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Do perceptions of corruption influence personal income taxpayer reporting behaviour? Evidence from Indonesia

Arifin Rosid¹, Chris Evans² and Binh Tran-Nam³

Abstract

This paper addresses an identified gap in knowledge about whether, and how, perceptions of corruption may influence personal income taxpayer compliance behaviour. It examines how perceptions of five forms of corruption may impact upon intentional tax underreporting behaviour by adopting a sequential mixed-methods approach. Initially, a qualitative phase was carried out by conducting semi-structured in-depth interviews with nine participants (three taxpayers, three tax agents and three tax officers). The second—and core—phase of the research involved extensive data collection using a mixed-modes field survey conducted through 12 tax offices across four Indonesian regions. A total of 397 respondents were surveyed, comprising 196 self-employed and 201 employed taxpayers. Three principal findings have emerged from the data. First, as expected, the data from both the qualitative and quantitative phases suggest that high levels of perceived corruption were evident in Indonesia. Second, the quantitative findings clearly demonstrate that perceptions of corruption undermine taxpayers' intention to report actual income. Third, the findings ultimately suggest that high levels of perceived general corruption (that is, abuse of entrusted power by public officials for private gain), grand corruption (that is, corruption involving high-level public officials) and grand tax-corruption (that is, corruption involving high-level tax officials) were influential on intentional tax underreporting behaviour. The present empirical results support the notions that perceptions of corruption are important determinants and have a negative impact upon tax compliance behaviour. The results also imply that combating corruption, especially grand corruption, would have a beneficial effect on voluntary tax compliance in Indonesia.

Keywords: corruption, tax compliance, mixed-methods, personal income taxpayers

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1. INTRODUCTION

History indicates that tax compliance behaviour remains problematic around the globe (Chau and Leung, 2009; McKerchar and Evans, 2009; OECD, 2012a). Several strategies have been introduced and developed to address this issue (OECD, 2012a). Due mainly to inconsistent findings that have emerged from the economic deterrence approach (Andreoni, Erard & Feinstein, 1998; Kirchler et al., 2010), recent developments in compliance strategies have emphasised the importance of psychological and behavioural factors (Congdon Kling & Mullainathan, 2009; James, 2012; Kirchler, 2007; Kirchler, Kogler & Muehlbacher, 2014; Kornhauser, 2007; OECD, 2013; Reeson & Dunstall, 2009; Weber, Fookien & Herrmann, 2014; World Bank, 2015). Central to this is an increasing concern to obtain a deeper understanding of taxpayers' behavioural drivers rather than their non-compliance symptoms to effectively address non-compliance issues (Leviner, 2008; OECD, 2004).

Considering its multi-dimensionality, it is also necessary to examine tax compliance behaviour from cross-cultural perspectives (Kogler et al., 2013). Several empirical findings have indicated that cultural differences have a significant influence on tax compliance behaviour across countries (Cummings et al., 2009; Richardson, 2006). This is because revenue authorities in developing economies face quite different circumstances compared to their counterparts in developed economies due to widespread evasion, coercion, and corruption (McKerchar and Evans, 2009). Corruption creates inefficient tax systems and, as a result, lower levels of tax collection (Imam and Jacobs, 2007; Tanzi and Davoodi, 2000). To circumvent this problem, many authors recommend that developing countries should prioritise reducing the extent of corruption to improve tax compliance (Bird, 2003, 2015; Bird Martinez-Vazquez & Torgler, 2008; Flatters and Macleod, 1995; McKerchar and Evans, 2009; OECD, 2012b; Picur and Riahi-Belkaoui, 2006).

No country is immune from corruption issues (Shleifer & Vishny, 1993; Transparency International, 2015). Moreover, given its secretive nature, most of the indicators to assess corruption are based on subjective measurements (Campbell, 2013; León, Araña & León, 2012). This measurement is typically known as 'perceptions of corruption' (Campbell, 2013; Olken and Pande, 2012). Many authors argue that perceptions of corruption may have a negative impact upon the way taxpayers behave (Fjeldstad & Tungodden, 2003; Melgar, Rossi & Smith, 2010; Torgler, 2004; Torgler et al., 2008).

The principal aim of this study is to rigorously examine the impact of perceptions of corruption on tax compliance behaviour in Indonesia. The research in this study is focused upon personal income taxpayers (PITs) in Indonesia. These taxpayers are chosen because it is only at the level of the individual that perceptions of corruption and tax paying intentions are meaningful and can be fully addressed (Mendes, 2004).

Indonesia is chosen for this study for two major reasons. First, Indonesia has been classified as a major developing country (OECD, 2008; World Bank, 2013) with continual tax compliance issues (DGT, 2013, 2015; Francis, 2012; OECD, 2014). Partly due to corruption and poor governance, Bird and Zolt (2005) point out that the percentage of individual income tax revenue to GDP in Indonesia is the lowest among neighbouring countries, with 1.3 per cent compared to 1.9 per cent in Thailand, 2.1 per cent in Philippines, and 2.7 per cent in Malaysia.

Second, Indonesia appears to be among the more corrupt of the major countries in Asia–Pacific (Transparency International, 2015). Based on the Corruption Perceptions Index (CPI), Indonesia was ranked 88 out of 167 countries with a score of 36 in 2015.⁴ This is much lower compared to neighbouring countries such as Singapore (8), Australia (13), Malaysia (54) and Thailand (76) (Transparency International, 2015). Indonesia also has the highest percentage of respondents; 54 per cent felt that the level of corruption has increased over the past two years (Transparency International, 2013). Additionally, at least two studies by an Indonesian government entity—Corruption Eradication Commission (KPK)—indicate the pervasiveness of corruption in Indonesia with more than 94 per cent of its respondents conveying the view that corruption is common, has a negative impact on public finance, and erodes government revenue (KPK, 2010, 2011).

This study is motivated by three specific considerations. First, it is apparent that, corruption has, as an interesting phenomenon, attracted the attention of many researchers and scholars from different disciplines and various perspectives. However, attempts to specifically link it with intentional tax non-compliance behaviour are still in their infancy. Second, although much is currently known about the determinants of tax compliance, the mechanism by which perceptions of corruption influence tax compliance behaviour has not been clearly established. Research on the behavioural factors such as the impact of perceptions of corruption could reduce the necessity to make assumptions and improve the quality of the predictions. Third, to be able to scrutinise and to contribute to the body of existing knowledge, this study focuses on a single variable rather than several variables. As the literature suggests, limiting the scope of the study to a specific and well-defined variable may enhance its clarity.⁵

This paper intends to fill an identified gap in the knowledge of tax compliance behaviour and to further develop a deeper understanding as to whether, and how, perceptions of corruption influence taxpayers' compliance behaviour, particularly from a developing country's perspective. This study is crucial and relevant for developing economies particularly in relation to the 2030 United Nations' Agenda for Sustainable Development goals where strengthening domestic revenue mobilisation and improving domestic capacity for tax revenue collection are considered as a key driver of these goals (United Nations, 2015). The structure of this paper is outlined as follows. The literature, theoretical framework and research proposition are presented in Section 2. The research methods and the results are then elaborated in Sections 3 and 4 respectively. Finally, brief conclusions are discussed in Section 5.

⁴ The scores indicate the perceived level of corruption in the public sector on a 0-100 scale, where 0 means a country is perceived as very corrupt and 100 means it is perceived as very clean (Transparency International, 2015).

⁵ In a research process, this prescription refers to what social researchers generally term the 'isolation' phase (see, for example, Blunch, 2013; Gefen, Straub, & Boudreau., 2000). This prerequisite is crucial to be able to render a probability of causation between variables under study.

2. LITERATURE AND THEORETICAL FRAMEWORK

2.1 Corruption and perceptions of corruption

2.1.1 *Corruption*

Corruption is an ongoing global issue (Shleifer and Vishny, 1993; Transparency International, 2015) and is recognised as a major impediment in preventing economic development in many areas of the world (Blackburn, Bose & Haque, 2010; Wilhelm, 2002).

As a social phenomenon, the concept of corruption does not operate in a vacuum. Its meaning largely depends upon the specific social and political contexts in which it is applied (Brown, 2006).⁶ Social rules as well as moral views may also interrelate and vary significantly among different cultures and societies; as a result, an action could be a common courtesy in one society, but in a different context it could be considered as corrupt practice (Melgar, Rossi & Smith, 2010; Philp, 2006). Specifically, in the Indonesian context, apart from its political and economic situation, cultural aspects have indicated its significant influence in allowing corruption to flourish (Robertson-Snape, 1999).⁷ As there is no general consensus on the definition of corruption (UNDP, 2008), corruption can be defined in several ways (see, for example, Blackburn, Bose & Haque, 2010; Doig and Theobald, 1999; Shleifer and Vishny, 1993; Werlin, 1973). Most of these definitions, however, are emphasising governmental aspects of corruption by highlighting the abuse of public authority for personal gain.⁸

A popular way of classifying corruption is by using the scale of corruption (UNDP, 2008). In this sense, corruption is classified in the sector where it occurs or the amounts of money involved. For example, similar to Doig and Theobald (1999), UNDP (2008) also distinguishes two types of corruption: grand corruption and petty corruption. Grand corruption, on the one hand, represents the misuse of public power by high-level public officials such as ministers or senior staff for personal pecuniary gain. On the other hand, petty corruption refers to the extortion of small payments by low-level public officials in daily interaction to smooth transactions, and accordingly it is often called 'grease' money.⁹

2.1.2 *Perceptions of corruption*

Due to the secretive nature of corruption, most indicators used to assess corruption are based on subjective measurements (Léon Araña & León., 2012), which are generally

⁶ Accordingly, Hillman (2004, p. 1067) maintains "the people who can best describe corruption are those themselves engaged in corruption."

⁷ In this respect, for example, Donchev and Ujhelyi (2014) have suggested that to appropriately assess corruption, it should be on a country level basis given that each country has diverse characteristics.

⁸ It is worth emphasising that the adopted definitions of corruption in this study, for the sake of clarity, only refer to the involvement of public officials. It is crucial to distinguish since, in general terms, corruption may include the private sector (UNDP, 2008). For instance, corruption can be defined as "dishonest or illegal behaviour involving a person in a position of power, for example, accepting money for doing something illegal or immoral." See, <<http://dictionary.cambridge.org/dictionary/business-english/corruption>>, retrieved 2 October 2014. In other words, the focus of this study is "government corruption" (Shleifer and Vishny, 1993, p. 599).

⁹ Although different terms may be adopted, this classification is also used by other authors. For example, Mishler and Rose (2008) adopt the terms 'civic' and 'street-level' corruption.

known as ‘perception of corruption’ indicators (Campbell, 2013; Olken and Pande, 2012). The use of perception-based indicators to assess corruption can be potentially problematic. First, although there is a positive relationship between reported corruption perceptions and objective measurements of corruption, these two variables cannot be interchangeably used to measure corruption (Olken, 2009). Consequently, examining perceptions of corruption to measure the extent of corruption may lead to misleading conclusions (Olken, 2009). Second, the elusive phenomena of perception corruption indices have a tendency to mislead the readers into believing they are ‘actual’ levels of corruption (Urta, 2007). Third, people are susceptible to being systematically biased in reporting corruption, either because their personal beliefs are biased or because the way individuals report corruption is biased (Kuncoro, 2006; Olken, 2009). Fourth, apart from its advantage of good coverage—it is obviously much easier and simpler to ask about people’s belief of corruption than to actually scrutinise it directly—perception-based measures may not precisely measure corruption (Olken and Pande, 2012).¹⁰ Fifth, as the perception-based data only capture opinion about the prevalence of corruption but do not gauge corruption itself (Treisman, 2007), the perception-based measurement is not accurate and tends to exaggerate (Miller, 2006). Thus, using perception-based indices as a measure of actual corruption may be more problematic than suggested by the current literature (Donchev and Ujhelyi, 2014).

