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Behavioural Framework for Managing Conflicts of Interest in Professional Accounting Firms

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This paper proposes a behavioural framework to complement professional accounting firms' measures for managing conflicts of interest. Following an empirical examination of the process through which conflicts of interest affect accounting professionals' decision-making, we develop guidance for practitioners that will enable them to incorporate behavioural interventions while establishing the context, assessing, treating, controlling and monitoring conflicts of interest. The interventions are aimed at strengthening accounting professionals' *independence in fact* by increasing the professionals' expectation that compliant decision-making will result in positive outcomes, increasing their perception that making compliant decisions is less difficult than making the alternative decisions, facilitating the formation of highly ethical judgements and lowering their propensity to disengage.

The data were collected through a quasi-experiment with 105 professionals from the Big Four accounting firms in the UK. Our work offers practical implications for professional accountants, executive directors, regulatory bodies, executive training and academic research. Other professions facing the ramifications of conflicts of interest (e.g. law, engineering, medicine and architecture) may also use the proposed framework to improve their ethics policies and corporate governance codes for managing conflicts of interest.

Introduction

The accumulative levels of 'noise and bias' in judgement can increase business and operational risk (Kahneman *et al*., 2016). Notably, one of the principal assumptions underlying professional accounting function is that professionals will act ethically, especially concerning their independence – this, however, is not always the case. Although professional accounting firms are heavily regulated in relation to managing the risk of conflicts of interest, the existing measures are criticized for not being able to address professionals' *independence in fact*.[1] The current accounting literature suggests that the focus of existing regulation is on making professionals appear independent to the public (i.e. *independence in appearance*[2]); this is one of

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[1]The independence of an accounting professional is about them taking an unbiased viewpoint in performing audit tests, evaluating results and issuing audit reports (Arens, Beasley and Elder, 2002). Independence also implies freedom from conflicts of interest (Nelson, 2004). *Independence in fact* denotes actual objectivity and a state of mind characterized by the professional's lack of bias and integrity (Dopuch *et al*., 2003; Salehi, 2009).

[2]*Independence in appearance* is about the public's perception that an accounting professional (and the accounting

the reasons why the accounting profession invites public scrutiny. Extant research (e.g. Guiral *et al*., 2010; Ishaque, 2019; Moore *et al*., 2005, 2006) suggests that conflicts of interest lead to biased decision-making and that more than regulatory efforts are required. Some studies suggest that a behavioural framework which addresses the socio-psychological and cognitive attributes of decision-makers can provide a better insight into accounting professionals' judgements and decision choices (Bobek, Hageman and Radtke, 2015; Cohen *et al*., 2012; Naranjo-Gil *et al*., 2012; Pasewark and Viator, 2006; Persellin, 2013; Robertson, 2010).

Accounting professionals, like any other humans, are unreliable decision-makers due to cognitive bias, noise and heuristics in their decision-making process. The ubiquity of bias, noise and heuristics in decision-making influences the perception and judgement of professionals and thus alters the cognition equation (Kahneman *et al*., 2016). Recent evidence (e.g. Adler and Liyanarachchi, 2020; de Graaf, 2019; Fairchild, Gwilliam and Marnet, 2019) supports a paradigm shift that focuses on the behavioural aspects of accounting professionals rather than on economic and institutional models. For instance, Fairchild, Gwilliam and Marnet (2019) assert that the existing standards, codes and regulations fall short in addressing corporate governance challenges, especially in the field of auditing. Besides, in addition to economic incentives, policy-makers and scholars need to consider the impact of socio-psychological and emotional factors on corporate decision-making and performance. Some earlier studies (e.g. Bazerman and Gino, 2012; Cain, Loewenstein and Moore, 2005; Clements, Neill and Stovall, 2012; Moore, Tanlu and Bazerman, 2010; Nelson, 2004) also suggest that conflicts of interest can be managed effectively if complementary behavioural measures are implemented for addressing *independence in fact*. Moore *et al*. (2006) and Ayal and Gino (2012) suggest that accounting professionals' *independence in fact* can be addressed by understanding how the relationship between conflicts of interest and decision-making behaviour is channelled through their cognitive processes.

Our study contributes to the behavioural accounting and ethics literature in five ways. First, it advances the recent behavioural accounting literature by providing empirical evidence for how conflicts of interest affect accounting professionals' decision-making behaviour. Second, it combines social cognitive theory[3] (Bandura, 2008) with the throughput model of decision-making[4] (Rodgers and Fayi, 2019) to explain the relationship between the conflicts of interest and accounting professionals' likelihood of engaging in compliant decision-making. Third, it provides an account of how accounting professionals' positive outcome expectancy, perceived difficulty and ethical judgement affect their decision-making behaviour. Fourth, it highlights the role of accounting professionals' perceptual bias, noise and heuristics in their decision-making behaviour. Finally, following the discussion of the empirical results, a risk management perspective is adopted to develop a behavioural framework that complements professional accounting firms' measures for managing conflicts of interest. The accounting literature suffers from a huge insufficiency of research on the relevance of bias, noise and heuristics to risk management around conflicts of interest. Thus, our aim – to propose a framework that can be used as a guide for practitioners to encourage compliant decision-making while improving risk management efforts around conflicts of interest – is both timely and relevant.

Empirical data were collected through a web-based quasi-experiment with 105 professionals from the Big Four accounting firms in the UK. These professionals included partners, members of the management board, directors and statutory auditors. The study's model has been tested using SmartPLS 3 analysis software. Our study provides a unique insight into accounting professionals' decision-making behaviour; it also proposes various interventions (using statistical models) that will enable these professionals to assess, treat, control and monitor conflicts of interest in an effective way. The interventions are proposed

firm) is objective in conduct and forms impartial judgements (Dopuch *et al*., 2003; Salehi, 2009).

[3]Social cognitive theory establishes that human behaviour is regulated through cognitive processes in a given social context (for details, see Bandura, 1986, 1991, 1999, 2006, 2008).

