial and continue to generate high media publicity and debate. For example, the FinCEN files leak from the US Financial Crimes Investigation Network reveals that the UK is among the world's largest facilitators of corruption and money laundering (Transparency International UK, 2020). The UK and its overseas territories of the Bahamas, Bermuda, British Virgin Islands, and the Cayman Islands are by far the world's biggest enablers of corporate tax avoidance based on the Corporate Tax Haven Index, published by Tax Justice Network (Tax Justice Network, 2019). Despite these controversies/debates and the increased anecdotal evidence that fighting corruption is an integral part of any organization's social responsibility, existing empirical studies have often ignored the impact of CPP on corporate tax behavior. UK regulations and laws, such as the 2010 Bribery and 2017 Criminal Finances Acts, require UK corporations to implement appropriate practices and measures to minimize the facilitation of tax avoidance activities. Thus, implementing sound CPP can be viewed as a positive development, which can reduce engagement in tax avoidance practices. Therefore, consistent with neo-institutional perspectives and the findings of past empirical studies (e.g., Alon & Hageman, 2013; Alm et al., 2016; Sun, 2021), we expect CPP to be negatively associated with tax avoidance. Thus, we hypothesize that:

H1. *There is a negative and significant association between CPP and corporate tax avoidance.*

3.2. The moderating effect of board characteristics on the CPP-tax avoidance nexus

As noted above, many existing studies have focused on examining the direct impact of CSR practices on tax avoidance and reported mixed results (Hoi et al., 2013; Laguir et al., 2015; Lanis & Richardson, 2015; Davis et al., 2016; Abdelfattah & Aboud, 2020). Few studies have only examined the direct impact of government/firm level corruption on tax behaviors (e.g., Alon & Hageman, 2013; Alm et al., 2016; Sun, 2021), and the findings of these studies indicate that corruption is positively associated with engaging in unacceptable tax practices, including tax non-compliance and tax evasion. However, these studies are impaired in that they ignored the impact of corporate CPP on tax avoidance, as well as the potential moderating effect of corporate board characteristics on this nexus. Prior studies (e.g., Armstrong, Blouin, Jagolinzer, & Larcker, 2015; Sena, Duygun, Lubrano, Marra, & Shaban, 2018) indicate that a corporate board is responsible for making strategic decisions that can influence its firm's efficiency, performance, and effectiveness, including those relating to committing to good CPP and paying corporation taxes. Further, it has been suggested that the extent to which a corporate board can influence a firm's strategic decisions may be contingent on its attributes, such as board size, gender diversity, and independence (Minnick & Noga, 2010; Torgler & Valev, 2010; Sena et al., 2018). Therefore, our study seeks to examine the moderating effect of the three board characteristics of size, gender diversity, and independence on the CPP-tax avoidance nexus. These three board characteristics are selected for the following reasons: (i) these characteristics can be objectively and easily measured (Minnick & Noga, 2010; Doo & Yoon, 2020); (ii) these characteristics are argued to have significant influence on board performance and effectiveness (De Andres, Azofra, & Lopez, 2005; Sena et al., 2018; Riguen, Salhi, & Jarboui, 2020); and (iii) these characteristics have largely been examined by previous literature (Minnick & Noga, 2010; Torgler & Valev, 2010; Sena et al., 2018).

In terms of board size, the legitimization view of neo-institutional theory suggests that large boards are often characterized by greater managerial monitoring, since they are associated with increased diversity in stakeholders' representation, views, skills, expertise, and knowledge (Pearce & Zahra, 1992; De Andres et al., 2005). The increased diversity associated with large boards can encourage managers to apply more pressure on their corporations to commit to good practices, such as engaging in good CPP and paying their fair share of taxes, in order to maintain good relations with powerful stakeholders by improving their corporation's social legitimacy and acceptance (Minnick & Noga, 2010; Ntim & Soobaroyen, 2013). In contrast, the efficiency perspective of neo-institutional theory indicates that large boards often suffer from lack of coordination and communication among board members (Yermack, 1996). Herman (2009) suggests that within larger boards, individual board members may feel less responsible since there are other board members who are involved in making corporate strategic decisions. This can diminish board effectiveness by increasing the risk of fraud and corruption (Beasley, 1996), and consequently increasing the possibility of engaging in tax avoidance. However, prior studies (e.g., Eisenberg, Sundgren, & Wells, 1998; Lehn, Patro, & Zhao, 2009) also suggest that board size is positively related to firm size, and large firms often have large boards because they tend to have complex operations and activities. This implies that board size may not necessarily influence board performance and effectiveness, and hence the CPP-tax avoidance nexus.

From a neo-institutional efficiency perspective, gender-diverse

boards are more effective in controlling and monitoring managerial opportunistic behaviors, such as paying lower taxes, since they are often associated with greater diversity in the form of experience, skills, expertise, and knowledge (Riguen et al., 2020). Consequently, this can impact positively on the link between CPP and tax avoidance by improving the efficiency and effectiveness of board monitoring functions. Similarly, the legitimization view of neo-institutional theory suggests that board gender diversity can improve corporate legitimacy and board trustworthiness by increasing the representation of stakeholders and providing better connections with influential stakeholders to access the needed resources (Perrault, 2015). Therefore, neo-institutional (efficiency and legitimization perspectives) theory suggests that board gender diversity can play an important function in terms of improving board independence/effectiveness by enhancing managerial monitoring and providing better connections with stakeholders. This, in turn, can improve the link between CPP and tax management by encouraging corporations not to engage in tax avoidance behavior.

Finally, with respect to board independence, the legitimization view of neo-institutional theory suggests that independent directors are often appointed to represent the needs of powerful stakeholders and protect their interests (De Andres et al., 2005; Minnick & Noga, 2010). Thus, independent directors are expected to apply greater pressure on their corporations to commit to good practices, such as CPP and not engaging in tax avoidance, in order to sustain good relations with powerful stakeholders and legitimize the activities of their corporations. In contrast, the efficiency perspective of neo-institutional theory indicates that independent directors often do not have specific knowledge about the business environment of their corporations and have a lower understanding of their corporation's daily operations (Petra, 2005; Armstrong et al., 2015). This can diminish their monitoring effectiveness by reducing their influence on corporate strategic decisions, including those relating to committing to good CPP and paying fair tax contributions.