For these reasons, high levels of perceived corruption can be destructive both at the social and at individual levels. At the social level, it may generate a cultural tradition that increases the pervasiveness of corruption. Mishler and Rose (2008) propose the so-called ‘echo chamber’ problem of perceptions of corruption. They highlight how the perceptions of national corruption linger as they are shaped by media reports or historical stereotypes and then captured by, for example, the CPI as ‘recorded facts’. These data then circulate, reinforcing the prevailing level of perceptions and generating a vicious circle maintaining its reliability without evaluating its validity. Supporting this, for instance, Dong, Dulleck & Torgler (2012) perform micro and macro data analysis on international panel data set of European Values Survey (EVS), World Value Survey (WVS), and the International Country Risk Guide (ICRG) data to understand whether the perception of corruption is contagious.¹¹ The empirical findings sharply suggest that the perceived activities of peers and other individuals influence the respondents’ willingness to engage in corruption—a phenomenon termed as ‘reciprocity’. In the corruption context, according to Dong, Dulleck & Torgler (2012, p. 611), reciprocity means ‘if corruption within a society is very prevalent, citizens feel less guilt when engaging in extra-legal activities, and are likely to act accordingly’. The findings from macro level panel data indicate that the prevailing level of perceived corruption is positively influenced by the past level of perceived corruption.

At the individual level, high levels of perceived corruption may have a downward spiral effect on individuals. Mishler and Rose (2008) outline that inflated corruption perceptions may have the negative effect of undermining individuals’ morality by

¹⁰ In the Indonesian context, for example, Olken and Pande (2012) assert that the discrepancy between actual and perceived corruption in the Indonesian post-Soeharto era can be induced by a much freer press which is able to make more corruption cases publicly accessible.

¹¹ The study includes 30 countries and 34 countries for the EVS and the WVS respectively, whereas the ICRG data covers 18 years (1986 to 2003).

unconsciously encouraging people to accept that engaging in corruption is normal and socially acceptable in a national context. In this regard, Ross, Greene & House. (1977, p. 279) argue that 'in a sense, every social observer is an intuitive psychologist who is forced by everyday experience to judge the causes and implications of behaviour'. It is common that to decide on appropriate behaviour in a given situation, individuals attempt to seek relevant information as to how similar others have behaved or are behaving, to be able to evaluate the appropriateness of their own beliefs, attitudes, and behaviour—a notion referred to as 'social validation' (Cialdini, 1989).

2.2 Tax compliance behaviour

While there is no consensus of what precisely is meant by compliant behaviour (Devos, 2014; McKerchar, 2003; Weber, Fookien & Herrmann, 2014), definitions of tax compliance can be broadly categorised into two approaches: conceptual and operational. The conceptual approach tends to emphasise the taxpayers' willingness to comply (see, for example, James & Alley, 2004; Kirchler, 2007; Weber, Fookien & Herrmann, 2014), whereas the operational approach focuses on the administrative fulfilment of particular tax obligations (see, for example, Alm, 1991; IRS, 2009; Jackson & Milliron, 1986; OECD, 2004). For practical purposes, the operational approach seems to offer an advantage. This approach generally evaluates whether taxpayers register in the system, file timely tax returns, make accurate and complete reports and pay the tax liability on time. Thus, based on this approach, taxpayers' compliance levels can be easily measured by simply evaluating whether all aspects of their tax requirements have been fulfilled.¹²

It has been argued that it is more appropriate to view taxpayers' behaviour toward the tax system as a continuous spectrum rather than a binary outcome (compliant and non-compliant) (Tran-Nam, 2003). It is also clear that tax compliance behaviour is a dynamic concept in two different senses. At the micro level, the tax compliance behaviour of a particular personal taxpayer may change over his/her lifetime. At the macro level, tax compliance exists not only in a dynamic environment but also involves differing types of taxpayers, in turn producing various types of compliance outcome (McKerchar and Evans, 2009).¹³

While strictly and legally speaking tax compliance behaviour is an *ex-post* definition,¹⁴ the diversity of possible outcomes of compliance behaviour has been recognised by several authors. For instance, the OECD (2004), based on their motivational postures, suggested that taxpayers can be sorted into four types: the disengaged, the resisters, the triers, and the supporters.¹⁵ Similar to McKerchar (2003), Langham, Paulsen & Hartel (2012) observe four major types of compliance behaviour: (i) deliberately or intentionally compliant; (ii) accidentally or

¹² For instance, data released by the Canadian Revenue Agency suggests that while tax compliance at the most basic level (that is, filing and lodging on time) is somewhat satisfactory, however, the more substantive criteria of tax compliance—determined by the share of taxpayers categorised at 'crucial risk of non-compliance'—shows more issues (Trivedi, Shehata & Mestelman, 2005).

¹³ Consequently, measuring comprehensively the diversity of taxpayer compliance behaviour can be complicated and may be impractical (OECD, 2004).

¹⁴ That is 'actual' tax compliance behaviour can only be gauged once a thorough audit is performed—by the tax authority—and the outcome is obtained.

¹⁵ It should be noted, however, that it is not a permanent classification. An individual taxpayer tends to behave on a contextual basis and therefore is capable of embracing any of the described postures in a given context (OECD, 2004).

unintentionally non-compliant; (iii) accidentally or unintentionally compliant and (iv) deliberately or intentionally non-compliant.

It is apparent that two related aspects need to be taken into account in examining tax compliance behaviour: intention and outcome (see, for example, Antonides and Robben, 1995; Bird, 2015; Long and Swingen, 1991; McKerchar, 2003; Langham, Paulsen & Hartel, 2012; Tran-Nam, 2003; World Bank, 2015).¹⁶ While the outcomes of compliance behaviour vary, intention can be reasonably considered as the accurate proxy for the performed behaviour (Antonides & Robben, 1995; Lewis, 1982; OECD, 2010).

Taken together, to obtain a greater clarity on the definitional issues and to maintain the specificity of the results, this study sets out two conceptual boundaries. First, tax compliance is defined as 'taxpayers' willingness to accurately report income in accordance with the prevailing tax law' (Kirchler, 2007; McKerchar and Evans, 2009; OECD, 2004).¹⁷ Second, this study focuses on either 'intentional or deliberate' compliance or non-compliance behaviour. Accordingly, tax compliance behaviour in this study refers to the self-reported behaviour of the taxpayers' intended income reporting behaviour.¹⁸

2.3 Perceptions of corruption and tax compliance behaviour: How do they relate?

Perceptions of corruption and tax compliance behaviour are distinct and separate problems, but they can be easily intertwined. First, in highly corrupt countries reduced tax revenue that reaches government may be spent in unproductive or inappropriate ways before achieving designated public spending purposes and as a result, public finance may fail to fulfil its objectives (Hillman, 2004). This situation may erode taxpayers' willingness to contribute their fair share of tax (Gangl et al., 2015; Torgler et al., 2008). Moreover, perceptions of corruption may cultivate a culture of distrust among stakeholders towards related institutions (Melgar, Rossi & Smith, 2010), strengthening a damaging public perception that causes taxpayers to disengage from any reciprocal relationship with the government (Fjeldstad & Tungodden, 2003). As a higher level of perception of corruption crowds out the degree of tax morale,¹⁹ it may then reduce the moral cost of evading tax and further encourage taxpayers to behave opportunistically (Torgler, 2004).

Additionally, from a fiscal exchange perspective, it can also be argued that corruption may demotivate compliance as the taxpayers might perceive that, due to corruption, the presence (or benefit) of government expenditure they receive will be reduced (Alm, Jackson & Mckee, 1992; Andreoni, Erard & Feinstein, 1998). Consequently,

¹⁶ For instance, according to Bird (2015, p. 31), "countries exhibit a wide variety of tax compliance levels, reflecting not only the effectiveness of their tax administrations but also taxpayer attitudes toward taxation and toward government in general. Attitudes affect intentions and intentions affect behaviour."

¹⁷ It is worth noting that this definition deliberately excludes the 'registration', 'filing', and 'payment' criteria.

¹⁸ Academically speaking, it is hardly possible to identify taxpayers' behavioural outcomes in the case of 'unintentionally compliant' and 'unintentionally non-compliant' as the comprehensive assessment regarding the actual taxpayers' compliance behaviour is beyond the scope of this study. See also fn. 14.

¹⁹ Tax morale can be loosely described as internal motivation to comply with tax law (Kornhauser, 2007)

perceptions of corruption may have a worse effect than the corruption itself (Melgar, Rossi & Smith, 2010).

Second, perceptions of corruption may influence the way taxpayers comply with their tax obligations. Individuals have an inclination to perceive corruption as ‘all of a piece’ where people tend to fail to recognise the difference between street-level corruption and its opposed type, political or civic institution corruption (Mishler & Rose; 2008). Also, according to Mishler and Rose (2008), individuals’ perceived corruption about one institution is inherently influenced by their perception of other institutions: the ‘echo chamber’ effect. Since taxpayers have limited capabilities in processing such information, they are not fully informed, tend to use heuristics, and are therefore vulnerable to biases in their tax decisions (Marriott, 2009; OECD, 2010; Reeson & Dunstall, 2009).

2.4 Behavioural intention model

An appropriate theoretical lens is needed to examine the possibility of a causal relationship between perceptions of corruption and the way taxpayers behave. In this regard, it is concluded that one established behavioural intention model, particularly capable of explaining and identifying how psychological and behavioural factors can be converted into certain behavioural outcomes, is the Theory of Planned Behaviour (TPB). Despite its weaknesses in certain contexts, this theory has considerable popularity among behavioural researchers and received the highest score of scientific impact among US and Canadian social scientists (Nosek et al., 2010).

In social psychology, TPB is a theory that correlates beliefs and behaviours in an attempt to understand and predict human behaviour. The theory conceptualises that attitude toward behaviour, subjective norms and perceived behavioural control lead to the formation of behavioural intention, in which behavioural intention enables the prediction of actual behaviour.

The justification for adopting the TPB is twofold. First, by definition, perception is closely related to belief.²⁰ In this context, belief in the TPB model is defined as ‘subjective probabilities’ (Fishbein & Ajzen, 2010). The TPB deals with three beliefs. First, behavioural beliefs represent the subjective probabilities that conducting certain behaviour produces a particular outcome. Second, normative beliefs consist of injunctive and descriptive normative beliefs. While injunctive normative beliefs are concerned with the subjective probabilities that certain group of referents encourage or discourage performance of a given behaviour, descriptive normative beliefs refer to subjective probabilities that important referents are doing or not doing the behaviour. Third, the subjective probabilities that certain factors can support or prevent the performance of a behaviour are elements of control beliefs (Fishbein & Ajzen, 2010). Once beliefs associated with a certain behaviour have been developed, these beliefs then provide the basis for the attitudes, subjective norms, and perceived control which in turn lead to the formation of intention and a given behaviour (Fishbein & Ajzen, 2010).