[4]The throughput model of decision-making draws on the concept of *process thinking*, which suggests that decision-making behaviour is characterized by the interaction of four concepts, i.e. information, perception, judgement and decision choice (for details, see Rodgers, 1997, 2006, 2009) and Rodgers and Fayi (2019).

to increase the instances of compliant behaviour by encouraging the following amongst professionals: (i) the expectation that the positive outcomes of compliant decision-making will outweigh the negative outcomes; (ii) the perception that making compliant decisions is less difficult than making alternative decisions; (iii) the formation of highly ethical judgements; and (iv) a low propensity to morally disengage.

The next section will review the literature relevant to this study. The third section will detail the theoretical framework this study builds on. The data collection, analysis procedures and empirical results will be included in the fourth section. Following on from the insights revealed, the fifth section will propose a behavioural framework for managing the risk of conflicts of interest in professional accounting firms. Finally, the paper concludes in the sixth section.

Literature review

Some cognitive psychologists (e.g. Kahneman and Tversky, 1984; Tversky and Kahneman, 1974) advise that judgement and decision choice are heuristic exercises, which are conditioned by the individual's cognitive bias, perception and intuitive assessment of the probability of the desired outcomes. One of the assumptions fundamental to professional accounting function is that accounting professionals will act ethically, independently and in strict compliance with the rules. In practice, however, accounting professionals are usually confronted with judgement calls, in which they are guided by their informal experiences and personal values rather than rigid accounting rules. This implies that, due to the cognitive bias and noise in subjective judgement, professional accountants may contradict their own judgement when faced with the same data on different occasions. In this regard, Kahneman *et al*. (2016) suggest that 'noise and bias' may distort professionals' judgement; this consequently increases business and operational risk.

A common theme that dominates many discussions regarding the causes of recent accounting scandals centres around poor/unethical professional behaviour (Bhattacharjee, Maletta and Moreno, 2017; Moore and Loewenstein, 2004; Robertson, 2010). There is a thriving debate in the extant corporate governance literature regarding the behaviour of accounting professionals and the efficacy of the current corporate governance mechanism. For instance, Cohen *et al*. (2012) argue that the overt behaviour of some directors and other accounting professionals, especially those from the Big Four, has undermined – and will continue to undermine – the effectiveness of the Sarbanes–Oxley (SOX) Act of 2002 and other corporate governance codes. Other similar studies (e.g. Bhattacharjee, Maletta and Moreno, 2017; Bobek *et al*., 2016; Persellin, 2013) show that strengthening existing corporate governance codes, together with extended layers of legislation, has not been able to reduce the level of abuse and reoccurrence of corporate scandals.

In furtherance to the aforementioned arguments, Fairchild, Gwilliam and Marnet (2019) assert that our ability to understand and improve the 'mindset' and behavioural attributes of those charged with governance can provide a better result. As in every other human being, the mental map of accounting professionals is governed by behavioural factors that are cognitively driven. These behavioural factors can be psychological (Naranjo-Gil *et al*., 2012; Persellin, 2013; Robertson, 2010; Tian, Tuttle and Xu, 2015), social (Bobek, Hageman and Radtke, 2015; Bobek *et al*., 2016; Pasewark and Viator, 2006) and combinations of socio-psychological and professional factors (Bandura, 2008; Bobek, Hageman and Radtke, 2015). Therefore, the extant literature suggests that a deeper understanding of cognitive factors is crucial in enhancing the effectiveness of corporate governance and risk management.

Fairchild, Gwilliam and Marnet (2019) examined cases of audit failure and posited that behavioural remedies (i.e. a deeper understanding of managing the behavioural factors that systematically distort judgement and decision-making in the event of conflicting interests) can provide a better solution to corporate abuse. Their work highlights the need for behavioural and cognitive measures to complement the traditional regulatory approaches implemented to manage the risk of conflicts of interest. Previous studies on corporate governance effectiveness have, more or less, looked at conflicts of interest from a 'rational' rather than a 'social cognitive' perspective. Some other researchers (e.g. Ayal and Gino, 2012; Bazerman and Gino, 2012; Clements, Neill and Stovall, 2012; Cremer *et al*., 2011; Ishaque, 2020; Moore, Tanlu and Bazerman,

2010) have examined conflicts of interest from psychological and cognitive perspectives. These studies suggest managing conflicts of interest by using behavioural interventions to strengthen accounting professionals' *independence in fact*. However, extant research does not offer behavioural frameworks to complement the existing measures that professional accounting firms adopt to manage conflicts of interest.

The ubiquity of cognitive bias, noise and heuristics in the decision-making process, which occurs in the earlier stages of the cognition process, subconsciously influences the perception and judgement of professionals and thus alters the cognition equation before conflicts of interest even raise concerns. In this regard, Andersen and Hjortskov (2016) and Butler (2016) state that judgements are influenced by heuristic bias, which is predicated on the reflective and intuitive dual-process thinking mode of a decision-maker. Since conflicts of interest are a key risk that has legal ramifications, extant research (e.g. Bedard *et al*., 2008; di Florio, 2012; Guiral *et al*., 2010; Johnson and Hansen, 2011; Lo and Field, 2009; Moore, Tanlu and Bazerman, 2010; Thagard, 2007) considers conflicts of interest as a risk and suggests the adoption of the risk management perspective. Importantly, the International Ethics Standards Board for Accountants (IESBA, 2018) supports the idea of managing conflicts of interest as a risk characteristic of the professional accounting environment. However, the accounting literature suffers from a huge insufficiency of research on the relevance of bias, noise and heuristics to risk management around conflicts of interest.

We argue that conflicts of interest are a behavioural and complex cognitive phenomenon, which should be captured by a comprehensive analytical framework. However, studies that focus on the behavioural aspects of professional accountants are limited and sparse. In this regard, Fairchild, Gwilliam and Marnet (2019) call for experimental research that examines the behavioural nudges influencing the judgement and decision choices of accounting professionals. Our study responds to the concurrent calls for further research and gaps in the extant literature by advancing understanding of the operation of conflicts of interest at the level of an individual accounting professional, proposing a behavioural framework for managing the risk of conflicts of interest.