No prior study has empirically examined the moderating effect of board characteristics on the CPP-tax avoidance nexus. Therefore, and based on the expectations of neo-institutional theory, we hypothesize that:

H2. *The board characteristics of size, gender diversity, and independence significantly moderate the CPP-tax avoidance nexus.*

4. Research design

4.1. Sample selection process

This study is based on FTSE 350 listed companies in the London Stock Exchange over the period 2002–2016. We exclude financial firms due to the unique nature of the accounting practices and CSR regulations of such firms (Lanis & Richardson, 2012; Alsaifi, Elnahass, & Salama, 2020; Sarhan & Al-Najjar, 2022). Our sample comprises an unbalanced data set of 2024 firm year observations, representing 207 firms after excluding 121 financial firms and 22 firms with unavailable CPP/corporate governance data. This sample of the largest market capitalization firms included in FTSE 350 companies is able to deal with taxes in an effective way. This may help in avoiding the confounding impact of including different sizes of firm (Dyreng et al., 2008; Minnick & Noga, 2010). Our sampled period begins in 2002 because our main independent variable (CPP) in addition to corporate governance and CSR data is available on ASSET4 DataStream (now known as Refinitiv Eikon) since 2002. Further, our sampling period ends 2016 because in that year the UK Parliament issued a Financial Act which requires large UK firms to disclose information on their tax strategy to the general public. Big firms were required to follow this mandatory tax strategy regulation for financial years starting after September 15, 2016 (i.e., 2017 Annual reports), and hence such regulations may affect companies' tax planning behaviors after 2016. Therefore, we collected data through 2016.

4.2. Variables measurement

We use effective tax rate (ETR) as our main dependent variable to measure tax avoidance. ETR is defined as the ratio of income tax expense to pre-tax accounting/book income (Richardson & Lanis, 2007; Lanis & Richardson, 2012; Halioui, Neifar, & Abdelaziz, 2016; Kovermann & Velte, 2019). Many proxies could be used to measure firm tax behavior (Lanis & Richardson, 2012; Landry et al., 2013; Ortas & Gallego-Álvarez, 2020), however, we use ETR to measure tax avoidance because it is the most commonly used proxy for tax avoidance in the tax behavior literature, and it is calculated using available financial statement data (Dyreng et al., 2008; Lanis & Richardson, 2012; Laguir et al., 2015; Kovermann & Velte, 2019). In addition, different stakeholders are usually interested in corporate taxable income, which is used to calculate the ETR and to evaluate corporate tax behavior (Fallan & Fallan, 2019; Ortas & Gallego-Álvarez, 2020). The variation in this rate reflects tax avoidance activities,[3] which create both temporary and permanent deviations between taxable and financial accounting incomes (Lanis & Richardson, 2012). Lower ETR reflects reduced taxable income to financial accounting income, which indicates tax avoidance. It is worth mentioning that firms usually use available provisions in tax codes to manage/avoid taxes, and thus, tax avoidance is not usually an illegal issue (Minnick & Noga, 2010).

Our main independent variable is CPP. Data on corporate activities and practices to prevent corruption were collected from the Thomson Reuters DataStream database (Refinitiv Eikon). The CPP is measured using a score of six indicators reflecting firms' efforts to fight bribery and corruption, such as having commitment to avoid bribery and corruption at the higher management levels, and relevant employee training. The database records "Yes" or "No" for each indicator, so we assign the value of one to "Yes" and zero to "No". All values are aggregated and the total score ranges from zero to six; scaled to a value between zero and one. Our study also examines whether corporate board characteristics can moderate the relationship between CPP and tax avoidance. Similar to the mainstream of CPP-tax avoidance nexus research, this study uses board size (BOARDSIZE), gender diversity (BOARDDIV), and independence (BOARDIND) to capture corporate board characteristics (Minnick & Noga, 2010; Lanis & Richardson, 2011; Laguir et al., 2015; Richardson, Taylor, & Lanis, 2016; Kovermann & Velte, 2019). Table 1 shows variable definitions.

To control for other effects on corporate tax behavior, we use several control variables in regression models. They include firm size (FIRMSIZE), leverage (LEV), capital expenditure (CAPEX), Tobin's Q ratio (TOBQ), return on assets (ROA), and institutional ownership structure (INSTSHRS). Similar to independent, dependent, and moderating variables, the Thomson Reuters DataStream database (Refinitiv Eikon) was used to collect data for these control variables, in line with previous studies (e.g., Ortas & Gallego-Álvarez, 2020). Large corporations tend to be associated with greater political networks and economic resources which facilitate tax avoidance (Richardson & Lanis, 2007, 2016; Dyreng, Hanlon, & Maydew, 2008; Ortas & Gallego-Álvarez, 2020). Corporations with high leverage percentages are more likely to pay lower tax due to the tax-deductible interest payments (Lanis & Richardson, 2012). We use capital expenditure as a measure of firms' growth. The tax avoidance effect could be substituted by firms' effort to secure necessary resources for growth (Dyreng et al., 2008; Minnick & Noga, 2010). ROA and Tobin's Q have been used as proxies for corporate accounting and market profitability, respectively (Ortas & Gallego-Álvarez, 2020). Previous studies found that profitable corporations (high ROA) are more likely to be involved in tax avoidance activities (Lanis & Richardson, 2012). In addition, tax avoidance behavior could help firms to increase

[3] Tax avoidance (or aggressiveness) activities could include tax exempted income, sales in low-tax jurisdictions, and tax credits (Lanis & Richardson, 2012).

Table 1
Variable definitions.