²⁰ Perception can be referred to as ‘a belief or opinion, often held by many people and based on how things seem’. See <<http://dictionary.cambridge.org/dictionary/british/perception>>, retrieved 16 October 2014. As is true for the definition of corruption, the definition of perception of corruption also depends on social and cultural factors (Melgar, Rossie & Smith, 2010).

Second, in the TPB framework, people are not assumed to be rational in their behaviour (Fishbein & Ajzen, 2010).²¹ Instead, the TPB accepts that people's behaviour follows reasonably from their salient beliefs. This view is supported by several authors (see, for example, Cialdini, 1989; Eveland & Glynn, 2008; World Bank, 2015).²² Given that beliefs are often based on information provided by others and on unreliable inference processes, these beliefs (behavioural, normative, and control beliefs) naturally need not be valid or veridical. As a result, they can be inaccurate, unreliable, biased, or may represent other irrational processes (Fishbein & Ajzen, 2010). This holds true for the perceptions of corruption, as many authors maintain that people are very susceptible to be biased in dealing with perceived levels of corruption (see, for example, Donchev and Ujhelyi, 2014; Kuncoro, 2006; Miller, 2006; Olken, 2009; Olken and Pande, 2012; Urrea, 2007).

Referring to the relationship between background factors and beliefs, the formation of beliefs and the possibility of behavioural and psychological biases in the decision making process, it is reasonable to hypothesise that the perceptions of corruption might be capable of influencing the taxpayers' salient beliefs of both their attitudes toward behaviour and their subjective norms, but not their control beliefs to perform tax compliance behaviour. The rationale for this is, first, given that attitudes towards behaviour can be generally defined as an individual's psychological evaluation, that is, some degree of favourableness or unfavourableness of performing behaviour (Fishbein & Ajzen, 2010), the perceived corruption may crowd out the degree of tax morale, undermine the moral cost of evading tax, encourage taxpayer's to behave opportunistically (Torgler, 2004), erode taxpayers' willingness to contribute their fair share of tax (Torgler et al., 2008), pay less taxes (Kaufmann, Kraay & Mastruzzi, 2007), and eventually may change the taxpayers' latent disposition to perform compliance behaviour (Cialdini, 1989).

Second, provided that subjective norms generally deal with the perceived level of social pressure to execute (or not) the targeted behaviour (Fishbein & Ajzen, 2010), the perceptions of corruption might cultivate a culture of distrust (Melgar, Rossi & Smith, 2010), undermine citizens' morality by subtly encouraging people to accept the social reality that engaging in corruption is normal and acceptable in a national context (Mishler & Rose, 2008) and consequently may shift the taxpayers' overall perceived social pressure regarding tax compliance behaviour (Cialdini, 1989).²³ Additionally, perceptions of tax corruption and tax non-compliance behaviour can be considered as complementary activities. That is, while corruption may induce more taxpayers to underreport taxes, more underreported taxes create more opportunities for bribery of tax officials (Alm, Martinez-Vazquez & McClellan, 2014; Çule & Fulton, 2009). Thus, such perception may lead taxpayers to believe that they can negotiate

²¹ It is worth distinguishing between rational and rationality in this context. While choices are rational, rationality is considered as subjective and influenced by cultural values (Lewis, 1982).

²² For instance, supporting the view of Cialdini (1989) who argues that individuals have a tendency to adopt beliefs, attitudes, and behaviour of others—particularly those of similar others—as a guidance to evaluate their own beliefs, attitudes, and behaviour; Eveland & Glynn (2008, p. 159) maintain that '...perceptions of the beliefs, opinions, or behaviour of others as central determinants of human behaviour'.

²³ In this respect, according to Lederman (2003), perceiving that other taxpayers do not comply would undermine one's own tendency to comply. Noticing others' non-compliance might change someone's moral standard, and as a result someone might feel less guilty to commit non-compliance. Similarly, Wenzel (2005) argues that conforming misperceived social norms, namely, self-other discrepancy regarding the extent of tax evasion, could lead taxpayers to be less compliant.

with tax administrators so that taxpayers could end up paying less taxes than they would otherwise.

On the other hand, in terms of control beliefs, given that a perceived behaviour control (PBC) construct was added in the TPB to explain behaviours that are beyond complete volitional control, it can be intuitively assumed that perceptions of corruption are not related to taxpayers' salient beliefs on the perceived level of ease or difficulty to perform their behaviour.

2.5 Research problem and propositions

The research problem of this study is: do perceptions of corruption affect intentional non-compliance behaviour of personal income taxpayers in Indonesia? To elaborate upon this problem, and based on the theoretical framework and extant literature, the following research propositions are considered and illustrated in Figure 1.

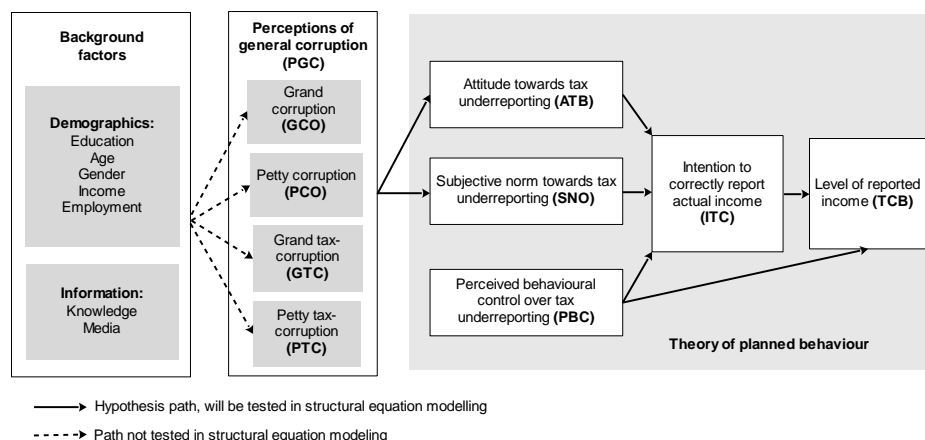
First, taxpayers' perceived levels of corruption are influenced by their background factors.²⁴ There are five different forms of perception of corruption considered in this study. These are:

1. Perception of general corruption (PGC): The abuse of entrusted power by public officials for private gain
2. Perception of grand corruption (GCO): The misuse of public power by high-level public officials for private gain which often involves large sums of money
3. Perception of petty corruption (PCO): The extortion of small payments by low-level public officials in daily interactions with the public as 'grease money'
4. Perception of grand tax-corruption (GTC): The misuse of public power by high-level tax officials for personal pecuniary gains which often involves large illegal payment in dealing with certain tax cases
5. Perception of petty tax-corruption (PTC): The misuse of public power by low-level tax officials for personal pecuniary gains or the extortion of small payments by operational staff in daily interaction with taxpayers as 'grease money'.

Second, the extent of perceived levels of corruption will negatively influence taxpayers' attitudes and their subjective norms towards reporting actual income. Coupled with the opportunity for non-compliance, negative attitudes and subjective norms will lead to the formation of behavioural intentions to underreport income. Further, the level of reported income can be predicted from taxpayers' behavioural intentions to report actual income. Finally, it is hypothesised that perceptions of corruption have a negative effect on the level of reported income.

²⁴ This proposition, due to space considerations, is not considered further in this paper.

Figure 1: Conceptual model of the study



To clearly comprehend the scope of the study, the research propositions are presented as a set of alternative and null (H_0) hypotheses in Table 1 as follows:

Table 1: Research hypotheses

Hypothesis	Prediction
Hypothesis 1	H1 _a : Perceptions of corruption positively influence taxpayers' attitudes towards tax underreporting. H1 ₀ : Perceptions of corruption do not influence taxpayers' attitudes towards tax underreporting.
Hypothesis 2	H2 _a : Perceptions of corruption positively influence taxpayers' subjective norms towards tax underreporting. H2 ₀ : Perceptions of corruption do not influence taxpayers' subjective norms towards tax underreporting.
Hypothesis 3	H3 _a : Attitudes towards tax underreporting negatively influence taxpayers' intention to correctly report actual income. H3 ₀ : Attitudes towards tax underreporting do not influence taxpayers' intention to correctly report actual income.
Hypothesis 4	H4 _a : Subjective norms towards tax underreporting negatively influence taxpayers' intention to correctly report actual income. H4 ₀ : Subjective norms towards tax underreporting do not influence taxpayers' intention to correctly report actual income.
Hypothesis 5	H5 _a : Perceived behavioural control over tax underreporting negatively influence taxpayers' intention to correctly report actual income. H5 ₀ : Perceived behavioural control over tax underreporting do not influence taxpayers' intention to correctly report actual income.
Hypothesis 6	H6 _a : Intentions to correctly report actual income positively influence the level of reported income. H6 ₀ : Intentions to correctly report actual income do not influence the level of reported income.
Hypothesis 7	H7 _a : Perceived behavioural control over tax underreporting negatively influence taxpayers' level of reported income. H7 ₀ : Perceived behavioural control over tax underreporting do not influence taxpayers' level of reported income.
Hypothesis 8	H8 _a : Perceptions of corruption have a negative effect on taxpayers' level of reported income. H8 ₀ : Perceptions of corruption do not have a negative effect on taxpayers' level of reported income.

3. RESEARCH METHODS—POPULATION AND DATA COLLECTION

This study employs both the qualitative and quantitative paradigms in a sequential priority model of ‘*qual*→*QUANT*’ to enhance research method capabilities and to improve the quality of the research findings.²⁵ In the first phase, in-depth interviews are used to clarify, modify, and develop more robust observed independent and dependent variables in the design of the questionnaires from theoretical perspectives. This is then followed by an extensive survey to explain the structural patterns, through numeric measurement, of relationships among the variables of perceptions of corruption and the prescribed TPB constructs through quantitative analysis. A high-risk human research ethics approval, covering the research design for both the qualitative and the quantitative investigations, was granted prior to the research being conducted.

3.1 Phase one: In-depth interviews

3.1.1 Participants

There were nine participants in the qualitative phase: three taxpayers, three tax officers and three tax agents. They resided in two big cities of East Java province (Malang and Surabaya) and ranged in age from 36 to 54. Both the tax agents and tax officers have at least eight years of working experience while the taxpayers have at least five years of working experience.

3.1.2 Procedures

The participants were interviewed in the period from January to February 2015 using 20 semi-structured questions. The interviews were open-ended and interviewees were encouraged to provide their own thoughts and opinions on the questions. For data analysis, the interview data was transcribed into a verbatim format. Verbatim responses were then inputted into the CDC EZ-Text 4.0 software for further analysis. A deductive and theoretical thematic analysis procedure described by Braun and Clarke (2006) was used for qualitative data analysis.

3.2 Phase two: Survey instrument

3.2.1 Sample and survey coverage

Based on a careful estimation, it was concluded that the accessible population of this study was around 360,000 respondents.²⁶ Moreover, as this study adopted structural equation modelling (SEM) (see below), it was considered that the minimum samples for this study would be 384. The samples share an equal portion of self-employed and employed PITs.²⁷

²⁵ This symbol means that qualitative method is employed as a supplementary method whereas quantitative method is adopted as a core method (Morgan, 2014). In other words, the priority method in this study is the quantitative method preceded by the preliminary contribution of the qualitative method.