Theoretical framework

The main theoretical stance underpinning this study is the argument that professional judgement is governed by the interplay of multi-faceted combinations of behavioural micro-elements, such as self-interest, socio-cognitive structures and professional ethics. According to Bandura (1991, 2006, 2008), self-interest is automatic, often unconscious and viscerally compelling. The automaticity of self-interest gives it a primal power to govern an individual's judgement, thus making it difficult for decision-makers to eradicate its influence on their judgement. In agreement with Bandura's view, Moore, Tanlu and Bazerman (2010) and Tian, Tuttle and Xu (2015) suggest that the social cognitive landscape of a decision-maker is driven by sets of psychological sub-functions that can influence their professional judgement. These psychological micro-foundations[5] include self-monitoring one's behaviour (i.e. individuals monitoring what determines and/or affects their behaviour), self-reflection (i.e. individuals reflecting on their behaviour in relation to personal standards and environmental circumstances) and affective self-reaction (i.e. individuals possessing self-reflective and self-reactive cognitive capabilities that enable them to exercise control over their thoughts, motivations and actions). Behaviour, therefore, is governed by the automatic as well as the controlled cognitive processes.

Against the backdrop of the above discussions, this study posits that the behavioural attributes of accounting professionals are shaped by an interplay of internal factors, which are self-generated and external factors (i.e. secondary interest,[6] socio-cognitive factors, social environment and professional ethics compliance, etc.). Professional accountants have to perform their

[5]The terms 'behavioural micro-elements', 'psychological sub-functions' and 'psychological micro-foundations' capture decision-makers' *person-centric perspective*, which influences their judgement. The person-centric perspective involves behavioural issues, such as self-interest, opportunistic behaviour, limited rationality, etc., which influence individual judgements (Gond *et al*., 2017).

[6]Secondary interests are characterized by different threats to compliance within the fundamental principles of professional ethics. These include self-interest threat, intimidation threat, self-review threat, familiarity threat and advocacy threat (IESBA, 2015, 2018).

professional responsibilities within the parameters of their ethical obligations. One of the central arguments in this study is that conflicts of interest take place when professional responsibilities clash with secondary interests. However, understanding the dynamics of the causal processes involved (i.e. the cognitive footprint or behavioural aspects of conflicts of interest) requires a better behavioural framework that can capture the key cognitive constituents of the risk of conflicting interests. This study attempts to provide an answer to this challenge.

As a precursor to developing a behavioural framework, it is essential to understand the process through which conflicts of interest threaten accounting professionals' compliant behaviour. This is because the proposed behavioural interventions should ideally be backed by empirical evidence for the relationship between conflicts of interest and decision-making and the role of accounting professionals' mental processes in their decision-making. Extant research highlights the significance of unveiling the cognitive mechanisms that underlie decision-making behaviour. For instance, Tenbrunsel (2005) suggests that understanding conflicts of interest is about recognizing the cognitive obstacles to compliant decision-making and then finding out how to overcome these barriers. This is because cognitive bias, noise and heuristics can influence accounting professionals' perception and judgement in relation to the weight they place on evidence/facts before any conflict of interest even enters the equation. Similarly, a recent study by Guest (2019) highlights the cognitive conflicts that diverse decision-making groups incur due to their differing cognitive beliefs and attitudes.

By integrating social cognitive theory and the throughput model of decision-making (Figure 1), this study adopts the stimulus–organism–response (SOR) paradigm[7] (Holt *et al*., 2015) to understand the process through which conflicts of interest affects accounting professionals' decision-making.

The main reason for this combination stems from the fact that experiencing a conflict of interest is a cognitive phenomenon, which is influenced by the information available to accounting professionals and their perceptions, judgements and decision choices (Rodgers, 2009; Rodgers and Gago, 2001, 2006). Further, the cognitive footprints of organizational decision-makers are conditioned by social/environmental structures (Bandura, 2006, 2008). In comparison to the classic stimulus–response (SR) paradigm (Holland, 2008) to examining behaviour, which is a classic and rather obsolete view, the SOR paradigm (Holt *et al*., 2015) allows researchers to examine cognitive processes (e.g. POE, PD, EJ) representing the 'organism' dimension, with conflicts of interest as the 'stimulus' and compliant decision-making behaviour as the 'response'.

Previous research highlights the viability of social cognitive theory and the throughput model in investigations of the cognitive processes of accounting professionals. For instance, within the bounds of social cognitive theory, some scholars (e.g. Afifah *et al*., 2015; Agle *et al*., 2014; Cheng and Chu, 2013; Iskandar and Sanusi, 2011; Juhari *et al*., 2013; Wongpinunwatana and Panchoo, 2014) suggest the need for further studies of accounting professionals' positive outcome expectancy in relation to compliant decision-making, perceived difficulty in making compliant decisions and ethical judgements. Moreover, other studies (e.g. Guiral *et al*., 2010; Moore, Tanlu and Bazerman, 2010; Rodgers and Fayi, 2019) highlight the usefulness of the throughput model for examining the role of bias, noise and heuristics in the decision-making process. These studies help in examining the different decision-making pathways (characterized by the interaction of information, perception and judgement) that accounting professionals adopt when making decisions.

Arguably, the combination of social cognitive theory with the throughput model offers advantages in terms of the better predictive and explanatory powers of the resulting models (Ishaque, 2020).[8] This approach adds to the extant literature by adopting a comprehensive cognitive approach to examine the process through which conflicts of interest affects accounting professionals' decision-making behaviour. Notably, accounting

[7]The SOR paradigm highlights that 'in the face of the stimuli, organisms form the cognitive representations (i.e. perceptions and judgements) of the world, and respond through their conduct, actions or behaviour' (Holt *et al*., 2015).

[8]Our theoretical framework is derived from Ishaque (2020), which combines social cognitive theory with the throughput model of decision-making. The study examines a different combination of variables, each motivated by a different aim, and with a different contribution to the current professional accounting literature.