Variable	Definition
ETR	Effective Tax Rate equals total tax expense divided by pre-tax income.
5YR_ETR	The five years average ETR.
DIFF_ETR	The difference between national statutory applicable tax rate and a firm's ETR.
TAG	Tax Aggressiveness is the industry-size matched ETR less the firm's ETR.
CASH_ETR	The ratio of cash taxes paid to pre-tax accounting income.
CPP	Corruption prevention practices. This anti-corruption provision score is constructed with six indicators related to anti-bribery/corruption provisions, which are collected by ASSET4. The indicators are 1) whether the company mentions public commitment to avoid bribery and corruption at the senior management and the board level, 2) states anti-bribery and anti-corruption in its code of conduct, 3) has internal management tools over bribery and corruption like whistle blowing systems, or hotlines, 4) has a policy to withstand bribery and corruption in its business transactions, 5) has processes in place to avoid bribery and corruption practices at all its operations, and 6) has relevant employee training. ASSET4 records "Yes" or "No" for each indicator, so we assign the value of one to "Yes" and zero to "No". All values are aggregated and the total score ranges from zero to six; scaled to a value between zero and one.
BOARDSIZE	The natural logarithm of the total number of board members at the end of the fiscal year.
BOARDDIV	Percentage of women on the board of directors.
BOARDIND	Percentage of non-executive board members.
FIRMSIZE	The natural logarithm of book value of total assets.
LEV	Long-term debt divided by total assets.
CAPEX	Total capital expenditures (funds used to acquire fixed assets other than those associated with acquisitions) divided total assets.
TOBQ	Tobin's Q is the ratio of total assets minus book value of equity plus market value of equity to total assets in a financial year.
ROA	Earnings divided by total assets.
INSTSHRS	The percentage of strategic share holdings of 5 % or more owned by investment banks or institutions, and pension funds or endowment funds.
MGMTSHRS	The percentage of total shares owned by employees, or by those with a substantial position in a company.
EXECCOMP	The natural logarithm of the total compensation paid to all senior executives.
BIG4	Is a dummy coded one if the client's external auditor is one of the Big 4 audit firms, and zero otherwise.
CSRP	CSR performance is the average economic, environmental, and social scores obtained from Thomson Reuters DataStream database.
STOCKCOMP	The natural logarithm of total value of the stock based compensation of employees.
2010_Dum	Is a dummy coded one for the years following 2010, and zero for the years before 2010.

corporate market value (Dyreng et al., 2008; Lanis & Richardson, 2012). Ownership structure could affect tax planning (Hanlon & Heitzman, 2010; Wilde & Wilson, 2018), hence, our models control for institutional ownership. Finally, similar to tax behavior-corruption prevention literature, our study includes industry and year dummies because tax behavior/rate could fluctuate between different industries and years (Minnick & Noga, 2010; Lanis & Richardson, 2012; Ortas & Gallego-Álvarez, 2020). Our models also cluster at the firm level.

4.3. Empirical models

To test the first hypothesis in this paper that firms adopting CPP are less likely to avoid paying taxes, we estimate the following model:

$$\begin{aligned} ETR_{i,t} = {} & \beta_0 + \beta_1 CPP_{i,t} + \beta_2 BOARDSIZE_{i,t} + \beta_3 BOARDDIV_{i,t} \\ & + \beta_4 BOARDIND_{i,t} + \beta_5 FIRMSIZE_{i,t} + \beta_6 LEV_{i,t} + \beta_7 CAPEX_{i,t} \\ & + \beta_8 TOBQ_{i,t} + \beta_9 ROA_{i,t} + \beta_{10} INSTSHRS_{i,t} + Year\ dummies \\ & + Industry dummies + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Table 1 shows variable definitions and ε refers to the error term.

To test for the moderating effect of board characteristics on the relationship between corporate CPP and tax avoidance, we create interaction variables between CPP and the board characteristics of size, gender diversity, and independence. Accordingly, Model 2 is estimated as follows:

$$\begin{aligned} ETR_{i,t} = {} & \beta_0 + \beta_1 CPP_{i,t} + \beta_2 BOARDSIZE_{i,t} + \beta_3 BOARDDIV_{i,t} \\ & + \beta_4 BOARDIND_{i,t} + \beta_5 CPP_{i,t}{*}BOARDSIZE_{i,t} \\ & + \beta_6 CPP_{i,t}{*}BOARDDIV_{i,t} + \beta_7 CPP_{i,t}{*}BOARDIND_{i,t} \\ & + \beta_8 FIRMSIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} CAPEX_{i,t} + \beta_{11} TOBQ_{i,t} \\ & + \beta_{12} ROA_{i,t} + \beta_{13} INSTSHRS_{i,t} + Year\ dummies \\ & + Industry\ dummies + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where: CPP*BOARDSIZE refers to the interaction term between board size and CPP, CPP*BOARDDIV refers to the interaction term between board gender diversity and CPP, CPP*BOARDIND refers to the interaction term between board independence and CPP, and the other variables remain the same as previously defined.

5. Empirical results and discussion

5.1. Descriptive statistics

Table 2 reports the descriptive statistics of our study variables. The mean (median) value of the dependent variable (ETR) is 0.2390 (0.2549). With regard to the independent variable (CPP), the sample has a mean (median) value of 0.4279 (0.50). The statistics for board characteristics variables show that board size (BOARDSIZE), board diversity (BOARDDIV), and board independence (BOARDIND) have mean (median) values of 2.2114 (2.1972), 0.1265 (0.1111), and 0.6589 (0.6667), respectively. The untabulated mean (median) values of the absolute numbers of total board of directors' members, female directors, and independent directors are 9.44 (9), 1.12 (1), and 6.16 (6), respectively. Our results are similar to those of previous UK studies. For example, Helfaya and Moussa (2017) find that board diversity and board independence in their FTSE 100 sample have mean (median) values of 0.126 (0.1111) and 0.5601 (0.5411), respectively. The control variables' descriptive statistics illustrate that our sample comprises a variety of firms with different sizes and financial profiles. For example, the mean (median) value of firm size (FIRMSIZE) is 14.2136 (14.1084). Further, the untabulated mean (median) value of the absolute numbers of total assets is £7,604,195 (£1,340,250). The average (median) values of LEV,

Table 2
Descriptive statistics.

	Mean	Std. dev.	25th percentile	Median	75th percentile
ETR	0.2390	0.3831	0.1639	0.2549	0.3158
CPP	0.4279	0.3599	0	0.50	0.8333
BOARDSIZE	2.2114	0.2570	2.0794	2.1972	2.3978
BOARDDIV	0.1265	0.1090	0	0.1111	0.20
BOARDIND	0.6589	0.1301	0.5714	0.6667	0.75
FIRMSIZE	14.2136	1.7734	13.101	14.1084	15.3134
LEV	0.2067	0.2039	0.0511	0.1805	0.2927
CAPEX	0.0502	0.0492	0.0180	0.0383	0.0680
TOBQ	1.9538	1.3929	1.1643	1.5559	2.2254
ROA	0.0867	0.1766	0.0211	0.0682	0.1245
INSTSHRS	0.1332	0.14725	0	0.09	0.19

Note: For variable definitions, see Table 1.

Table 3
Pearson correlation matrix for study variables.