²⁶ This is an indicative number of the accessible population of each tax office, estimated by multiplying the number of registered PITs who were obliged to lodge annual tax returns as of December 2012 with the rate of filing ratio of each tax office under study.

²⁷ In particular, the surveyed self-employed PITs in this study are categorised as small and medium enterprises (SME) with annual sales turnover of operating business less than IDR 4.8 billion

The survey was conducted with PITs who were visiting any one of 12 tax offices across four Indonesian regions (Denpasar, Malang, Surabaya and Yogyakarta). The main purpose of their visit to the tax office was to submit personal tax returns. The survey was commenced in mid-March 2015 and ended in June 2015. Most of the tax offices (75 per cent) where the surveys took place were located on Java Island. The justification for this was two-fold. First, in terms of economic activity, despite its small size, Java Island accounts for almost 58 per cent of Indonesian GDP (BPS, 2013).²⁸ Second, the majority of income taxpayers (60 per cent) are administered by 189 tax offices (57 per cent of the total number of tax offices in Indonesia) in this area.

3.2.2 Procedures

The survey questionnaire employed 72 questions in total. The respondents were asked to indicate their beliefs, values, attitudes, intentions and behaviour with regard to ten constructs using a 7-point rating scale of interval measurement by using 56 reflective indicators. The employed constructs and the number of its indicators are as follows: (i) perceptions of general corruption (PGC) = 5; (ii) perceptions of grand corruption (GCO) = 5; (iii) perceptions of petty corruption (PCO) = 5; (iv) perceptions of grand tax-corruption (GTC) = 5; (v) perceptions of petty tax-corruption (PTC) = 5; (vi) attitude towards tax underreporting (ATB) = 9; (vii) subjective norm towards tax underreporting (SNO) = 8; (viii) perceived behavioural control over tax underreporting (PBC) = 8; (ix) intention to correctly report actual income (ITC) = 4; and (x) level of reported income (TCB) = 2 indicators.

Prior to the survey conduct, two-stage pilot tests were undertaken to ensure that the questionnaire was accurate and reliable for data collection: declared and undeclared. In the declared phase, 29 participants were explicitly asked to help in improving the questionnaire by providing comments or feedback whilst completing the questionnaire. Based on the written feedback from the declared stage, the questionnaire was then fine-tuned and the undeclared stage (that is, the respondents were not requested to provide comments or feedback about the questionnaire) was carried out with 30 participants. The result from the second pilot test indicated that the questionnaire had the potential to produce valid and reliable data in the actual survey.

Due to the sensitivity of the research topic, the survey was performed by research intermediaries (trained research assistants recruited from local universities). The use of research intermediaries was considered crucial to assure the potential respondents that the study was an academic project as well as to indicate that the study had no link

(equivalent to about AUD 466 926 as at 19 March 2014). Bookkeeping is not compulsory for them. Based on Government Regulation Number 46 Year 2013, they are taxed by way of a one per cent presumptive final income tax, which applies to their annual gross sales turnover. This new policy has an effective date of 1 July 2013. It is also worth noting that the potential role of tax agents upon the compliance behaviour of PIT in Indonesia in this study is assumed to be negligible. For instance, as of 31 July 2013, the number of registered tax agents in Indonesia is 1 883 tax agents and the number of taxpayers who used tax agents to deal with their tax affairs is only 5 410 taxpayers. Most of them were corporate taxpayers (see, <<http://www.pajak.go.id/node/8289?lang=en>>, accessed 9 November 2014). It is possible however that the representation of tax agents among taxpayers is underestimated. The plausible explanation is that many income taxpayers who actually used tax agents to handle their tax matters may not officially declare their engagement in their tax returns.

²⁸ With land area less than 7 per cent of the total land area, Java Island is inhabited by more than 53 per cent of the total population (BPS, 2013).

with the Indonesian tax authority. By doing so, it was considered that the extent of social desirability bias in responding to the questionnaire could be minimised.

The survey was conducted by using mixed-modes: a combination of face-to-face interviews and self-completion survey. Face-to-face interviews were initially used by the research assistants to recruit respondents while self-completion surveys were employed to capture respondents' answers. There were two justifications for adopting this mixed-modes approach. First, face-to-face interviews have had a good reputation for gaining cooperation (de Vaus, 2014). Second, reflecting on the sensitive nature of the study, self-completion questionnaire surveys were considered as the most suitable mode to particularly capture confidential responses.

Structural equation modeling (SEM) was used for inferential quantitative data analysis by using IBM SPSS Statistics and IBM SPSS Amos. Commonly used to assess dependence relationships among latent variables simultaneously (Hair et al., 2010),²⁹ SEM is defined as 'a technique to specify, estimate, and evaluate models of linear relationships among a set of observed variables in terms of a generally smaller number of unobserved variables' (Shah & Goldstein, 2006). Accordingly, this technique is considered as the most appropriate method to analyse the survey data in this study.

4. RESULTS

4.1 Results of phase one: In-depth interviews

The length of interviews ranged from 31 to 76 minutes. The qualitative data analysis was performed in four stages. First, based on a review of the literature on perceptions of corruption and the TPB, seven themes were established and coded: (i) taxpayers' general information (TGI); (ii) perceptions of corruption (PoC); (iii) attitude towards behaviour (ATB); (iv) subjective norms (SNO); (v) perceived behavioural control (PBC); (vi) intention to comply (ITC); and (vii) tax compliance behaviour (TCB).

Second, each of the themes, except PBC and ITC, was then categorised into relevant sub-themes, resulting in 15 sub-themes. Each sub-theme was coded as a 'child' of its original code in the software and each had a bipolar scale (for example, low-high, negative-positive, harmful-beneficial). For instance, a sub-theme 'experiential attitude' (coded as 'ExA', a child code of ATB) had two bipolar codes: negative experiential attitude (coded as 'ExAnega') and positive experiential attitude (coded as 'ExAposi'). A total of 34 pre-existing codes were established.

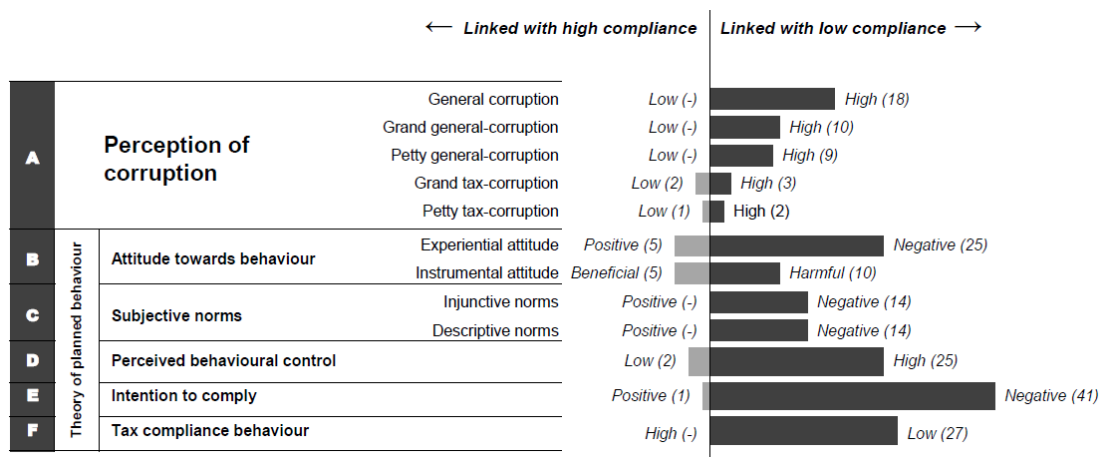
Third, the transcribed data was read carefully to identify meaningful patterns of texts relevant to the pre-existing codes. A special feature of the CDC EZ-Text 4.0 program was used in the data coding process to assign the identified text passages to relevant pre-existing codes.

Finally, the data was systematically reviewed to ensure that the meaningful text passages were fully identified and the assigned codes were appropriately entered. The deductive thematic analysis resulted in 28 categories being identified, which covered 82 per cent of available pre-existing codes, leaving six pre-existing codes unused. A

²⁹ According to Hair et al. (2010, p. 612), despite its practical use, traditional multivariate techniques such as multiple regression, factor analysis, multivariate analysis of variance and discriminant analysis share one common limitation: it 'can examine only a single relationship at a time'.

total of 272 assigned codes were identified from the transcribed interview data. To provide an easier description of the findings, a representation of the assigned codes was converted into clustered bar charts and depicted in Figure 2.

Figure 2: Diagrammatic interpretation of qualitative findings



Note: This figure shows the number of identified pre-existing codes for each category in a double-sided bar. The length of the bar proportionally indicates the number of identified codes. For instance, as shown at the top of the chart, there was no participant who had opined that general corruption was 'low' in Indonesia. In contrast, 18 codes were found indicating that general corruption was 'high'.

Several meaningful patterns emerged from the graph. Using the TPB as an analytical tool, the patterns were intuitively easy to interpret. First, the qualitative data suggests that PITs were perceived by participants as having a high likelihood not to comply with the tax law, indicated by the extent of negative intention to comply score. In this sense, the TPB posits that 'intention to comply' has three antecedents: (i) attitudes towards behaviour; (ii) subjective norms; and (iii) perceived behavioural control (Fishbein & Ajzen, 2010). Generally speaking, people will comply when the attitudes are positive and the subjective norms are to conform (Ajzen, 1991). In this sense, the data indicate the opposite. The participants were of the opinion that complying with the tax law was associated with 'bad' feeling and 'disadvantages' which represent overall negative attitudes toward compliance behaviour. The overall negative value on subjective norms also indicated that the perceived level of social pressures to comply with the tax law was completely absent, which in turn might implicitly encourage PITs to become non-compliant. The data also revealed that PITs were generally assumed to have a considerable control over whether or not they want to intentionally engage in tax evasion. Taken together, it seems reasonable to associate these three conditions with the extent of perceived likelihood not to comply with tax.

Second, taxpayers' compliance behaviour can be approached by its closest behavioural proxy. A wealth of literature has also emphasised the significance of taxpayers' behavioural intentions in explaining and predicting their behavioural outcomes (Fishbein & Ajzen, 2010; Langham, Paulsen & Hartel, 2012; Lewis, 1982; McKerchar, 2003). In this sense, the data suggests that a hypothetical link comes to exist between negative intention to comply and low levels of compliance behaviour. It should be noted, however, that while negative behavioural intention enables the prediction of actual non-compliance behaviour, the extent to which actual non-compliance behaviour can be performed depends on taxpayers' volitional control to perform the targeted behaviour (Fishbein & Ajzen, 2010).

Third, the data also demonstrate a hypothetical correlation between the high level of perceived corruption and low levels of compliance behaviour. However, little was known from the data about how this connection was linked. What the data might suggest is that high levels of perceived corruption could be related to both situational and motivational factors. The justifications for these links were two-fold. First, the situational factor was indicated by the extent of negative psychological evaluation towards a high level of perceived corruption and complying with tax.³⁰ Thus, corruption, either perceived or real, might lead to a negative psychological evaluation towards the completeness and the accuracy of information declared in the annual income tax return of PITs. Second, the motivational factor could be related to a lack of perceived social pressure among PITs to fully comply with the tax law, particularly in providing complete and accurate information declared in the annual income tax returns. Overall negative values on both injunctive and descriptive norms among the participants indicated that the beliefs of certain groups of referents discourage PITs from complying with the tax law and beliefs that PITs' important referents are not fully reporting their income were evident.