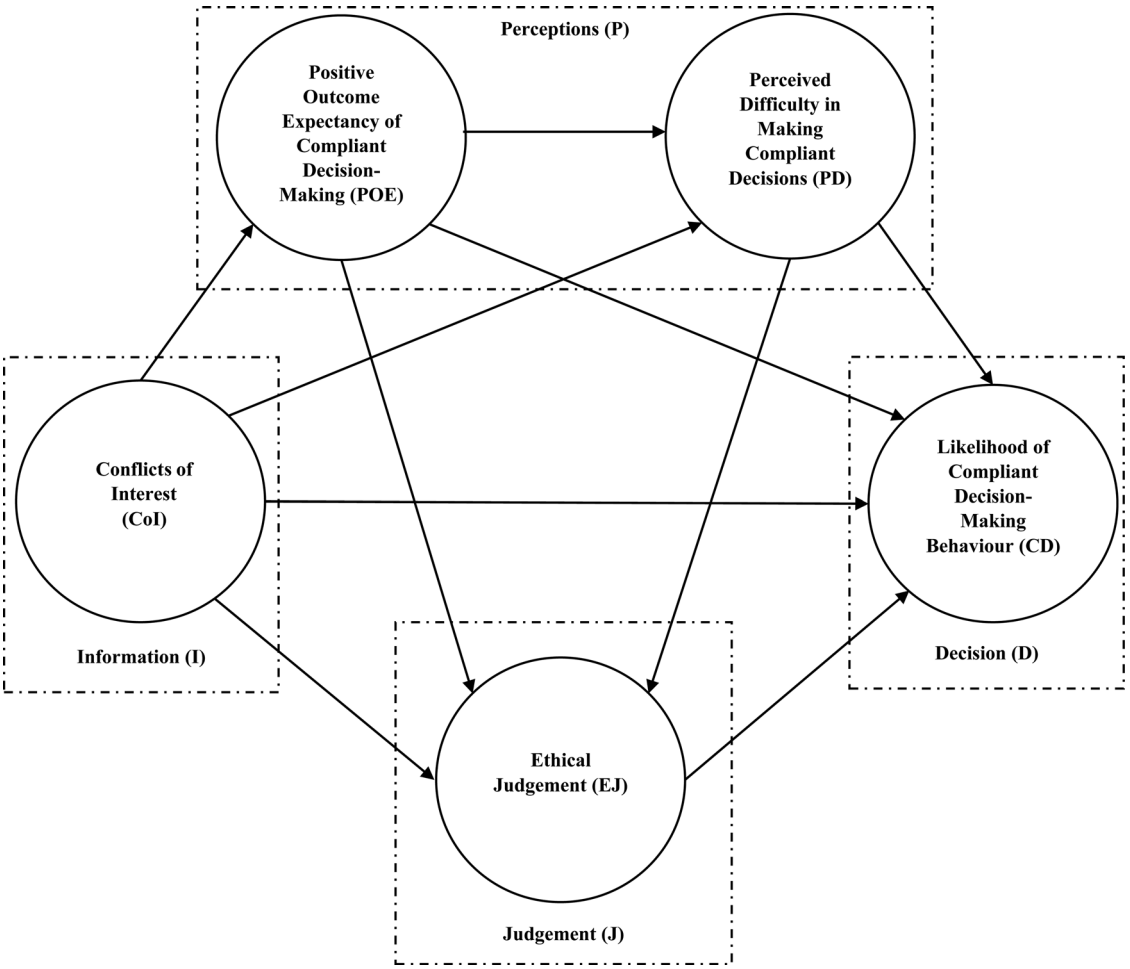

Figure 1. Theoretical model

practitioners' failure to address conflicts of interest and the associated cognitive bias, noise and heuristics, which permeate the fabric of strategic decision-making, may lead to another financial crisis. Therefore, we employ a theoretical framework that enhances our understanding of how conflicts of interest operate at the level of an individual professional, and allows us to examine the relevance of bias, noise and heuristics to risk management around conflicts of interest.

Materials and methods

Research instrument

Individual accounting professionals are the unit of analysis in our study. Empirical data were collected from 105 professionals from the Big Four accounting firms in the UK through a repeated measures quasi-experiment (web-based) comprised of four vignettes. The vignettes are derived from the *Ethical Dilemmas Case Studies* by the UK and Ireland's Consultative Committee of Accountancy Bodies (2011). These case studies provide guidance on what constitutes 'compliant' and 'deviant' behaviour in a given ethical dilemma that minimizes researchers' subjectivity. The research instrument, detailing the vignettes and measurement of variables, is presented in Appendix A in the online supporting information.

The independent variable is represented by the conflicts of interest as manipulated across four different threats to compliance with fundamental principles of professional ethics (IESBA, 2015, 2018). Vignette 1 involves *conflicts of interest due to a self-interest threat* (CoI-1); vignette 2 involves

conflicts of interest due to an intimidation threat (CoI-2); vignette 3 involves *conflicts of interest due to a combination of self-interest and self-review threats* (CoI-3); and vignette 4 involves *conflicts of interest due to a combination of self-interest, intimidation, self-review and familiarity threats* (CoI-4). CoI-1, CoI-2, CoI-3 and CoI-4 represent the four categories of conflicts of interest considered in this study. A total of four interviews were conducted with accounting professionals, one from each of the Big Four accounting firms, to identify these categories as being the most relevant to an accounting professional's compliant decision-making behaviour.

In all four vignettes, the *likelihood of making a compliant decision* (CD) is the dependent variable representing the decision choice that conforms with the primary interest of the accounting profession.[9] The intervening situational cognitive constructs include accounting professionals' *expectation that the overall positive outcomes of compliant decision-making will outweigh the overall negative outcomes* (POE), accounting professionals' *perceived difficulty in making a compliant decision* (PD) and their *judgement about the ethicality of compliant decision choices* (EJ).

Occupational self-efficacy (OSE) and the *propensity to morally disengage* (PMD) have been statistically controlled for as representing the dispositional cognitive constructs of accounting professionals (Afifah *et al*., 2015; Agle *et al*., 2014; Bandura, 2002; Cabrera-Frias, 2012; Moore *et al*., 2012; Palmer, 2013; Rigotti, Schyns and Mohr, 2008). OSE represents accounting professionals' *perceived ability to successfully cope with occupation-related challenges and tasks*, while PMD represents accounting professionals' *tendency to consider unethical behaviour as ethically acceptable*.