	CPP	BOARDSIZE	BOARDDIV	BOARDIND	FIRMSIZE	LEV	CAPEX	TOBQ	ROA	INSTSHRS
CPP	1									
BOARDSIZE	0.203***	1								
BOARDDIV	0.272***	0.149***	1							
BOARDIND	0.362***	0.199***	0.207***	1						
FIRMSIZE	0.448***	0.569***	0.244***	0.386***	1					
LEV	0.043**	0.073***	0.079***	0.075***	0.171***	1				
CAPEX	-0.038*	0.052**	-0.114***	0.051**	-0.056***	0.024	1			
TOBQ	-0.158***	-0.056***	0.082***	0.002	−0.267***	-0.105***	0.056***	1	.	
ROA	-0.130***	−0.024	0.049**	−0.014	0.124***	-0.123***	0.012	0.373***	1	
INSTSHRS	-0.346***	-0.071***	-0.234***	-0.225***	-0.244***	-0.032*	-0.007	-0.041**	-0.003	1

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4
The effect of CPP on tax avoidance.

VARIABLES	ETR (Model 1)	ETR (Model 2)	VIF
CPP	0.0861**	0.0940***	1.85
	(2.33)	(2.57)	
BOARDSIZE	–	-0.0553	1.68
		(-1.23)	
BOARDDIV	–	0.00416	1.52
		(0.04)	
BOARDIND	–	-0.1401*	1.38
		(-1.75)	
FIRMSIZE	-0.0121	-0.002	2.82
	(-1.58)	(-0.20)	
LEV	-0.0575	-0.0590	1.13
	(-1.06)	(-1.08)	
CAPEX	0.3887	0.4500*	1.09
	(1.53)	(1.76)	
TOBQ	0.0046	0.0095	2.03
	(0.76)	(1.38)	
ROA	0.0124	0.0063	1.74
	(0.29)	(0.15)	
INSTSHRS	-0.1002	-0.1062	2.19
	(-1.04)	(-1.08)	
Constant	0.3690***	0.3962***	
	(2.61)	(2.63)	
Year dummies	Included	Included	
Industry dummies	Included	Included	
Observations	2065	2024	
R^2	0.0347	0.0378	

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 4 provides coefficient estimates and t-statistics in parentheses which are calculated based on standard errors obtained by clustering at the firm level.

CAPEX, TOBQ, ROA, and INSTSHRS are 0.2067 (0.1805), 0.0502 (0.0383), 1.9538 (1.5559), 0.0867 (0.0682), and 0.1332 (0.09), respectively. In general, all variables reported in Table 2 illustrate a reasonable range of variation. In addition, their means and medians present an acceptable level of consistency which indicates a normality of distribution (Hair, Black, Babin, Anderson, & Tatham, 2006).

The Pearson pairwise correlation results between the explanatory variables are presented in Table 3. The highest level of correlation of 0.569 is between BOARDSIZE and FIRMSIZE. Therefore, these moderate levels of collinearity between the variables indicate that multi-collinearity is not problematic in our study models (Hair et al., 2006).[4]

5.2. Regression results

Table 4 shows the regression results used to test the prediction in H1 that CPP is associated with tax avoidance. The regression coefficient estimates on CPP in Models 1 and 2 are positive and significantly associated with ETR.[5] Our results suggest that firms actively engaged with corruption fighting practices are less likely to engage in tax avoidance, implying that H1 is empirically supported. This result is consistent with the efficiency perspective of the neo-institutional theory argument that corporations involved in corruption fighting practices are motivated to monitor opportunistic behavior by management (Pillay & Kluvers, 2014; Lin et al., 2017), and thereby less likely to engage in aggressive tax strategies. Furthermore, this result is in line with the legitimization perspective of neo-institutional theory which predicts that corporations involved in good CPP are less likely to engage in tax avoidance in order to increase their social legitimacy and public acceptance (Aguilera et al., 2007; Schwartz & Tilling, 2009; Scott, 2014). Empirically, our findings support the results of past studies which report that corporations engaged with environmental and social activities are less likely to be associated with aggressive tax behavior (Hoi et al., 2013; Laguir et al., 2015; Lanis & Richardson, 2015).

In addition, Table 4 reports that some of the regression coefficient estimates on other explanatory and control variables are significant. The regression coefficient estimates on BOARDIND are negative and significant ($p < 0.10$). This suggests that a large percentage of independent board members is more likely to be associated with higher levels of tax avoidance. This finding is consistent with the efficiency perspective of neo-institutional theory, which suggests that independent directors might not have specialized knowledge related to the business activities, and have less understanding and monitoring of the daily operations (Petra, 2005; Armstrong et al., 2015), which is likely to diminish their control over tax avoidance practices. This is also consistent with prior literature that found no effective impact for board independence on tax avoidance practices. For example, Armstrong et al. (2015) found a negative relationship between board independence and high levels of tax avoidance.

We also observe that the regression coefficient estimate on CAPEX is positive and significant in Models 1 and 2, suggesting that fast-growing firms are associated with paying higher tax rates. This finding is consistent with the view that companies in the growth stage might have greater concerns related to their reputation while expanding into new markets and being exposed to external parties, including tax authorities, and more public pressure, which may lead them to be less inclined to engage in aggressive tax behavior (Graham, Hanlon, Shevlin, & Shroff, 2014; Dyreng, Hoopes, & Wilde, 2016; Hasan, Al-Hadi, Taylor, & Richardson, 2017). This is also consistent with empirical findings of prior studies. For example, Hasan et al. (2017) found a negative association between a firm's growth stage and engagement in tax avoidance behavior.

To test the moderating effect of board characteristics on the association between corporate anti-corruption practices and tax avoidance behavior, we estimate four models of multivariate analyses, reported in

[4] Variance Inflation Factor (VIF) values are reported in Tables 4 and 5. These show that multi-collinearity is not a threat to our results.

[5] Tables 4 to 8 provide coefficient estimates and t-statistics in parentheses, except Models 3 and 4 in Table 7 where z value is in parentheses.

Table 5
The moderating effect of board characteristics on the relationship between CPP and tax avoidance.