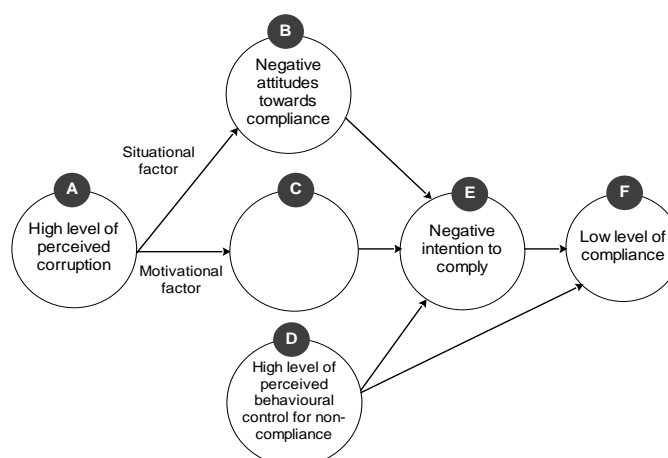
Taken together, it was possible to propose a hypothetical relationship between high levels of perceived corruption with low levels of compliance behaviour. In this sense, this hypothetical model conceptualises that perceived levels of corruption influence both attitudes and subjective norms of PIT. Further, the affected attitudes and subjective norms, combined with high level of perceived behavioural control for non-compliance, lead to the formation of a negative intention to fully comply with the tax law. Subsequently, this negative behavioural intention can be reasonably used to predict the low level of compliance behaviour.

It should be noted that, as the theory posits, high levels of perceived behavioural control not to comply with tax are assumed to have two effects on intended behavioural outcomes: an indirect effect through negative behavioural intention and a direct effect on behaviour. This hypothetical relationship is depicted in Figure 3.

Figure 3 illustrates the hypothetical relationships among seven variables under consideration arising from the qualitative findings. Each circle in this diagram represents one construct and the arrow indicates a direct path of relationship. For instance, an arrow from point 'A' to 'B' in this figure indicates that high levels of perceived corruption are assumed to have a direct negative influence over taxpayers' attitudes towards reporting behaviour. Next, negative attitudes towards reporting behaviour in point 'B' are assumed to negatively affect point 'E' (intention to report actual income), before reaching point 'F' (level of reported income). Thus, this figure implies that the relationship between perceived levels of corruption and levels of reported income is indirect. These key findings and hypothetical relationships were then used and further investigated in the quantitative phase.

³⁰ For instance, 'why should I pay tax if it is just being corrupted?' was a frequently expressed view heard from participants—this sentiment was uttered 18 times in total during the interviews. Also, as two participants have precisely described, to compensate for such a 'non-deductible payment' for tax calculation purposes, certain types of taxpayers might have no choice but to underreport their actual income. Otherwise, taxpayers may have to pay 'double-taxes' which obviously reduces their financial circumstances.

Figure 3: Hypothetical relationships between perceptions of pervasive corruption and poor level of tax compliance arising from qualitative findings



4.2 Results of phase two: Survey instrument

4.2.1 Representativeness test

Although the survey respondents were randomly recruited, basic comparisons were undertaken to ensure the representativeness of the sample. Upon the availability of the population data, the comparisons were performed on four levels: national, regional, tax office, and annual income levels. As the survey collected almost the same proportion of self-employed and employed PITs in each of the surveyed tax offices, the variability of this proportion would not be evident. For this reason, the variability of types of annual return lodged by employed PITs—who may use either 1770S or 1770SS tax returns—was used.³¹

A summary of the total population of lodged annual tax returns for fiscal year 2014 by employed PIT, as provided by the Indonesian tax authority, Directorate General of Taxation (DGT), is presented in Table 2. It shows that the proportion of survey respondents submitting the 1770S return forms (29 per cent) and 1770SS forms (71 per cent) was broadly comparable to the proportions shown at the surveyed tax office, regional level and national levels.

Table 2: Comparison of the number of annual tax returns lodged by employed PITs as sample frame

Level of Comparison	Lodged 2014 annual tax returns			Normalised comparison		
	1770SS	1770S	Total	1770SS	1770S	Total
National level (331 tax offices)	7,088,694	2,550,327	9,639,021	74%	26%	100%
Regional level (39 tax offices)	892,598	292,867	1,185,465	75%	25%	100%
Surveyed tax office level (12 tax offices)	299,186	112,292	411,478	73%	27%	100%
Surveyed respondents (201 employed PIT)	143	58	201	71%	29%	100%

³¹ In Indonesia, there are basically two types of annual income tax returns which explicitly reflect the way taxpayers source their income: (i) the 1770 form for self-employed PIT and (ii) the 1770S or 1770SS forms for employed PIT. The 1770SS form is only used by employed PIT who had annual taxable income less than or equal to IDR 60 million from one employer, otherwise the 1770S form must be used.

Additionally, because in the survey respondents were required to indicate their income levels, it was also possible to compare respondents' income levels to the sample frame according to types of annual tax returns and income groups.³² The results suggest that the portion of 1770SS and 1770S annual tax returns in the sample frame (that is, 73 per cent for 1770SS and 27 per cent for 1770S) was almost similar to the portion of surveyed employed PIT's income groups (that is, 76 per cent for those with annual income less than or equal to IDR 60 million and 24 per cent for those with annual income over IDR 60 million).

Based on these two tests, it was concluded that the respondents, at least in particular the surveyed employed PIT, were reasonably representative of the sample frame with regard to type of annual tax return and income group.³³

4.2.2 *Timing-bias test*

As mentioned earlier in Section 3.2.1, the survey conduct was commenced in the middle of March 2015 and ended in June 2015. To check whether those who answered the questionnaire in June 2015 were in agreement with those who answered the questionnaire in March 2015, a wave analysis as suggested by Armstrong and Overton (1977) was performed.³⁴ The data for late responses, as an observed distribution, was taken from the survey data with tax offices ID 9-12 (four last surveyed tax offices). The expected distribution was calculated from early survey data with tax offices ID 1-4 (four earliest surveyed tax offices). Questions related to intention to report income and the level of reported income (Questions I2 and J2) were selected as two key attitudinal questions for the test.

To statistically determine the extent of timing-response bias, a chi-square goodness of fit test was applied. The test was conducted using six and seven degrees of freedom for Questions I2 and J2 respectively, with an α equal to 0.05. The acceptance regions of the null hypotheses were $\chi^2 = 12.59$ and 14.07 for Questions I2 and J2 respectively. As the computed value of χ^2 for I2 was 5.89 and the p -value of 0.435 was greater than α , the null hypothesis for I2 was not rejected. Similarly, as the computed value of χ^2 for J2 was 5.76 and the p -value of 0.568 was greater than α , the null hypothesis for J2 was not rejected. These results accept the null hypothesis that the two distributions were in agreement. As a result, it was concluded that there was no timing-response bias in the survey data.

4.2.3 *Respondents' profiles*

By their annual income levels

The surveyed respondents consisted of two groups: 196 self-employed PITs and 201 employed PITs.³⁵ While self-employed PITs regardless of their income level used the

³² As mentioned earlier, depending on the level of their annual income, employed PITs may use either the 1770S or 1770SS annual tax returns. For this reason, it was impossible to compare self-employed PIT's income level and the annual tax return they used as only one type of annual tax return (that is, 1770) was available.

³³ Ideally, the representativeness test of the sample frame should be performed upon various demographic bases such as age, gender, level of education, race, etc. However, based on the nature and availability of data provided by the DGT, only these two variables could be utilised for the test.

³⁴ Personal taxpayers were surveyed in relation to their 2014 annual tax returns. Their 2014 annual income tax returns were due by 31 March 2015.

³⁵ For the detailed characteristics of the surveyed self-employed PITs in this paper, see above n. 27.

1770 form for their annual tax return, employed PITs used two types of annual tax return: the 1770S and the 1770SS. As noted earlier, the 1770S was used by employed PITs with annual income more than IDR 60 million and the 1770SS was completed by employed PITs with annual income less than or equal to IDR 60 million. The majority of respondents (70 per cent) had an annual income level less than IDR 60 million while only eight (2 per cent) respondents had an annual income more than IDR 200 million. Further, PITs who had an annual income level less than IDR 60 million were the majority for both self-employed (1770) and employed PITs (1770SS) with 63 per cent and 71 per cent respectively.

By their age groups

The respondents were concentrated in two age ranges, 24 to 34 and 35 to 44 years old with 35 per cent and 33 per cent respectively. This is followed by 45 to 54 years old group which comprised 19 per cent of the total respondents. Unsurprisingly, respondents who had ages exceeding 65 years old were the age group with the lowest number of respondents, with less than 2 per cent of total respondents in that age group.

By their levels of education and types of tax handling

In terms of levels of education, a majority of respondents have finished their undergraduate level (59 per cent). Conversely, postgraduate level was completed by seven per cent of respondents. In this case, employed PITs with annual income level less than IDR 60 million (1770SS) and self-employed PITs (1770) tended to have lower educational qualifications compared to employed PITs with annual income more than IDR 60 million (1770S).

Most respondents were 'self-preparers' in dealing with the completion of their 2014 annual tax returns (51 per cent), with only two per cent of them using tax agents to prepare their annual tax return. Findings from a correspondence analysis suggest that while employed PITs with annual income less than IDR 60 million (1770SS) tended to use tax offices' assistance, self-employed PITs (1770) were likely to either self-preparers or sought assistance from their families or friends. A tax agent tended to be used by self-employed PITs and employed PITs with annual income more than IDR 60 million.

By their previous interactions with the tax authority

A vast majority of respondents have reported that they have never been contacted by the Indonesian tax authority (74 per cent). Conversely, only around two per cent of respondents had experienced a tax audit. Moreover, findings from a correspondence analysis suggest that self-employed PITs appeared to have more chance of getting audited than employed PITs. Self-employed PITs also tended to be contacted more by the tax authority.

