Evaluating the Tax Compliance Costs of Small and Medium Enterprises Operated by Individuals under Alternative Enterprise Tax Regimes in Indonesia

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EVALUATING THE TAX COMPLIANCE COSTS OF SMALL AND MEDIUM ENTERPRISES OPERATED BY INDIVIDUALS UNDER ALTERNATIVE ENTERPRISE TAX REGIMES IN INDONESIA

Ferry

**A thesis in fulfilment of the requirements for the degree of
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Thesis submission for the degree of Doctor of Philosophy

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ABSTRACT

This study investigates the tax compliance costs of small and medium enterprises operated by individuals (individual SMEs) in Indonesia. It estimates and compares these costs under two different tax regimes operated in Indonesia: a presumptive tax regime that applies a single, final tax rate on annual turnover; and the regime that applies a more conventional, progressive tax rate schedule on calculated taxable income. The estimation and comparison involve all components of tax compliance costs, including explicit, implicit, and psychological costs.

The research is motivated by two main considerations. First, it focuses on individual SMEs because personal income taxpayers are by far the largest group of all taxpayers in Indonesia (91 per cent in 2018; see (DGT, 2019a)) and the contribution of SMEs is significant for Indonesia's Gross Domestic Product (63 per cent in 2018; see (Indonesia, 2019)). Secondly, despite their obvious importance, and despite significant research that has been conducted in many parts of the world (Alm, 2019, p. 32), the issue of tax compliance costs borne by individual SMEs in Indonesia has remained a relatively unexplored topic. Moreover, research into the psychological costs of tax compliance and research comparing the compliance costs of two different tax regimes in the same tax system has in each case been particularly limited. Thus, this study proposes a systematic analysis to address a series of research questions related to these under-explored areas relating to the tax compliance costs of individual SMEs in Indonesia.

By applying a mixed-modes research method, the study not only reveals the average costs to comply for each taxpayer under different tax regimes, but also identifies the significance of the total costs and the potential drivers of those costs. In addition, further analysis provides a novel understanding of aspects of tax compliance costs by showing how the components of the costs interact with each other. Finally, the findings may be useful for policymakers in Indonesia given that the presumptive tax regime will cease to exist in 2025.

DEDICATIONS

This thesis is dedicated to my family,

for transforming an ordinary journey into the extraordinary one.

千里之行始於足下 – 老子 – 道德經 第六十四章

A thousand miles journey begins beneath one's feet – Lao Zi – Dao De Jing Chapter 64

DEDICATIONS

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PUBLICATIONS/ CONFERENCE PAPERS

Ferry, Evans, C. C., & Tran-Nam, B. 2022, The Impact of the Presumptive Income Tax Regime on the Tax Compliance Costs of Small and Medium Enterprises Operated by Individuals in Indonesia, paper presented at the 33rd Annual Australasian Tax Teachers Association (ATTA) Conference, Christchurch, New Zealand, 19–20 January 2022.*

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* The co-authors contributed to this paper as follows: the principal author, Ferry, carried out all substantial research and drafting (80 per cent); the co-authors, Emeritus Professor Chris Evans and Professor Binh Tran-Nam, supported the principal author with the critical review of drafting (20 per cent).

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

AAT	Administrative Appeal Tribunal
ABs	Administrative Burdens
ADL	Arthur Dehon Little
ADF	Asymptotically Distribution-Free
AFM	Agriculture Forestry and Mining
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
APA	American Psychological Association
ARS	Acquiescence Response Style
ATO	Australian Taxation Office
AVE	Average Variance Extracted
BTBM	Business Taxpayer Burden Model
CAR	Cost driven Approach to Regulatory burden
CFA	Confirmatory Factor Analysis
CFC	Controlled Foreign Company
CFI	Comparative Fit Index
CGT	Capital Gains Tax
CI	Confidence Interval
CIAT	Inter-American Center of Tax Administrations
CIT	Corporate Income Tax
CM	Crosswise Model
COR	Convention of Resources
COVID-19	Coronavirus Disease 2019
CPA	Certified Practising Accountant
CR	Construct Reliability
CVAL	*Commissie Vermindering Administratieve Lasten*
DARS	Disacquiescence Response Style
DGCE	Directorate General of Customs and Excise (of Indonesia)
DGT	Directorate General of Taxes (of Indonesia)
DQs	Descriptive Research Questions

EC	European Commission
EFA	Exploratory Factor Analysis
ERS	Extreme Response Style
ES	Effect Size
EU	European Union
FBT	Fringe and Benefit Tax
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
FIAS	Foreign Investment Advisory Service
GAS	General Adaption Syndrome
GDP	Gross Domestic Product
GFI	Goodness-of-Fit Index
GLS	Generalised Least Squares
GO	Government Ordinance
GST	Goods and Services Tax
HDL	High-Density Lipoprotein
HMRC	Her Majesty's Revenue and Customs
HPA	Hypothalamic Pituitary Adrenocortical
IBM	International Business Machines
IMF	International Monetary Fund
IOs	Information Obligations
IR	Internal Revenue (of New Zealand)
IRS	Internal Revenue Service
ITBM	Individual Taxpayer Burden Model
JASP	Jeffreys's Amazing Statistics Program
KPMG	*Klynveld Peat Marwick Goerdeler*
LM	Lagrange Multiplier
MANOVA	Multivariate Analysis of Variance
MCMC	Markov Chain Monte Carlo
ML	Maximum Likelihood
MPRS	Mid-Point Response Style
NAO	National Audit Office