VARIABLES	ETR (Model 1)	ETR (Model 2)	ETR (Model 3)	ETR (Model 4)	VIF
CPP	0.0993***	0.0791**	0.0893***	0.0847***	1.90
	(2.72)	(2.20)	(2.54)	(2.36)	
BOARDSIZE	-0.0380	-0.0670	-0.0574	-0.0521	1.74
	(-0.89)	(-1.53)	(-1.27)	(-1.24)	
BOARDDIV	-0.0235	0.0105	0.0048	-0.0115	1.54
	(-0.22)	(0.09)	(0.04)	(-0.11)	
BOARDIND	-0.1419	-0.1309*	-0.1260	-0.1291	1.40
	(-1.80)	(-1.67)	(-1.50)	(-1.58)	
CPP*BOARDSIZE	0.3117***	–	–	0.2339**	1.20
	(2.92)			(2.21)	
CPP*BOARDDIV	–	0.7723***	–	0.5977*	1.19
		(2.46)		(1.89)	
CPP*BOARDIND	–	–	0.3689	0.1381	1.16
			(1.18)	(0.48)	
FIRMSIZE	-0.0064	-0.0019	-0.0028	-0.0055	2.90
	(-0.68)	(-0.19)	(-0.28)	(-0.60)	
LEV	-0.0543	-0.0587	-0.0591	-0.05526	1.13
	(-1.01)	(-1.06)	(-1.07)	(-1.02)	
CAPEX	0.4261*	0.4905*	0.4558*	0.4655*	1.10
	(1.67)	(1.94)	(1.80)	(1.84)	
TOBQ	0.0083	0.0085	0.0102	0.0081	2.04
	(1.26)	(1.22)	(1.51)	(1.22)	
ROA	0.0026	0.0194	0.0019	0.01196	1.76
	(0.06)	(0.47)	(0.04)	(0.29)	
INSTSHRS	-0.1073	-0.1123	-0.1027	-0.1105	2.19
	(-1.09)	(-1.14)	(-1.05)	(-1.12)	
Constant	0.4382***	0.4061***	0.3908 ***	0.4334***	
	(2.88)	(2.68)	(2.59)	(2.86)	
Year dummies	Included	Included	Included	Included	
Industry dummies	Included	Included	Included	Included	
Observations	2024	2024	2024	2024	
R^2	0.0424	0.0427	0.0394	0.0456	

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 5 provides coefficient estimates and t-statistics in parentheses which are calculated based on standard errors obtained by clustering at the firm level.

Table 5. In general, Models 1 to 4 in Table 5 show that there is a positive and significant impact of CPP*BOARDSIZE and CPP*BOARDDIV on ETR. Our results suggest that there is a complementary association between corporate CPP and board size in minimizing corporate tax avoidance. This indicates that large boards encourage the impact of CPP in minimizing corporate tax avoidance behavior. Accordingly, our findings support the legitimization view of neo-institutional theory which suggests that large boards are often characterized by greater managerial monitoring (Pearce & Zahra, 1992; De Andres et al., 2005). Therefore, firms with large boards are expected to adopt good corruption fighting practices that could ultimately lead to reducing any engagement in aggressive tax avoidance strategies (Minnick & Noga, 2010; Laguir et al., 2015; Halioui et al., 2016).

Moreover, our reported results in Model 2 of Table 5 indicate that there is a complementary effect between corporate CPP and board gender diversity in minimizing corporate tax avoidance behavior. This result is in line with the efficiency and legitimization perspectives of neo-institutional theory, suggesting that board gender diversity complements the positive effect of good CPP on ETR by improving the efficiency and effectiveness of board monitoring functions, as well as providing better connections with stakeholders (Perrault, 2015; Richardson et al., 2016; Riguen et al., 2020).

5.3. Additional analyses and robustness tests

This section reports several additional analyses and robustness tests we performed to evaluate the reliability of our results. First, to test the robustness of our results to alternative tax planning measures, we re-run Equations (1) and (2) using different measures of tax planning/avoidance and report our findings in Table 6. The tax avoidance literature argues that using the yearly ETR to examine corporate tax management may be distorted by isolated events and year to year variations (Minnick & Noga, 2010; Balakrishnan, Blouin, & Guay, 2019). Therefore, to ascertain the impact of engagement in CPP on corporate strategic tax management decision and similar to past studies (Dyreng et al., 2008; Minnick & Noga, 2010), our study re-estimates Equations (1) and (2) using the five years average ETR (5YR_ETR) as the dependent variable. Models 1 and 2 of Table 6 show these results.

Additionally, and similar to past tax papers, we use differential ETR (DIFF_ETR) as an alternative measure of tax aggressiveness (e.g., Hanlon & Heitzman, 2010; Ortas & Gallego-Álvarez, 2020). DIFF_ETR is the difference between national statutory applicable tax rate and a firm's ETR. A firm's high levels of DIFF_ETR indicate high levels of tax aggressiveness. Models 3 and 4 of Table 6 show the results of re-estimating Equations (1) and (2) using DIFF_ETR as the dependent variable.

Furthermore, Balakrishnan et al. (2019) constructed a tax aggressiveness measure that compares the firms' average ETR for three years with the same three-year ETR for the portfolio of firms in the same quintile of total assets and same industry. Therefore, the tax aggressiveness (TAG) measure is the industry-size matched ETR less the firm's ETR. The positive greater values of TAG indicate the tax aggressiveness behavior of the firm. Models 5 and 6 of Table 6 show the results of re-estimating Equations (1) and (2) using the TAG as the dependent variable.

Finally, and similar to tax avoidance literature, we use cash ETR (CASH_ETR) as an alternative measure of tax aggressiveness (e.g., Khan, Srinivasan, & Tan, 2017; Lanis & Richardson, 2018). CASH_ETR is measured using the ratio of cash taxes paid to pre-tax accounting income. Results reported in Models 7 and 8 of Table 6 indicate that CPP is still positively but not significantly associated with CASH_ETR. Furthermore, there is some evidence for a moderating effect of board gender diversity on the relationship between CPP and tax avoidance, similar to our main findings reported in Table 5.

In general, the findings reported in Table 6 are similar to results reported in Tables 4 and 5, providing additional support for H1 and H2. Our results suggest that firms with good anti-corruption practices are less likely to engage in tax avoidance over the long run, as compared with other companies in their industry and their national statutory ETR. This is due to improving corporate efficiency by increasing monitoring on the opportunistic behaviors of management (efficiency perspective of neo-institutional theory) and also by improving their social legitimacy and acceptance (legitimization perspective of neo-institutional theory). In addition, these findings support that board size and gender diversity moderate the association between corporate anti-corruption practices and minimizing corporate tax avoidance.