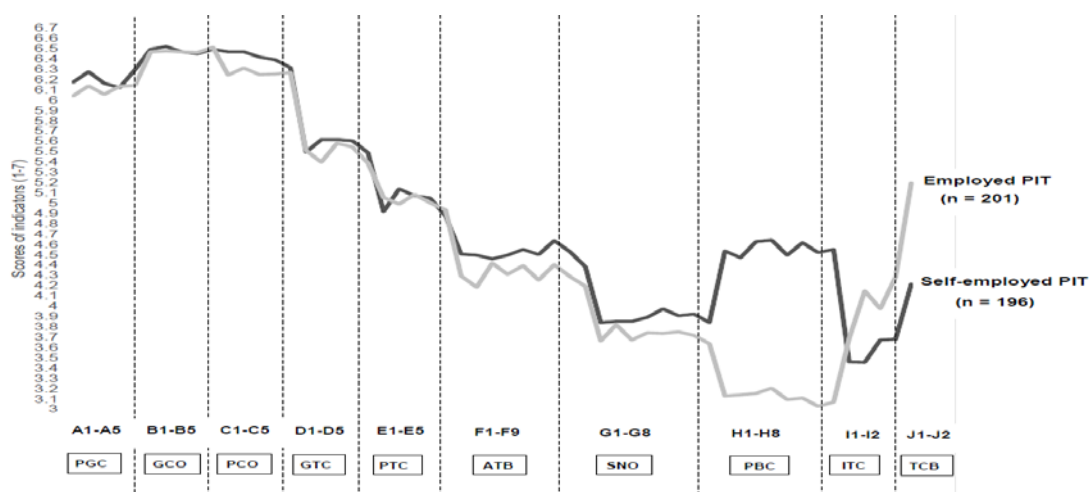
4.2.4 A comparison of indicators' mean of survey data: self-employed and employed PITs

To provide an easier description of the survey responses, at the risk of eliminating the variability of the data, each of the constructs under consideration was presented as a mean of their indicators. For the whole sample, in terms of perceived levels of corruption, it was apparent that the mean for indicators of perception of grand corruption was the highest (6.48) and the lowest was the mean of perceived petty tax corruption (5.01). Among all of the constructs, the lowest score was about 3.8 for both subjective norms towards tax underreporting and intention to report actual

income. Given that the respondents comprised two groups in terms of employment or self-employment status, it was possible to compare the indicators' mean of survey data according to the two groups.

Figure 4 indicates that the mean scores for indicators of the five types of perceptions of corruption (PGC, GCO, PCO, GTC, PTC) were higher than those of indicators of the adopted TPB constructs (ATB, SNO, PBC, ITC and TCB) for both the self-employed and employed PITs, with some degrees of variation. The widest gap was found in the indicators' mean of perceived behavioural control (PBC) over tax underreporting between self-employed and employed PITs, with self-employed PITs scoring much higher (M = 4.56) than employed PITs (M = 3.12). This notable gap represents the different nature of opportunity for non-compliance between employed and self-employed PITs.

Figure 4: A visualised comparison of indicators' mean of the survey data



4.2.5 Respondents' perceived levels of different forms of corruption

Table 3 details the respondents' scores of perceived levels of the five forms of corruption. The mean scores demonstrate that the perceived levels of corruption in Indonesia are very high. In general, the highest perceived level of corruption was grand corruption, with the lowest mean value for its indicator 6.46 out of 7. Perceptions of petty tax-corruption appeared to have the lowest mean score for its indicator of 4.91 out of 7.

Table 3: Respondents' perceived levels of different forms of corruption (n = 397)

Construct	Definition of corruption	Indicators	Min.	Max.	Mean	SD
Perception of general corruption (PGC)	The abuse of entrusted power by public official for private gain	A1	3	7	6.10	0.918
		A2	4	7	6.21	0.906
		A3R*	4	7	6.11	0.874
		A4	3	7	6.13	0.851
		A5	3	7	6.22	0.902
Perception of grand corruption (GCO)	The misuse of public power by high-level public official for private gain which often involves large sums of money	B1	4	7	6.48	0.676
		B2	4	7	6.51	0.646
		B3R	3	7	6.47	0.698
		B4	4	7	6.46	0.656
		B5	4	7	6.50	0.665

Construct	Definition of corruption	Indicators	Min.	Max.	Mean	SD
Perception of petty corruption (PCO)	The extortion of small payments by low-level public officials in daily interactions with the public as 'grease money'.	C1	4	7	6.36	0.705
		C2	4	7	6.39	0.679
		C3R	3	7	6.33	0.735
		C4	4	7	6.32	0.719
		C5	4	7	6.28	0.732
Perception of grand tax-corruption (GTC)	The misuse of public power by high-level tax official for personal pecuniary gains which often involves large illegal payment in dealing with certain tax cases.	D1	3	7	5.50	1.100
		D2	3	7	5.52	1.084
		D3R	3	7	5.60	1.139
		D4	3	7	5.58	1.090
		D5	3	7	5.44	1.110
Perception of petty tax-corruption (PTC)	The misuse of public power by low-level tax official for personal pecuniary gains or the extortion of small payments by operational staff in daily interaction with taxpayers as 'grease money'.	E1	2	7	4.98	1.069
		E2	3	7	5.06	1.032
		E3R	3	7	5.08	1.013
		E4	2	7	5.02	1.102
		E5	2	7	4.91	1.073

Note: For each of the questions, the respondents were asked whether the level of corruption was 'high'. The lowest score was 1 and the highest was 7. Score 1 refers to 'strongly disagree', score 7 means 'strongly agree'. * = reversed question.

4.2.6 Respondents' self-reported (non)compliance behaviour

Table 4 presents the extent to which respondents suggested they reported their actual income in their 2014 annual tax return.

Table 4: The extent to which respondents self-reported their (non)compliance behaviour

PIT types	(QJ1): I have fully reported my actual income in my annual tax return for fiscal year 2014 (SE) / I have fully reported my income other than salary, wage, or other tax withheld income on my annual tax return for 2014 (E)							
	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly Agree	Total
Self-employed	4	15	42	54	45	27	9	196
Employed	5	18	13	27	13	84	41	201
Total	9	33	55	81	58	111	50	397

PIT types	(QJ2): As far as I can remember, the amount of income I have reported in my annual tax return was roughly ... of my actual income*								
	No (other) income	0%	16%	33%	50%	67%	83%	100%	Total
Self-employed	7	2	7	34	42	53	37	14	196
Employed	167	34	0	0	0	0	0	0	201
Total	174	36	7	34	42	53	37	14	397

* for employed PIT this refers to income other than salary, wage, or other tax withheld income

A detailed cross-tabulation of the data indicates that only 18 per cent (36 out of 196) of self-employed PITs agreed or strongly agreed that they had fully reported their actual income. In contrast, 63 per cent (125 out of 201) of employed PITs agreed or strongly agreed that they had reported their income other than salary, wage, or other tax withheld income in their annual income tax return. It is important to note however that a majority of employed PITs taxpayers had no additional income other than from employment (83 per cent), implying that the rest (17 per cent, or 34 employed PITs)

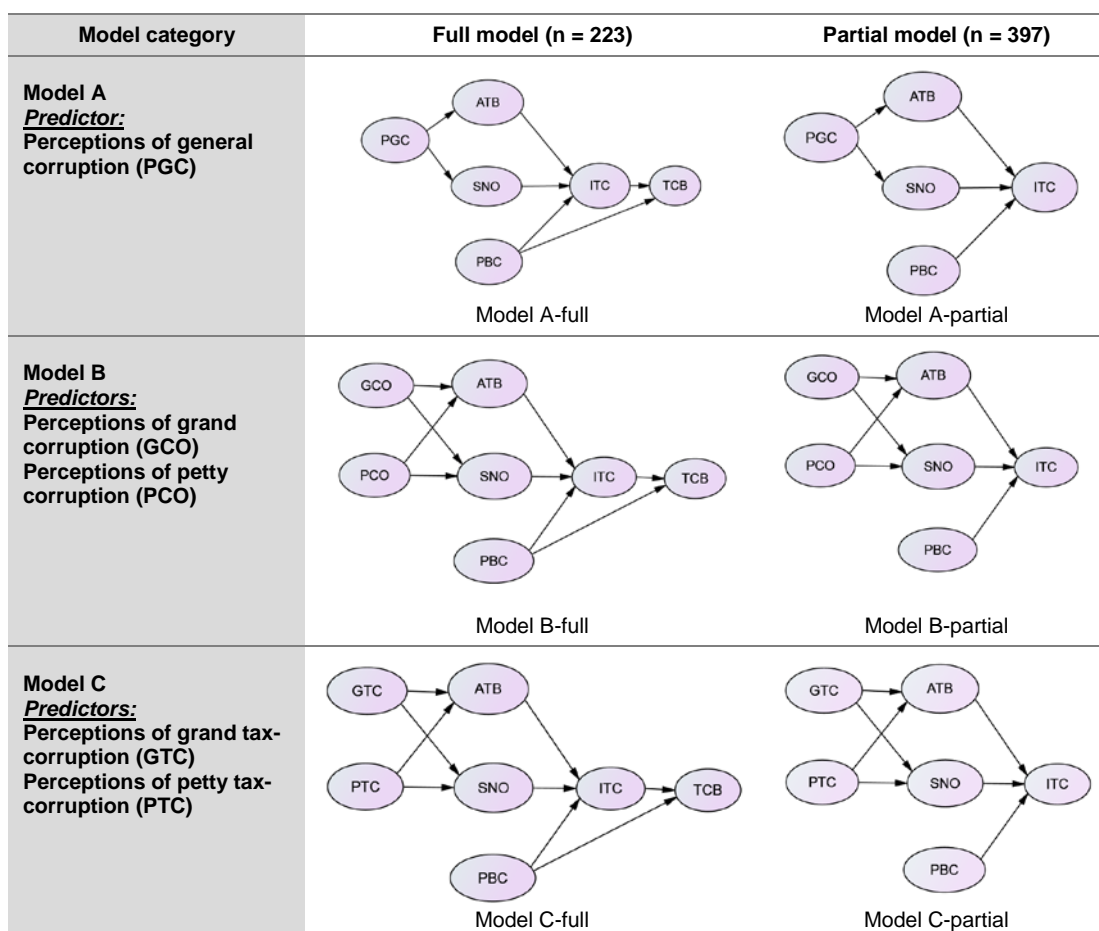
received additional income. Further, roughly four per cent of employed PITs (seven respondents) have reported that they did not earn income in 2014.

In terms of the amount of income being under-reported in the annual tax returns, the data indicated that 44 per cent of self-employed PITs had underreported between 50 per cent and 100 per cent of their actual income. Surprisingly, no respondent from employed PITs who received additional income other than from employment reported their additional income in the annual tax return—all of them (34 employed PITs) answered zero per cent.

4.2.7 Modeling the channels of causality

A hypothesised causal structure in SEM can be demonstrated in two ways: as a system of equations or as a diagram (Blunch, 2013). In this study, due to its greater communicative power, the diagrammatic approach is used throughout the paper.

Figure 5: Classification of recursive structural models under study



Note: ATB = attitudes towards tax underreporting; SNO = subjective norms towards tax underreporting; PBC = perceived behavioural control over tax underreporting; ITC = intention to report actual income; TCB = level of reported income

In modelling the channel of causality, the results previously presented in Section 4.2.6 have implications for further confirmatory analysis.³⁶ As in the conceptual model there is a 'level of reported income (TCB)' variable (see Figure 1), self-employed PITs who did not earn income (seven respondents) and employed PITs who did not receive additional income other than from employment (167 respondents) could not be included in the full model analysis.³⁷ As a result, while the whole sample (397 respondents) are used in the analysis of partial models, only 223 respondents can be used in the analysis of full models. For this reason, this study employs six recursive models for structural analysis. As illustrated in Figure 5, there are three categories of model: (i) model A uses perceptions of general corruption (PGC) as predictor variable, (ii) model B uses two types of perceptions of non-tax corruption (GCO and PCO) as predictor variables and (iii) model C adopts two types of perception of tax-corruption (GTC and PTC). Further, to make it easier to distinguish, the model category is added in the name of the model—for instance, the term 'Model A-full' means that the model employs perception of general corruption (PGC) as a predictor (exogenous) variable and tax compliance behaviour (TCB) as a dependent (endogenous) variable.