[9]The primary interest of the accounting profession is characterized by serving in the best interests of the public, including investors, prospective investors, lending banks, credit agencies and government regulators (Oseni, 2011). According to Pierce (2007) and Clements *et al*. (2012), the primary responsibility of professional accounting firms is to serve and protect the public interest by reporting on the fairness of clients' financial statements. The regulatory perspective holds that compliance with the fundamental principles of the accounting profession (i.e. integrity, objectivity, professional competence, due care, confidentiality and professional behaviour) constitutes the primary interest of the accounting profession (IESBA, 2015, 2018).

Model assessment

Using SmartPLS 3, path analysis was adopted as a statistical technique to analyse the empirical data.[10] Separate models were run for each of the four categories of conflict of interest: CoI-1, CoI-2, CoI-3 and CoI-4. The model was first assessed through the examination of different criteria, including the coefficients of determination (R^2), path coefficients (β), effect size (f^2), predictive relevance (Q^2), goodness of model fit (using standardized root mean square residuals, SRMR), multicollinearity and common method bias (using variance inflation factor, VIF). Except for POE, the R^2, f^2 and Q^2 values are in accordance with the acceptable thresholds in the relevant literature (e.g. Hair, Ringle and Sarstedt, 2013; Henseler, Hubona and Ray, 2016; Kock, 2015; Kock and Lynn, 2012; Roth, 2012). The contextual factors, including regulation, policies and compliance codes, are important predictors of POE in the professional accounting environment (Ishaque, 2020) and the low values of R^2, f^2 and Q^2 reflect that the only path leading to POE, in our model, is conflict of interest.

Overall, evaluation of the assessment criteria provides evidence that this study's model holds predictive accuracy and relevance, predicts the outcome significantly well, fits the empirical data well and conveys the intended information. This implies that the estimates obtained from this study's model are meaningful and that the conclusions drawn are not susceptible to doubt. Appendix B in the online supporting information presents the results of model assessment.

Empirical results

Figure 2 presents the model that has been tested for empirical evidence of the relationship between conflicts of interest and compliant decision-making and the role of accounting professionals' mental processes in their compliant decision-making behaviour (CD). The model testing results are tabulated in Appendix C in the online supporting information.

[10]Our choice of SmartPLS 3 to perform path analysis has been informed by Hair *et al*. (2011) and Lowry and Gaskin (2014).

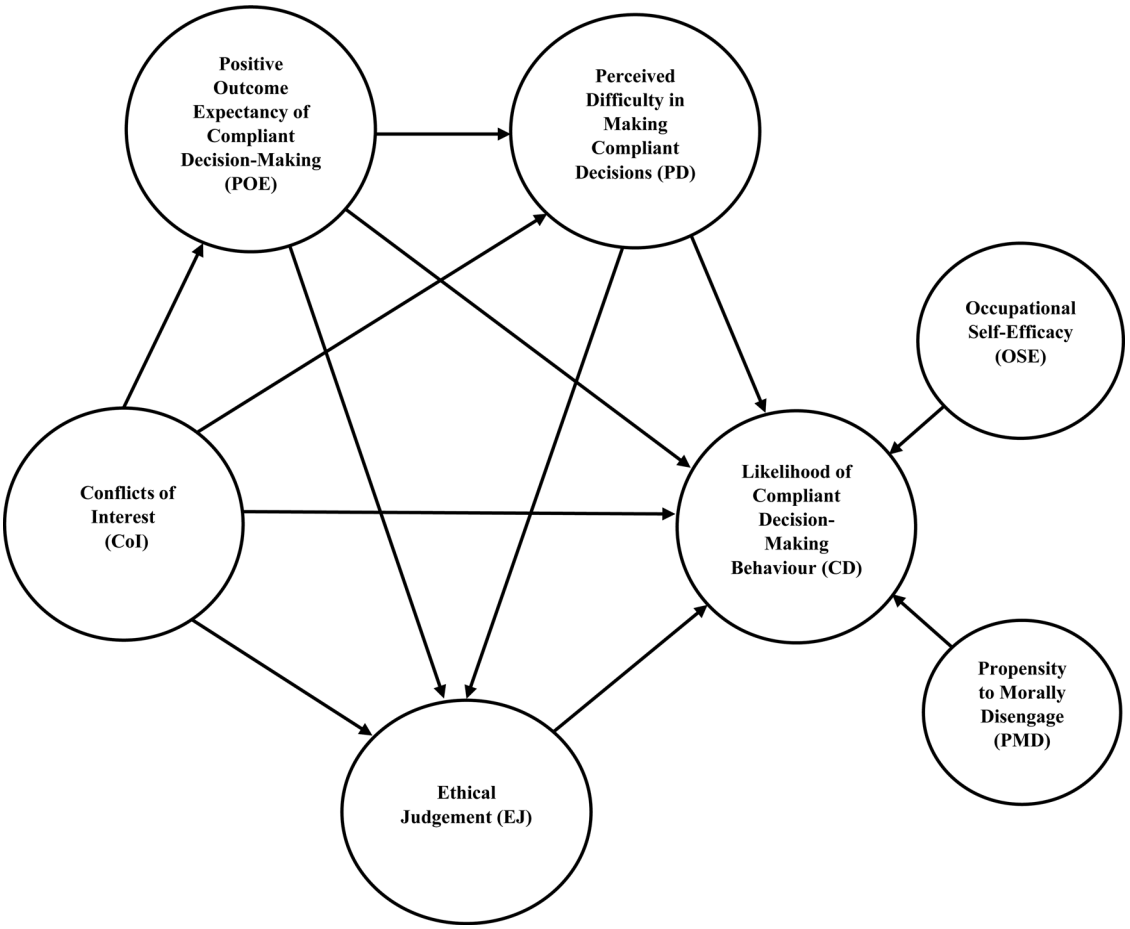

Figure 2. Conflicts of interest and compliant decision-making behaviour

The empirical results[11] show that accounting professionals' *positive outcome expectancy of compliant decision-making* (POE), *perceived difficulty in making compliant decisions* (PD) and *ethical judgements* (EJ) play a mediating role in the relationship between *conflicts of interest* (CoI) and the *likelihood of compliant decision-making behaviour* (CD). High POE, low PD and high EJ are evidenced to be the situational cognitive predictors, while low *propensity to morally disengage* (PMD) is the dispositional cognitive predictor of CD. Moreover, POE, PD and EJ interact to affect accounting professionals' decision-making in the event of conflicts of interest – specifically, high POE leads to low PD and high EJ, and low PD leads to high EJ. During this process, conflict of interest plays a biasing role in the decision-making process. Professionals' POE and PD serve as sources of perceptual bias, noise and heuristics, and are demonstrated to be largely unintentional.