Second, the current study attempts to mitigate endogeneity concerns associated with omitted variables and causality issues. Past tax planning studies argued that executive ownership and/or compensation as well as audit quality could affect executive motivation to plan taxes (Hanlon & Heitzman, 2010; Armstrong et al., 2015; Wilde & Wilson, 2018). Therefore, we re-estimate Equations (1) and (2) controlling for managerial shareholdings (MGMTSHRS), executive compensation (EXECCOMP), and Big 4 audit firms (BIG4), and report our findings in Models 1 and 2 of Table 7. Furthermore, it could be argued that the effect of corruption fighting practices on corporate tax behavior may be conditional on the level of corporate social citizenship. Firms engaged actively in corruption fighting practices are likely to be more responsible in protecting stakeholders' economic interests, the environment, and society (Cardoni et al., 2020). In addition, fighting corruption can be considered as an integral part of a firm's social responsibility (Branco & Delgado, 2012). It is argued that businesses can demonstrate their corporate citizenship and social responsibility by paying higher ETRs (Lanis & Richardson, 2012). To test the possible effect of CSR performance on the relationship between CPP and ETR, we re-estimate Equation (1) after controlling for CSR performance (CSRP) in one

Table 6
Robustness analyses for the relationship between CPP, tax avoidance, and corporate board characteristics using alternative tax avoidance proxies.

VARIABLES	5YR_ETR (Model 1)	5YR_ETR (Model 2)	DIFF_ETR (Model 3)	DIFF_ETR (Model 4)	TAG (Model 5)	TAG (Model 6)	CASH_ETR (Model 7)	CASH_ETR (Model 8)
CPP	0.1274***	0.1397***	-0.0940***	-0.0847***	-0.1842*	-0.2234**	0.1084	0.0892
	(2.78)	(3.10)	(-2.57)	(-2.36)	(-1.71)	(-1.96)	(1.19)	(0.98)
BOARDSIZE	-0.0177	-0.0101	0.0553	0.0521	0.0084	-0.0586	−0.2036*	−0.2068*
	(-0.43)	(-0.22)	(1.23)	(1.24)	(0.07)	(-0.42)	(-1.81)	(-1.80)
BOARDDIV	0.0972	0.1196	-0.0042	0.0115	0.4096	0.5004*	0.2743	0.2722
	(1.09)	(1.27)	(-0.04)	(0.11)	(1.35)	(1.69)	(0.94)	(0.93)
BOARDIND	-0.0476	0.0036	0.1401*	0.1291	0.2831	0.3007	0.0778	0.1096
	(-0.66)	(0.04)	(1.75)	(1.58)	(1.55)	(1.47)	(0.23)	(0.33)
CPP*BOARDSIZE	–	0.1367	–	-0.2339**	–	-0.9274**	–	0.1639
		(1.00)		(-2.21)		(-2.27)		(0.58)
CPP*BOARDDIV	–	0.5161**	–	-0.5977*	–	1.2234*	–	1.1991*
		(2.01)		(-1.89)		(1.76)		(1.87)
CPP*BOARDIND	–	0.4137	–	-0.1381	–	-0.0688	–	0.2066
		(1.48)		(-0.48)		(-0.11)		(0.36)
FIRMSIZE	-0.0070	-0.0103	0.0020	0.0055	-0.0460	-0.0327	0.0214	0.0175
	(-0.71)	(-1.07)	(0.20)	(0.60)	(-2.15)	(-1.50)	(0.91)	(0.77)
LEV	-0.0887	-0.0831	0.0590	0.0553	0.1333	0.1193	−0.1787	−0.1762
	(-1.18)	(-1.11)	(1.08)	(1.02)	(1.15)	(1.08)	(-1.49)	(-1.48)
CAPEX	0.2560	0.2945	-0.4500*	-0.4655*	0.2929	0.4258	−0.2862	−0.2323
	(1.21)	(1.46)	(-1.76)	(-1.84)	(0.72)	(0.96)	(-0.34)	(-0.27)
TOBQ	0.0077	0.0074	-0.0095	-0.0081	-0.0232	-0.0215	0.0402*	0.0376
	(1.03)	(0.96)	(-1.38)	(-1.22)	(-1.44)	(-1.36)	(1.70)	(1.59)
ROA	0.0298	-0.0252	-0.0063	-0.0120	0.0167	0.0498	−0.0649	−0.0475
	(0.49)	(0.41)	(-0.15)	(-0.29)	(0.21)	(0.61)	(-0.65)	(-0.47)
INSTSHRS	-0.0840	-0.0838	0.1062	0.1105	-0.1924	-0.1991	−0.6491	−0.6577
	(-1.18)	(-1.18)	(1.08)	(1.12)	(-0.81)	(-0.85)	(-1.53)	(-1.55)
Constant	0.4138***	0.3918***	-0.0962	-0.1334	0.5108	0.4001	−0.4642	−0.4334
	(3.11)	(2.90)	(-0.64)	(-0.88)	(1.22)	(1.01)	(-0.61)	(-0.58)
Year dummies	Included	Included	Included	Included	Included	Included	Included	Included
Ind. dummies	Included	Included	Included	Included	Included	Included	Included	Included
Observations	1307	1307	2024	2024	2024	2024	1984	1984
R^2	0.1036	0.1317	0.0315	0.0394	0.0251	0.0295	0.025	0.026

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 6 provides coefficient estimates and t-statistics in parentheses which are calculated based on standard errors obtained by clustering at the firm level.

model and the interaction factor CPP*CSRP in another model. Our paper measured CSR performance using the average economic, environmental, and social scores obtained from Thomson Reuters DataStream database. The untabulated results, for brevity, show positive and significant ($p < 0.05$) coefficient estimate on the CPP in the first model, indicating that anti-corruption practices are still positively associated with ETR after controlling for CSR scores. Furthermore, the second model reveals positive and significant ($p < 0.05$) coefficient estimate on the interaction factor CPP*CSRP, suggesting that CSR complements corruption fighting practices in minimizing tax avoidance behavior.

In addition, we employ the instrumental variable two-stage least squares (IV-2SLS) in Models 3 and 4 of Table 7. In corporate governance, CSR, and tax literature, it is challenging to find an instrument that is both relevant and valid (i.e., affects endogenous explanatory variables, such as CPP and board characteristics, but does not simultaneously determine our ETR dependent variable) (Armstrong et al., 2015; Alsaifi et al., 2020; Desender & Epure, 2021; Sarhan & Al-Najjar, 2022). Therefore, our study uses a one-year lag of the board characteristic variables (size, gender diversity, and independence), industry average CPP, and the natural logarithm of stock-based executive compensations (STOCKCOMP) as instruments to examine the endogenous relationship between business engagement with corruption fighting activities and corporate tax behavior. Consistent with corporate governance, CSR, and tax planning past studies, we use the one-year lag of independent/corporate governance variables and industrial average CPP as instruments (e.g., Hoechle, Schmid, Walter, & Yermack, 2012; Wintoki, Linck, & Netter, 2012; Alsaifi et al., 2020; Desender & Epure, 2021; Sarhan & Al-Najjar, 2022). Furthermore, the corporate governance-CSR nexus literature argues that businesses could use executive compensation structure as an effective governance mechanism to encourage corporate involvement in environmental and social sustainable activities (Mahoney & Thorn, 2006; Hong, Li, & Minor, 2016), including corruption fighting practices. Further, the results of the Sargan test of over-identification restrictions indicate that our instruments are valid. Overall, the findings reported in Table 7 support the positive effect of engagement in CPP on minimizing corporate tax avoidance. In addition, our results support the argument of the efficiency perspective of neo-institutional theory that large boards are more likely to be effective in adopting anti-corruption activities that encourage firms to reduce engagement in tax avoidance practices.