4.2.8 Measurement and structural models assessment

SEM analysis requires two model assessments: measurement and structural model tests (Hair et al., 2010). Measurement model tests aim to evaluate the construct validity of latent variables under study to examine whether an indicator adequately represents the observed latent variable and captures what it intends to measure. This examination was achieved by performing tests for convergent and discriminant validity. Convergent validity test is performed by evaluating the standardised construct loadings of indicators. The rule of thumb indicates that indicators with standardised factor loadings greater than 0.5 are acceptable.

The results of factor loadings test suggest that two out of 56 indicators have a factor loading value less than 0.5 ($G2 = 0.41$ and $H2 = 0.32$, both for full models). Consequently, these indicators are excluded in the structural analysis (see Appendix). Further, discriminant validity requires a high correlation between an indicator and its construct but low correlation with all other latent constructs. This assessment can be performed by examining correlation coefficients and the square root of Average Variance Extracted (AVE). The rule of thumb suggests that a construct which has a value of square root of AVE higher than its correlation coefficients among other constructs has good discriminant validity (for example, Bagozzi & Yi, 1988). The data suggest that the correlation coefficients among constructs were lower than the AVE values and as a result it was concluded that all of constructs under study have acceptable discriminant validity.

The second test, structural model assessment, aims to simultaneously analyse the relationships among constructs. Initially, the model estimation process is performed to measure the original model goodness-of-fit values. This paper adopts six measures: (1) Chi-square (χ^2); (ii) p-value, (iii) χ^2/df ; (iv) TLI, (v) CFI and (vi) RMSEA. In the

³⁶ Note that SEM is a 'confirmatory' tool rather than an 'exploratory' tool (Gefen et al., 2000; Kline & Rex, 2005). SEM is an a priori technique to simultaneously determine whether a pattern of linear relationships among a set of latent variables and manifest variables is valid, rather than to 'discover' an appropriate model (Shah & Goldstein, 2006).

³⁷ In this paper, the term 'full model' refers to the inclusion of 'level of reported income (TCB)' variable, while the term 'partial model' means the exclusion of the TCB variable (as illustrated in Figure 5).

initial model, the results of two measures, Chi-square and p-value, indicate that the six models do not fit well with the data. Accordingly, to obtain better structural models, model re-specifications are needed. The modifications were then made by adding five covariance of error terms in the initial model A-full (that is, e12 and e14, e63 and e69, e64 and e67, e91 and e94, e92 and e93) and two covariance of error terms in the initial models of B-full, C-full, A-partial, B-partial and C-partial (that is, e91 and e94, e92 and e93). The results suggest that the six models under consideration fit the data and, as a result, are ready for further hypotheses tests (see Appendix for a detailed description).

4.2.9 Hypotheses testing

To address the research problem, eight hypotheses previously described in Table 1 were examined at an α level of 0.05. The findings are as follows:

H1: the positive influence of perceptions of corruption on attitudes towards tax underreporting

It was found that a statistically significant positive relationship between perceptions of corruption and attitudes towards tax underreporting was evident in six out of ten observations. While there was no evidence of a statistically significant relationship between perceptions of petty corruption and attitude towards tax underreporting in both the full and partial structural models, it was found that perceptions of general corruption and petty tax-corruption were not related to attitudes towards tax underreporting only in the full models. Perceptions of grand corruption were the most influential variable in affecting respondents' attitudes towards tax underreporting in both the full and partial models, with the standardised coefficient values of 0.317 and 0.363 respectively. Based on this result, the null hypothesis H_{01} can be rejected.

H2: the positive influence of perceptions of corruption on subjective norms towards tax underreporting

It was found that a statistically significant positive relationship between perceptions of corruption and subjective norms towards tax underreporting was only evident in three out of ten observations. While there was no evidence of statistically significant relationship between perceptions of general corruption, grand corruption and petty tax-corruption, and subjective norms towards tax underreporting in both the full and partial structural models, it was found that perceptions of grand tax-corruption were not related to views on tax underreporting only in full models. Perceptions of petty corruption were the most influential variable in affecting respondents' views on tax underreporting in both full and partial models, with the coefficient values of 0.331 and 0.326 respectively. Based on this result, the null hypothesis H_{02} can be rejected.

H3: the negative influence of attitudes towards tax underreporting on intention to report actual income

A statistically significant negative relationship was found between respondents' attitudes towards underreporting income and their intention to report actual income in both full and partial models. Attitudes towards underreporting income were influential in undermining respondents' intention to report actual income in all models, with the coefficient values ranging from -0.400 to -0.451. Based on this result, the null hypothesis H_{03} was rejected.

H4: the negative influence of subjective norms towards tax underreporting on intention to report actual income

A statistically significant negative relationship was found between respondents' subjective norms on tax underreporting and their intention to report actual income in both full and partial models. Subjective norms towards underreporting income were influential in undermining respondents' intention to report actual income in all models, with the coefficient values ranging from -0.122 to -0.172. The statistical significance of the relationships in full models were evaluated at an α level of 0.10, while the statistical significance of the relationships in partial models were evaluated at an α level of 0.05. Based on this result, the null hypothesis H_{04} was rejected.

H5: the negative influence of perceived behavioural control over tax underreporting on intention to report actual income

A statistically significant negative relationship was found between respondents' perceived behavioural control over tax underreporting and their intention to report actual income in both full and partial models. Attitudes toward underreporting income were influential in undermining respondents' intention to report actual income in all models, with the coefficient values ranging from -0.165 to -0.244. Based on this analysis, the null hypothesis H_{05} was rejected.

H6: the positive influence of intention to report actual income on the level of reported income

This study hypothesised that intention to report actual income was the predictor of the level of respondents' reported income. As this involves the level of reported income as one of the variables under consideration, as previously discussed in Section 4.2.7, this analysis is only applicable in full models. Accordingly, this analysis was performed only on self-employed PITs who received income ($n = 189$) and employed PITs who received income other than their employment ($n = 34$). A statistically significant positive relationship was found between intention to report actual income and the levels of respondents' reported income. Intention to report actual income was influential in influencing respondents' reported income, with the score of 0.56. The statistical significance of these relationships were evaluated at an α level of 0.05. Based on this analysis, the null hypothesis H_{06} was rejected.

H7: the negative influence of perceived behavioural control over tax underreporting on the level of reported income

The study hypothesised that perceived behavioural control over tax underreporting influence the level of respondents' reported income. As discussed earlier, this analysis is only applicable in full models. Based on the results, no evidence was found to support the rejection of the null hypothesis H_{07}

H8: the negative effect of perceptions of corruption on intentional (non)compliance behaviour

The study hypothesised that ultimately perceptions of corruption have a negative effect on intentional (non)compliance behaviour. This hypothesis was tested in two stages. First, to examine whether or not these perceptions have an effect on taxpayers' intention to correctly report actual income, the total effects of perceptions different forms of corruption upon intention to correctly report actual income was examined. Second, it then followed by examining the total effects of perceptions of different

forms of corruption on the level of reported income. Accordingly, the second test was performed on full models only.

It was found that while all types of perceptions of corruption had negative effects on intention to correctly report actual income in the partial models, perceptions of petty corruption and perceptions of petty tax-corruption had insignificant effects in the full models. In terms of levels of reported income, it was found that three out of five types of perceptions of corruption seemed to have significant negative effects on the level of reported income: general corruption, grand corruption and grand tax-corruption. Perceptions of grand corruption was the most influential with -0.073, followed by perceptions of grand tax-corruption with -0.071 and perceptions of general corruption at the least with -0.034. Based on these findings, the null hypothesis H_08 can be rejected.

4.2.10 Summary of findings

The previous hypotheses tests have studied causal relationships between five perceptions of corruption variables and five TPB-based variables under consideration. For easier comprehension, a summary of the tests for H1-H7 is presented in Table 5, while the test for H8 is described in Table 6.

Table 5: Summary of statistically significant relationships of path analysis between perceptions of corruption and (non)compliance behaviour arising from hypotheses H1-H7

Hypothesis & direct relationship	Number of models being analysed	Number of models with statistically significant results	The lowest score of effect	The highest score of effect	The nature of causal relationship	Final decision	Ranks based on the highest score of effect
H1a PGC → ATB	2	1 ^a	0.289	0.289	Positive	Partly influential	6
H1b GCO → ATB	2	2	0.317	0.363	Positive	Influential	3
H1c PCO → ATB	2	-	n.a.	n.a.	n.a.	Not influential	n.a.
H1d GTC → ATB	2	2	0.225	0.290	Positive	Influential	5
H1e PTC → ATB	2	1 ^a	0.205	0.205	Positive	Partly influential	8
H2a PGC → SNO	2	-	n.a.	n.a.	n.a.	Not influential	n.a.
H2b GCO → SNO	2	-	n.a.	n.a.	n.a.	Not influential	n.a.
H2c PCO → SNO	2	2	0.326	0.331	Positive	Influential	4
H2d GTC → SNO	2	1 ^a	0.113	0.113	Positive	Partly influential	10
H2e PTC → SNO	2	-	n.a.	n.a.	n.a.	Not influential	n.a.
H3 ATB → ITC	2	2	-0.400	-0.451	Negative	Influential	2
H4 SNO → ITC	2	2	-0.122	-0.175	Negative	Influential	9
H5 PBC → ITC	2	2	-0.165	-0.244	Negative	Influential	7
H6 ITC → TCB	1 ^b	1 ^b	0.558	0.559	Positive	Influential	1
H7 PBC → TCB	1 ^b	-	n.a.	n.a.	n.a.	Not influential	n.a.

Note: → = direct path/effect; PGC = perceptions of general corruption; GCO = perceptions of grand corruption; PCO = perceptions of petty corruption; GTC = perceptions of grand tax-corruption; PTC = perceptions of petty tax-corruption; ATB = attitude towards tax underreporting; SNO = subjective norm towards tax underreporting; PBC = perceived behavioural control over tax underreporting; ITC = intention to report actual income; TCB = level of reported income; a = partial model; b = full model; n.a. = not applicable

From Table 5 it is apparent that a number of statistically significant causal relationships were found. In general, perceptions of corruption were more influential to attitudes towards tax underreporting (ATB) than subjective norms towards tax underreporting (SNO). In this regard, two influential relationships and two partly influential relationships were found in H1 (that is, GCO→ATB, GTC→ATB,

PGC→ATB, PTC→ATB respectively), while only one influential relationship and one partly influential relationship were found in H2 (that is, PCO→SNO and GTC→SNO). Attitudes, subjective norms and perceived behavioural control towards tax underreporting were found to be negatively influential upon respondents' intention to report actual income, which in turn were related to the level of reported income (TCB). The effect of perceived behavioural control over tax underreporting (PBC) seemed to be fully mediated by intention to report actual income (ITC) as there was no statistically significant relationship was found between PBC and TCB. In terms of score of (direct) effect, it was found that the effect of ITC upon TCB was strongest with path coefficient greater than 0.55. In the second place was the effect of ATB upon ITC, with scores ranging from -0.400 to -0.455. The effect of perceptions of grand corruption upon ATB was in the third place with values ranging from 0.317 to 0.363. Lastly, a path between grand tax-corruption (GTC) and SNO was found to have the weakest effect of 0.113.