The results provide evidence that conflicts of interest in professional accounting firms threaten accounting professionals' adoption of compliant decision-making behaviour. Importantly, this process is governed through the agency of the professionals' POE, PD and EJ. Specifically, the likelihood of compliant decision-making is high in case of accounting professionals who perceive the positive outcomes of compliant decision-making to outweigh the negative outcomes, perceive less difficulty in making the given compliant decision, form a judgement that the compliant decision choice is the most ethical, and have a low propensity to consider unethical behaviour as acceptable. Notably,

[11]The empirical results have been included but are not interpreted as being 'positive' or 'negative', since this is beyond the scope of this paper. The key insights suggested by these results have been considered in order to develop a behavioural framework, which is the aim of this paper.

the results for the different categories of conflict of interest converge to reveal the same insights; this is evidence that, in principle, various categories of conflict of interest affect decision-making in a similar manner.

Therefore, the findings of this study may well be generalized across other similar categories of conflict of interest.

Behavioural framework: interventions for managing conflicts of interest

In agreement with Kahneman *et al*. (2016), our empirical results for the role of accounting professionals' mental processes in their compliant decision-making behaviour suggest that the accumulative levels of bias and noise in judgement can increase the level of risk, including the negative effect of conflicts of interest on compliant decision-making. Having found that accounting professionals' adoption of compliant decision-making (CD) is governed by the agency of their positive outcome expectancy (POE), perceived difficulty in making compliant decisions (PD) and ethical judgements (EJ), and also affected by their propensity to morally disengage (PMD), we propose a behavioural framework that can be conceptualized as a managerial decision-making support system. Since accounting professionals' POE, PD and PMD serve as the sources of cognitive bias, heuristics and noise, these affect their state of mind and, as a result, their *independence in fact*.

Conflict of interest is a key risk that has legal ramifications; however, our review of the literature (e.g. Bhattacharjee, Maletta and Moreno, 2017; Bobek *et al*., 2016; Persellin, 2013) highlights that strengthening existing corporate governance codes, together with extended layers of legislation, has not been sufficient to reduce the level of abuse and reoccurrence of corporate scandals. Therefore, from a risk management perspective, our proposed behavioural interventions are aimed at strengthening accounting professionals' *independence in fact* to facilitate effective management of conflicts of interest. Therefore, building on the insights provided by our findings, a complementary behavioural framework has been developed to propose various interventions at the typical stages of establishing the context, assessing (i.e. identifying, analysing and evaluating), treating, controlling and monitoring conflicts of interest. Importantly, as suggested by some other scholars (e.g. Bazerman and Gino, 2012; Moore, Tanlu and Bazerman, 2010; Williford and Small, 2013), practitioners may adopt such intervention mechanisms to lessen the damaging effects of conflicts of interest.

The highlights of our proposed behavioural framework (Figure 3) are as follows.

1. When establishing the context for managing conflicts of interest, accounting firms may consider introducing interventions aimed at encouraging high POE, low PD and high EJ. According to Bandura (2008), this could be achieved by introducing such adjustments to the environment/context that are likely to encourage high POE, low PD and high EJ. In this regard, the possible adjustments could be: applying ethical codes of conduct to facilitate the adoption of compliant behaviour (Adams, Tashchian and Shore, 2001; Bazerman and Gino, 2012; Clements, Neill and Stovall, 2012), implementing a strong ethics and compliance programme (Williford and Small, 2013) and organizational culture to reinforce ethical conduct (di Florio, 2012) and aligning reward systems with the primary interests of the profession, such that compliant behaviour is rewarded and deviant behaviour punished (Amali, 2010; Green and Zimiles, 2013). Arguably, such interventions are likely to promote compliant decision-making behaviour.

Rodgers and Fayi (2019) posit that the decision-making process of professional accountants is governed by the codes of conduct constructed by professional accounting bodies. Thus, the ethical codes of professional conduct provide a cognitive 'map line' through which professional accountants interpret, sort, arrange, rank and rate information for decision-making.

2. When assessing (i.e. identifying, analysing and evaluating) conflicts of interest, practitioners may consider taking into consideration the predictive powers of accounting professionals' cognitive processes. Specifically, high POE $\rightarrow$ CD, low PD $\rightarrow$ CD, high EJ $\rightarrow$ CD, high POE $\rightarrow$ low PD and high EJ, high PD $\rightarrow$ less EJ and low PMD $\rightarrow$ CD. This implies that the identification of the sources, causes, consequences and likely impact of conflicts of interest is bound to be affected by accounting professionals' cognitive processes. As such, there is a need to determine the level (i.e. high versus low) of the said cognitive predictors. This could be achieved through electronic decision aids (Pierce and Sweeney, 2004), which might be customized to