Third, and given that our dependent variable (ETR) is truncated, Tobit panel data regression models may outperform the conventional ordinary least squares (OLS) regressions by capturing the heteroscedasticity of the error term and providing more accurate estimates of the expected value of the dependent variable (Lanis & Richardson, 2012; Ortas & Gallego-Álvarez, 2020). Similar to past studies, our study re-estimates Equations (1) and (2) using Tobit panel data regression models (Lanis & Richardson, 2012; Ortas & Gallego-Álvarez, 2020). The Tobit regression analyses are reported in Models 1 and 2 in Table 8. These findings are similar to results reported in Tables 4 and 5, providing support for H1 and H2. Finally, to examine the possible impact of the introduction of the 2010 Bribery Act in the UK on the association between corporate engagement with anti-corruption practices and tax avoidance, the current study re-runs both Equations (1) and (2) after introducing a dummy variable for the introduction of the 2010 Act (2010_Dum) which equals one for the years following 2010 and zero for the years before 2010. We also introduce interaction term CPP*2010_Dum between CPP and 2010_Dum to test H1. Additionally, we use three level interactions terms (CPP*BOARDSIZE*2010_Dum, CPP*BOARDDIV*2010_Dum, and CPP*BOARDIND*2010_Dum) to test H2. The results reported in Models 3 and 4 of Table 8 show a non-significant coefficient estimate on the interaction term

Table 7
Robustness analyses for the relationship between CPP, tax avoidance and corporate board characteristics using additional controls and the 2SLS model.

VARIABLES	Additional controls		2SLS	
	ETR (Model 1)	ETR (Model 2)	ETR (Model 3)	ETR (Model 4)
CPP	0.0926**	0.0812**	0.5421***	0.5248***
	(2.33)	(2.13)	(3.16)	(3.06)
BOARDSIZE	-0.0555	-0.0551	-0.0349	-0.0447
	(-1.16)	(-1.23)	(-0.54)	(-0.70)
BOARDDIV	0.0034	-0.0206	0.2179	0.1638
	(0.03)	(-0.19)	(1.60)	(1.20)
BOARDIND	-0.1607*	-0.1505*	-0.240*	-0.2569*
	(-1.89)	(-1.77)	(-1.74)	(-1.84)
CPP*BOARDSIZE	–	0.2381**	–	0.4082**
		(2.21)		(2.23)
CPP*BOARDDIV	–	0.5500*	–	0.2938
		(1.70)		(0.74)
CPP*BOARDIND	–	0.2280	–	-0.0089
		(0.87)		(-0.03)
FIRMSIZE	0.0015	-0.0019	-0.0415**	-0.0446**
	(0.15)	(-0.21)	(-2.42)	(-2.55)
LEV	-0.0634	-0.0618	-0.1138*	-0.0903
	(-1.10)	(-1.07)	(-1.77)	(-1.40)
CAPEX	0.5138*	0.5423**	0.5482**	0.5340**
	(1.89)	(2.03)	(2.16)	(2.11)
TOBQ	0.0114	0.0106	0.0138	0.0129
	(1.54)	(1.48)	(1.16)	(1.07)
ROA	0.0026	0.0048	-0.0136	-0.0140
	(0.06)	(0.11)	(-0.21)	(-0.22)
INSTSHRS	-0.1032	-0.1099	0.0771	0.0766
	(-0.97)	(-1.02)	(0.63)	(0.63)
MGMTSHRS	-0.0772046	-0.0886873	–	–
	(-0.73)	(-0.91)		
EXECCOMP	-0.0040	-0.0048	–	–
	(-0.50)	(-0.60)		
BIG4	-0.0700	-0.0503	–	–
	(-0.80)	(-0.61)		
Constant	0.4934***	0.5263***	0.6729***	0.7613***
	(2.50)	(2.69)	(3.25)	(3.57)
Year dummies	Included	Included	Included	Included
Industry dummies	Included	Included	Included	Included
Observations	1939	1939	1559	1556
Sargan Test	–	–	3.61826	3.75252
R^2	0.0386	0.0466	–	–

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 7 provides coefficient estimates and t-statistics in parentheses, except Models 3 and 4 where z value is in parentheses.

CPP*2010_Dum, indicating that the introduction of the UK's 2010 Bribery Act does not affect the link between CPP and firms' tax planning. Similarly, the three level interactions terms of CPP*BOARDDIV*2010_Dum and CPP*BOARDIND*2010_Dum have no significant coefficients. However, the positive significant ($p < 0.10$) coefficient estimate on the CPP*BOARDSIZE*2010_Dum indicates that large boards improve the impact of CPP in minimizing corporate tax avoidance behavior, particularly after the 2010 Bribery Act to minimize the legal risks associated with the new regulation.

6. Conclusion

This study empirically examines the impact of CPP on tax avoidance behavior and consequently ascertains the extent to which the CPP-tax avoidance nexus is moderated by corporate board characteristics. We provide empirical evidence regarding the effect of corporate anti-corruption practices on tax avoidance behavior in the UK context. Based on a sample of FTSE 350 UK non-financial listed firms for the period 2002 to 2016, our results indicate that firms with good CPP tend to engage less in tax avoidance behavior and pay more taxes on their profits. This implies that committing to good anti-corruption practices may not only improve corporate efficiency by increasing monitoring of the opportunistic behaviors of management (efficiency perspective of neo-institutional theory), but it can also improve its social legitimacy and acceptance (legitimization perspective of neo-institutional theory) by ensuring that corporate values and norms are aligned with those of the wider community. In addition, the board characteristics of size and gender diversity seem to complement anti-corruption practices by minimizing corporate tax avoidance behavior.