Table 6: Summary of statistically significant total effects of perceptions of corruption on intentional (non)compliance behaviour arising from hypothesis H8

Hypothesis & indirect relationship	Number of models being analysed	Number of models with statistically significant results	The lowest score of effect	The highest score of effect	The nature of causal relationship	Final decision	Ranks based on the highest score of effect
H8a PGC →→ ITC	2	2	-0.061	-0.142	Negative	Influential	2
H8b GCO →→ ITC	2	2	-0.131	-0.167	Negative	Influential	1
H8c PCO →→ ITC	2	1 ^a	-0.061	-0.061	Negative	Partly influential	5
H8d GTC →→ ITC	2	2	-0.121	-0.127	Negative	Influential	3
H8e PTC →→ ITC	2	1 ^a	-0.107	-0.107	Negative	Partly influential	4
H8a PGC →→ TCB	1 ^b	1 ^b	-0.034	-0.034	Negative	Influential	3
H8b GCO →→ TCB	1 ^b	1 ^b	-0.073	-0.073	Negative	Influential	1
H8c PCO →→ TCB	1 ^b	-	n.a.	n.a.	n.a.	Not influential	n.a.
H8d GTC →→ TCB	1 ^b	1 ^b	-0.071	-0.071	Negative	Influential	2
H8e PTC →→ TCB	1 ^b	-	n.a.	n.a.	n.a.	Not influential	n.a.

Note: →→ = indirect path/effect; PGC = perceptions of general corruption; GCO = perceptions of grand corruption; PCO = perceptions of petty corruption; GTC = perceptions of grand tax-corruption; PTC = perceptions of petty tax-corruption; ITC = intention to report actual income; TCB = level of reported income; a = partial model; b = full model; n.a. = not applicable

From Table 6 it is apparent that, through indirect paths,³⁸ perceptions of corruption were generally influential in causing respondents to intentionally underreport their income. In terms of intention, the findings suggest that perceptions of grand corruption were the strongest in undermining respondents' intention to report actual income, with scores ranging from -0.131 to -0.167.³⁹ It was then followed by perceptions of general corruption (with scores between -0.061 and -0.143) and grand tax-corruption (with scores between -0.121 and -0.1127) respectively. Both perceptions of petty corruption and petty tax-corruption were found to be partly influential in undermining respondents' intention to report actual income. Further, the impact of perceptions of corruption upon actual compliance behaviour can only be demonstrated in the full models.

³⁸ That is the relationship between the two corresponding constructs was not directly connected, as previously shown in Figure 5.

³⁹ As indicated by the negative value of the total effect.

The findings suggest that three out of five of the types of perceptions of corruption were influential in undermining the respondents' level of reported income. It was found that when perceived levels of grand corruption, grand tax-corruption and general corruption increase by one standard deviation, intentional tax underreporting behaviour increases by 0.073, 0.071 and 0.034 standard deviations respectively.

5. CONCLUSION

This paper has examined the relationship between perceptions of different forms of corruption and the way Indonesian personal income taxpayers behave, in the context of reporting income in their 2014 annual tax returns. Confirming the qualitative findings with the quantitative findings is one of the important aspects of the adoption of the mixed-methods approach in this study. That is, in areas where convergence emerges, conclusions can be reached with greater confidence. In this regard, there are a number of confirmations where the findings of the quantitative phase support the qualitative findings, including the significance and the nature of relationships between perceptions of corruption and compliance behaviour.

The paper has demonstrated that, in general, high levels of perceived corruption influence Indonesian PITs to intentionally underreport their income tax. While the extent of perceived levels of different forms of corruption is confirmed by both the qualitative and quantitative approaches, the mechanism by which perceptions of corruption impact upon intentional tax underreporting behaviour are indicated by the empirical results of the quantitative approach. This is demonstrated by way of four important findings.

First, as indicated in the full models, the findings suggest that intention to report actual income is a good predictor of tax reporting behavior, with path coefficients greater than 0.55.

Second, taxpayers' attitudes towards tax underreporting and their subjective norms towards tax underreporting, coupled with the perceived behavioural control over tax underreporting, appeared to undermine taxpayers' intention to report actual income. This pattern of results was found in both full and partial models. Attitudes towards tax underreporting seem to have the strongest direct effect upon taxpayers' intention to report actual income (with path coefficients ranging between -0.400 to -0.445), followed by perceived behavioural control over tax underreporting in the second place with path coefficients ranging from -0.165 to -0.244.

Third, perceptions of corruption appeared to have stronger influences on taxpayers' attitudes towards tax underreporting than their subjective norms towards tax underreporting. In this regards, perceptions of grand corruption and grand tax-corruption were found to be influential in affecting taxpayers' attitudes towards tax underreporting (with path coefficients ranging from 0.317 to 0.363, and 0.225 to 0.290 respectively), while perceptions of petty corruption have a tendency to affect taxpayers' subjective norms towards tax underreporting (with path coefficients ranging from 0.326 to 0.331).

Finally, it was demonstrated that perceptions of corruption have an impact upon taxpayers to intentionally underreport their income tax. Perceptions of grand corruption, grand tax-corruption and general corruption appeared to be influential on

intentional underreporting behaviour with standardised total negative effects of 0.073, 0.071 and 0.034 respectively.

It is acknowledged that, as in all research, this study has inherent limitations. First, in generating empirical results, the main part of this study used a self-report survey. While to some extent self-reported data has been considered to be the only method capable of providing detailed information on taxpayer attitudes, motivation and beliefs, the accuracy of self-reports of past behaviour can be difficult to ascertain. That is, as a typical method, self-reporting in social research could potentially create its own problems attributable to the potential disparity of what people declare of their reported beliefs or they would do and what their actual beliefs or their actual actions are. Second, in the quantitative strand, this study treats perception data as a ratio variable while it is in fact an ordinal variable. Third, the study excludes taxpayer reporting behaviour at an unintentional level. Fourth, the study was limited to personal income taxpayers in Indonesia, a country where perceived levels of corruption are very high. Thus, the relevance of the findings to other types of taxpayers, or other jurisdictions, is unknown.

Overall, the present findings support the notions that perceptions of corruption are important determinants and have a negative impact upon tax compliance behaviour. The findings suggest that governments, particularly those in developing economies where perceived corruption is evident, should consider their citizens' concerns about perceived levels of corruption as one of the most important potential causes of intentional non-compliance behaviour.

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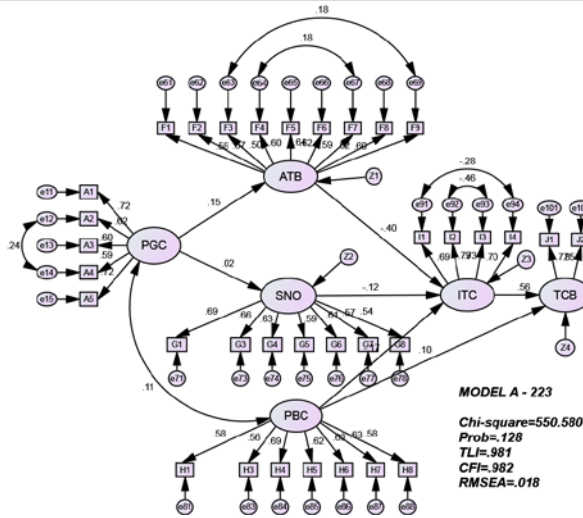
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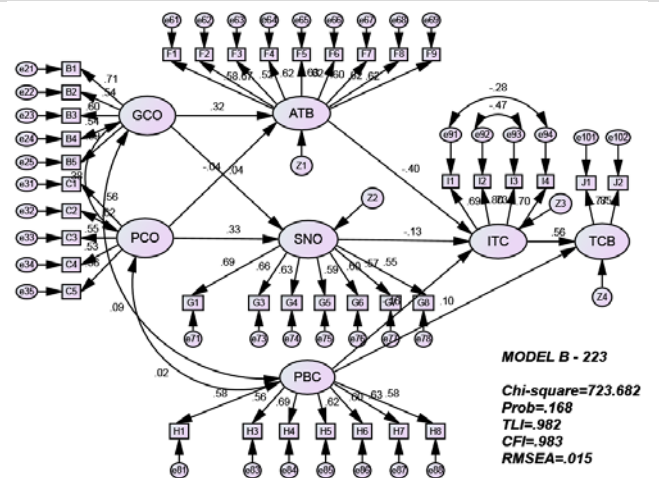
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APPENDIX

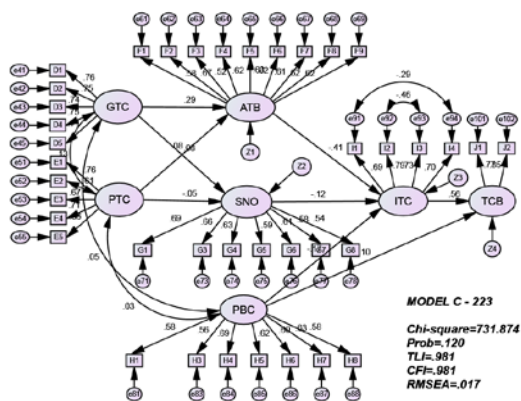
1. Model A-full (modified)



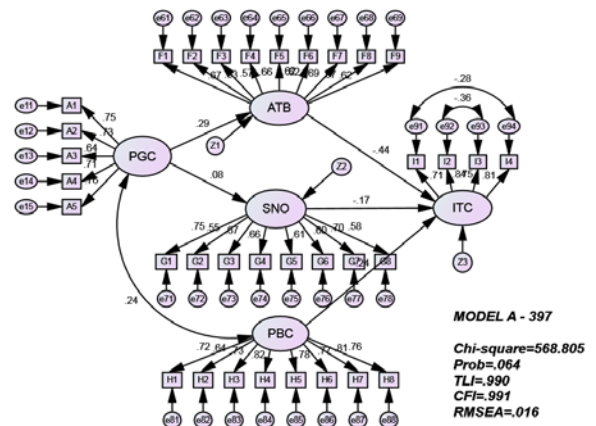
2. Model B-full (modified)



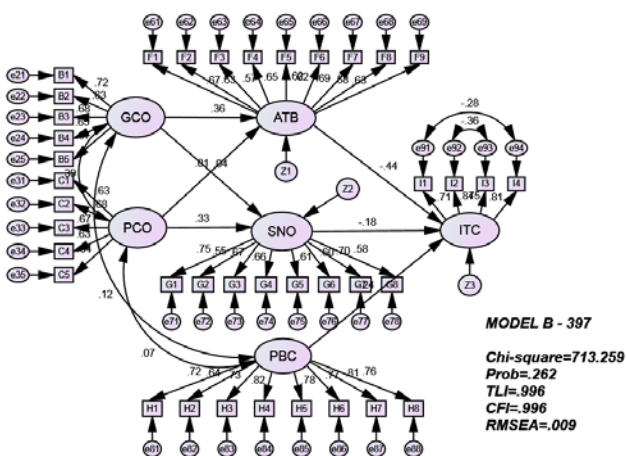
3. Model C-full (modified)



4. Model A-partial (modified)



5. Model B-partial (modified)



6. Model C (modified)