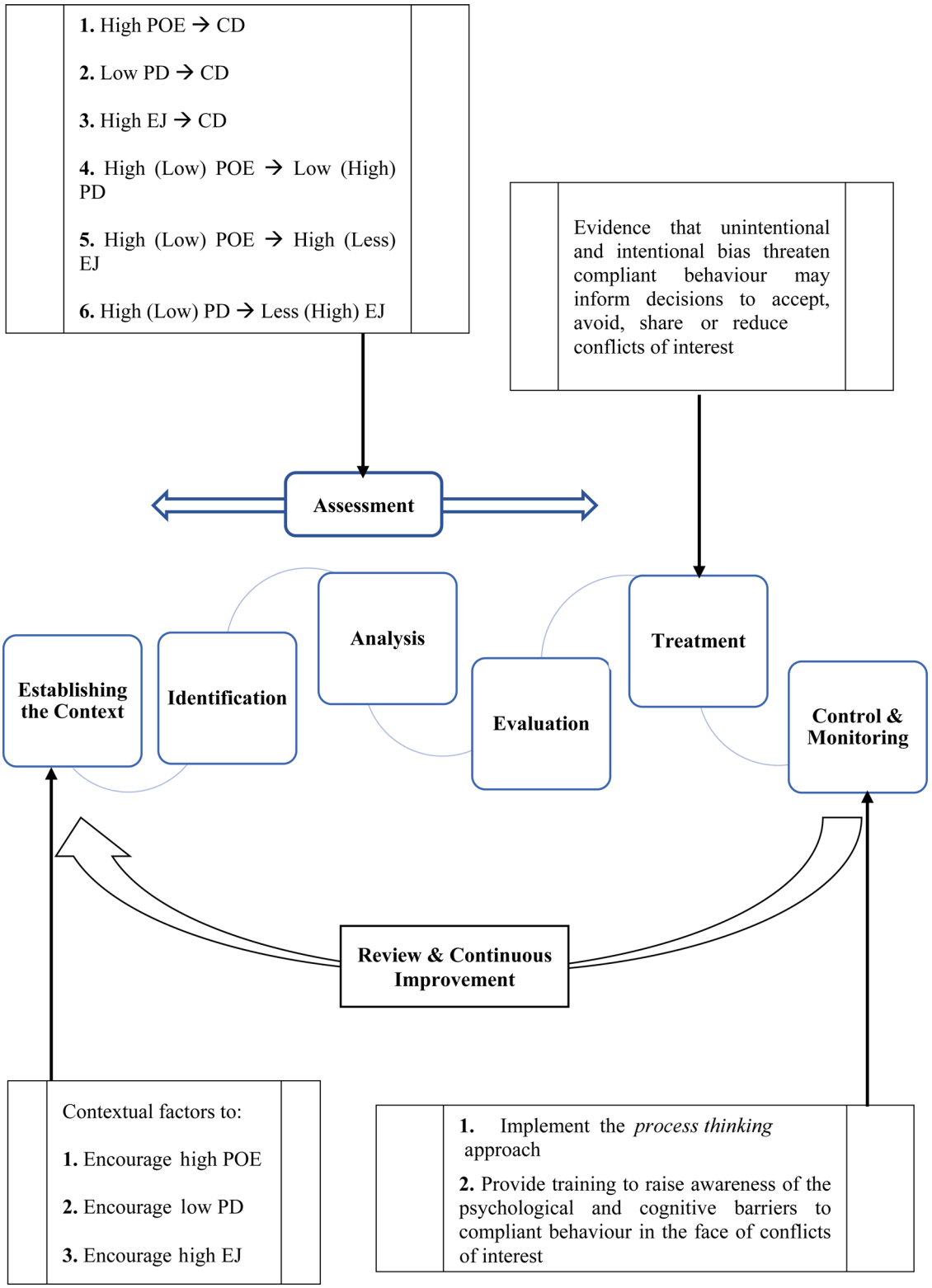

Figure 3. Behavioural framework for managing conflicts of interest [Colour figure can be viewed at wileyonlinelibrary.com]

include some checklists or measures for the levels of POE, PD, EJ and PMD of accounting professionals.

Similarly, a review of firms' codes of conduct (Clements, Neill and Stovall, 2012), ethics and compliance programmes (Williford and Small, 2013), organizational culture (di Florio, 2012; Nguyen, Nguyen and Sila, 2019) and reward systems (Green and Zimiles, 2013) can also be indicative of the probable level of accounting professionals' POE, PD and EJ in relation to the task at hand. Consultation units within the firm (Trotman and Wright and Wright, 2005) might also provide support in this regard.

3. Firms' decision to adopt a particular treatment of conflicts of interest may well be informed by the fact that decision-making in the face of conflicts of interest is largely prone to bias. Particularly, the findings show that bias threatens compliant behaviour and may well inform decisions to accept, avoid, share or reduce the risk of conflicts of interest. If interventions at the stages of establishing the context and assessing conflicts of interest suggest that the likelihood of compliant decision-making is high, firms might resort to accepting or reducing the risk of conflicts of interest. Similarly, if the level of accounting professionals' cognitive processes indicates that the likelihood of compliant decision-making behaviour is low, firms might want to avoid situations that give rise to conflicts of interest.

When implementing treatment for conflicts of interest, quality control reviews and inspections (Bedard *et al*., 2008) and consultation units (Trotman and Wright and Wright, 2005) might also be helpful.

4. The empirical results show that accounting professionals' low POE, high PD, low EJ and high PMD serve as cognitive barriers to compliant decision-making. Moreover, their perceptual bias plays a crucial role in the entire decision-making process. In this regard, the implementation of the *process thinking* approach (Rodgers and Gago, 2001, 2006) as one of the control measures seems promising. This approach suggests alerting professionals to the pathway they use to arrive at a decision and increasing their awareness of the obstacles and shortcuts they encounter during decision-making. Such awareness provides a constructive way for accounting professionals to formulate bias into a successful strategy.

Tenbrunsel (2005) suggests that effective management of conflicts of interest can be achieved if accounting professionals can recognize the cognitive barriers to compliant decision-making and then find ways to overcome these barriers. This could be achieved through various interventions, including the provision of training (di Florio, 2012; Williford and Small, 2013) to raise awareness about the psycho-cognitive barriers to compliant behaviour. The use of electronic decision aids (Dowling, 2009) might also help to reduce instances of biased decision-making.