Using the lenses of efficiency and legitimization perspectives of neo-institutional theory, our study provides unique insights into the relationship between corporate anti-corruption practices and tax avoidance behavior, and consequently the extent to which corporate board characteristics could moderate the CPP-tax avoidance nexus. In doing so, it helps to answer the call for research to determine the impact of CSR performance in general (Sikka, 2010; Laguir et al., 2015), and anti-corruption practices in particular, on a corporation's tax behavior (Cardoni et al., 2020). Our study provides useful evidence for governments, regulators, and other stakeholders who aim to determine best business practices/polices which could lead to lower corporate tax avoidance. Our paper highlights possible opportunities for governments to increase corporate tax collection through strengthening anti-corruption legislations, where the findings indicate a positive impact for CPP on tax avoidance behavior. Further, our study might lead to policy reforms that seek to increase corporate board size and gender diversity in order to complement the impact of CPP on reducing tax avoidance, as our findings show a moderating impact for corporate board size and gender diversity on the relationship between CPP and tax avoidance. In addition, our findings encourage investors and other stakeholders to consider companies' CPP in their decisions, where the adoption of these practices could lead to less risk associated with the possible negative consequences of tax avoidance. To practitioners and managers, our findings highlight the importance of adopting CPP and the need to complement these practices with other board mechanisms, such as board size and gender diversity, to ensure less involvement in tax avoidance behavior.

Similar to other studies examining anti-corruption practices-tax avoidance nexus, our study has some limitations. First, our sample is drawn from FTSE 350 largest UK listed firms which are subject to public scrutiny, and hence are more likely to be involved in corruption fighting activities than smaller firms. Therefore, the generalization of our findings to other businesses may be limited. Further research may offer new insights by extending our analysis by incorporating small and medium size firms. Second, this study uses ETR based on published financial statement data to measure tax avoidance. Various past studies criticize the validity of tax avoidance measures that use financial statement data (e.g., Kovermann & Velte, 2019; Ortas & Gallego-Álvarez, 2020), while corporate internal data (e.g., corporate tax filings and tax assessments) are not accessible. Thus, further research might extend our analysis by using corporate internal data once such data become available. Third, the CPP score we used was constructed using data collected from the Thomson Reuters DataStream database (Refinitiv Eikon). This score may not reflect a firm's corruption prevention performance/efficiency in minimizing actual corruption incidences. Fourth, finding instruments in tax behavior and corporate governance studies is challenging. Consistent with the extant tax literature, we used lagged and average industry endogenous variables among our instruments, but this might be perceived as a limitation. Therefore, we encourage future studies to use other types of instruments, if applicable. Fifth, this study focused on examining the moderating effect of board size, board gender diversity, and board independence on the CPP-tax avoidance nexus. Hence, future studies may examine the moderating effect of other board attributes, such as board meetings, expertise, educational background, nationality, and busyness. Sixth, despite including a large number of control variables, prior studies (Cook, Moser, & Omer, 2017; Atwood & Lewellen, 2019) indicate that tax avoidance may be associated with other control variables, including research and development expense, marketing expense, foreign income, and tax haven activity. Due to the unavailability of such data for most of our sampled firms, we did not include

Table 8
Robustness analyses for the relationship between CPP, tax avoidance, and corporate board characteristics using Tobit and before and after 2010 Act analyses.

VARIABLES	Tobit		Before/after 2010	
	ETR (Model 1)	ETR (Model 2)	ETR (Model 3)	ETR (Model 4)
CPP	0.0688***	0.0688***	0.0822*	0.0882*
	(3.69)	(3.65)	(1.81)	(1.78)
BOARDSIZE	-0.0371*	-0.0292	-0.0580	-0.0925**
	(-1.70)	(-1.32)	(-1.26)	(-2.09)
BOARDDIV	0.0395	0.0247	-0.0174	-0.0599
	(0.80)	(0.50)	(-0.15)	(-0.47)
BOARDIND	-0.0787*	-0.0728*	-0.1497*	-0.1618**
	(-1.92)	(-1.77)	(-1.77)	(-2.12)
CPP*BOARDSIZE	–	0.1738***	–	–
		(3.06)		
CPP*BOARDDIV	–	0.0604	–	–
		(0.44)		
CPP*BOARDIND	–	0.1517	–	–
		(1.33)		
2010_Dum	–	–	0.0136	0.0008
			(0.17)	(0.01)
CPP*2010_Dum	–	–	0.0211	0.0030
			(0.28)	(0.04)
CPP*BOARDSIZE*2010_Dum	–	–	–	0.4815*
				(1.75)
CPP*BOARDDIV*2010_Dum	–	–	–	0.5001
				(0.77)
CPP*BOARDIND*2010_Dum	–	–	–	0.1674
				(0.22)
FIRMSIZE	0.0022	-0.0007	-0.0026	-0.0040
	(0.46)	(-0.14)	(-0.25)	(-0.38)
LEV	-0.0479*	-0.0450*	-0.0510	-0.0551
	(-1.78)	(-1.67)	(-0.94)	(-1.04)
CAPEX	0.2882**	0.2807**	0.4644*	0.4758*
	(2.55)	(2.49)	(1.73)	(1.75)
TOBQ	0.0063	0.0058	0.0099	0.0088
	(1.27)	(1.17)	(1.38)	(1.26)
ROA	-0.0084	-0.0110	0.0115	0.0160
	(-0.27)	(-0.35)	(0.26)	(0.37)
INSTSHRS	0.0031	0.0036	-0.1423	-0.1417
	(0.06)	(0.07)	(-1.44)	(-1.45)
Constant	0.3290***	0.3512***	0.4290***	0.5430***
	(4.42)	(4.71)	(2.74)	(3.17)
Year dummies	Included	Included	Included	Included
Industry dummies	Included	Included	Included	Included
Observations	2024	2024	1875	1875
R^2	–	–	0.0404	0.0447
Pseudo R^2	0.0065	0.0074	–	–

Notes: For variable definitions, see Table 1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 8 provides coefficient estimates and t-statistics in parentheses which are calculated based on standard errors obtained by clustering at the firm level.

such variables as controls. Therefore, once data becomes available, future studies may use these four variables as controls. Finally, data collection was limited to the period before 2017 due to the introduction of the UK Financial Act 2016 which requires large firms to disclose information on their tax strategy to the general public. Future studies may expand their data to test the effect of this event on corporate tax planning.

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CRediT authorship contribution statement

Ahmed A. Sarhan: Data curation, Conceptualization, Methodology, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Mohamed H. Elmagrhi:** Conceptualization, Writing – original draft, Writing – review & editing, Validation, Methodology, Supervision. **Emad M. Elkhashen:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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