5. Finally, the interventions introduced in the entire process of managing conflicts of interest require review and continuous improvement. In this regard, the potential benefits of accounting consultation units (Iyer and Rama, 2004; Kadous, Kennedy and Peecher, 2003), quality control reviews (Ayers and Kaplan, 2003), peer reviews (Bedard *et al*., 2008) and whistleblowing (Curtis, 2006) are well documented in the extant literature.

Due to their potential to strengthen accounting professionals' *independence in fact*, we expect that the adoption of the interventions proposed in this study's behavioural framework will facilitate the effective management of conflicts of interest. This, in turn, will contribute towards encouraging compliant decision-making behaviour in the professional accounting environment. Importantly, accounting practitioners may consider our behavioural interventions in conjunction with Kahneman *et al*.'s (2016) work on bringing discipline into judgement with the help of artificial intelligence or algorithms. One of the most radical ways of mitigating cognitive bias, noise and heuristics is to replace human judgement with formal rules known as algorithms. Kahneman *et al*. (2016) suggested the following five steps: (a) select six to eight variables that are distinctly related to the predicted outcomes; (b) compute the mean and standard deviation of each variable in the set; (c) compute a standard score for each variable in the set using the mean difference and the standard deviation; (d) compute a summary score for each case by using the average of each variable standard score; and (e) rank the sets from high to low summary scores and determine the appropriate actions for different scores. After the above five stages have been completed, the algorithm can compute a summary score for each new case and generate a decision.

Our proposed framework provides important suggestions for enhancing the effectiveness of professional training through the introduction of various complementary behavioural interventions. Evidence from our empirical findings can be used to reinforce professional bodies' codes of conduct and ethical training. For instance, professional ethics training should be extended to cover the wider cognitive aspects of professional judgements, such as managing noise in judgement and reducing cognitive bias and heuristics. Similarly, since different pathways in decision-making can yield useful results, the risk management efforts around conflicts of interest may well be improved. Further, our results reinforce the awareness that cognitive bias, noise and heuristics have the potential to create serious hidden costs for firms – therefore, thorough attention to mitigating these elements should be a matter of urgency. Finally, our behavioural framework may support firms that want to replace key strategic judgements with artificial intelligence or algorithms. We suggest various steps that can be used for the training and development of key strategic staff.

Conclusions, implications and future directions

Despite being heavily regulated, conflicts of interest in the professional accounting environment largely threaten accounting professionals' adoption of compliant decision-making behaviour. The main reasons for this, as suggested by the extant literature, are the focus on accounting professionals' *independence in appearance* rather than their *independence in fact* and the lack of consideration of their perceptual bias. Our work invites professional accounting bodies and regulators (e.g. the Financial Reporting Council, FRC and the International Federation of Accountants, IFAC) to pay attention to the importance of implementing the behavioural risk management approach to address conflicts of interest. Currently, the regulators' ethics provisions remain devoid of robust behavioural interventions that could be integrated within the risk management process. We propose incorporating behavioural interventions at the stages of establishing the context, assessing, treating, controlling and monitoring conflicts of interest. Following empirical examination of the process through which conflicts of interest threaten accounting professionals' adoption of compliant behaviour, this paper proposes a complementary behavioural framework for managing conflicts of interest.

The proposed behavioural framework highlights possible interventions aimed at increasing instances of compliant behaviour by encouraging the following amongst accounting professionals: (i) the expectation that the positive outcomes of compliant decision-making will outweigh the negative outcomes; (ii) the perception that making compliant decisions is less difficult than making alternative decisions; (iii) the formation of highly ethical judgements; and (iv) a low propensity to morally disengage. Since all the insights revealed by the empirical results are related to accounting professionals' state of mind and their objectivity, the framework developed on the basis of these insights will help to strengthen their *independence in fact*. Arguably, the enhancement of accounting professionals' *independence in fact* will lead to better management of conflicts of interest (Bazerman and Gino, 2012; Moore, Tanlu and Bazerman, 2010; Williford and Small, 2013). Interestingly, the proposed behavioural interventions apply to similar categories of conflict of interest – this is because the empirical results across different conflicts of interest, as considered in this study, lead to similar findings. The consideration of different categories provides strong empirical evidence for the observed relationships. As a result, our complementary behavioural risk management framework can add value for firms, institutions, governments and decision-makers.

Our work offers some more implications for professional accountants, executive directors, regulatory bodies, executive training and academic research. The results provide professional accountants and executive directors with insights into the possible cognitive bias and noise inherent in their judgement and thus deepen their understanding of the possibly devastating effects of bias on the quality of their opinions and decisions. Their failure to address conflicts of interest, and the subsequent cognitive bias and noise that permeate the fabric of strategic decision-making, may lead to another financial crisis. We propose a behavioural framework, conceptualized as a managerial decision-making support system that will guide them in avoiding such cognitive bias and noise. Regulatory bodies, such as the Financial Services Authority, FSA may be guided by our

framework to strengthen their professional ethical code of conduct. Our framework may also help in training future executives with regard to how to deal with the conflicts of interest and cognitive bias associated with judgements. Other professions (e.g. law, engineering, medicine and architecture) that face the ramifications of conflicts of interest may use our proposed framework and the resultant new knowledge to improve their ethics policies.

Future academic research may attempt to suggest further behavioural interventions for managing the risk of conflicts of interest. Further empirical investigation is required to develop more robust frameworks for addressing conflicts of interest in the professional accounting environment. Although our proposed framework is aimed at deepening understanding of the psychological and cognitive constructions of judgement, management research may focus on examining other constructs, such as the personal behavioural factors relevant to managerial decision-making support systems. Some limitations of this study should also be noted. Our work involves a set of situational and dispositional cognitive constructs and the study's findings should be considered in conjunction with the corpus of relevant literature on bias and heuristics (such as availability, representativeness, anchoring and adjustment) in the decision-making process. Moreover, our focus remains on the empirical evidence for behavioural aspects, with environmental aspects being considered mainly as part of the discussions. Further, we collected data from professionals with the Big Four accounting firms in the UK, which might have constrained the generalizability of our results. Finally, while our work builds on some literature from the corporate governance domain, we invite future research to make a more direct contribution to corporate governance of conflicts of interest in the professional accounting environment.

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