NARS	Net Acquiescence Response Style
NCRS	Non-Contingent Response Style
NFI	Normed Fit Index
NI	National Insurance
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
OTBR	Office of Taxpayer Burden Reduction
OTS	Office of Tax Simplification
PAYE	Pay As You Earn
PGFI	Parsimonious Goodness-of-Fit Index
PISCF	Participant Information Statement and Consent Form
PIT	Personal Income Tax
PITs	Personal Income Taxpayers
PLS	Partial Least Squares
PNFI	Parsimonious Normed Fit Index
PPP	Purchasing Power Parity
PwC	PricewaterhouseCoopers
QDAS	Qualitative Data Analysis Software
Q-Q	Quantile-Quantile
RCM	Regulatory Check-up Model
REDCap	Research Electronic Data Capture
RFI	Relative Fit Index
RMSEA	Root-Mean-Square Error of Approximation
RMSR	Root-Mean-Square Residual
RR	Response Range
RRT	Randomised Response Technique
SAM	Sympathetic Adrenal Medullary
SARS-CoV-2	Severe Acute Respiratory Syndrome CoronaVirus 2
SBBM	Small Business Burden Model
SBDTF	Small Business Deregulation Task Force
SCM	Standard Cost Model
SEM	Structural Equation Modelling

SES	Socioeconomic Status
SIROCCO	Scanning Instrument Regulations of Other Compliance Costs
SME	Small and Medium Enterprise
SPSS	Statistical Package for Social Sciences
SRMR	Standardised Root Means Square Residual
SQs	Secondary Research Questions
TCR	Total Costs of Regulations
TCS	Total Cost to Serve
TTCR	Total Tax and Contribution Rate
TVM	Tax Value Method
UK	United Kingdom
UN	United Nations
USA	United States of America
USAID	United States Agency for International Development
VAT	Value Added Tax
VE	Variance Extracted
VIF	Variation Inflation Factor
WB	World Bank
WHO	World Health Organisation
YP	Yellow Pages

Chapter 1: **INTRODUCTION**

1.1. Background and Motivation

This research project investigates the tax compliance costs of small and medium enterprises operated by individuals (individual SMEs) in Indonesia.[1] It considers the various elements of those tax compliance costs (including monetary, time, and psychological components), measures and evaluates those costs, and explores the key factors (e.g. tax law complexity or tax administrative requirements) that give rise to such costs. Further, this study compares the tax compliance costs that arise under two different tax regimes imposed in Indonesia on small and medium businesses after reforms for SMEs which took effect on 1 July 2013. The first tax regime involves a presumptive tax,[2] under which the government (during the period covered by this study) imposes a final tax rate of 0.5 per cent[3] on gross turnover, limited to businesses which generate turnover of up to IDR 4.8 billion per year. The second regime is that imposed by the general or conventional income tax under which the government levies conventional tax rates on computed taxable incomes. Hence, this study contrasts the tax compliance costs endured under the two divergent tax regimes that can apply to individual SMEs in Indonesia.

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[1] Other terms used to refer to individual SMEs in other countries are sole traders or sole proprietors.

[2] A presumptive tax is commonly a proxy for the regular tax (Pashev, 2006), involving alternative methods of estimating the tax liability (Thuronyi, 1996).

[3] Initially the presumptive tax applied at the rate of 1 per cent of gross turnover during the period 1 July 2013 to 30 June 2018. The rate was decreased to 0.5 per cent with effect from 1 July 2018 (Indonesia, 2018a).

Tax compliance costs are defined as the costs borne by taxpayers, or other third parties in complying with their tax obligations (Sandford, Godwin, & Hardwick, 1989, p. 10). These costs typically take various forms such as explicit monetary costs (such as payments to seek guidance from a tax adviser) or implicit time costs (such as those incurred when taxpayers devote their time to comply with tax regulations). Another burden related to tax compliance costs is psychological cost, which includes the stress, anxiety, and frustration experienced by taxpayers when complying with their tax obligations (Sandford et al., 1989, p. 18).

Three broad and universal conclusions have emerged from research into tax compliance costs that have taken place, mainly in developed countries, over the last few decades. First, tax compliance costs are high and significant in both absolute and relative measurements. For example, the aggregate annual income tax compliance costs of working individuals in Germany is up to EUR 9 billion or 4.7 per cent of personal income tax revenue of Germany in the 2007 fiscal year (Blaufus, Eichfelder, & Hundsdoerfer, 2014, p. 802). Taking another example, a study of individual tax compliance costs in Australia revealed that the gross tax compliance costs of individual taxpayers reached AUD 9.7 billion or 7 per cent of individual income tax revenue of Australia in the 2012 fiscal year (Tran-Nam, Evans, & Lignier, 2014, p. 170).

Secondly, these costs are also regressive: taxpayers with lower income or smaller business size tend to endure proportionally more burdensome costs than those taxpayers with higher income or larger business size. This has been repeatedly demonstrated in a number of studies, including research conducted in Australia

(Evans, Ritchie, Tran-Nam, & Walpole, 1996), in the UK (Godwin, 1995), and in the USA (Turnier, 1994, p. 963).

Finally, the burden of compliance is not declining, despite government efforts to simplify tax administration as studied in New Zealand (Gupta & Sawyer, 2015) and highlighted in the review of substantial tax reform in Australia (Tran-Nam, Evans, Krever, & Lignier, 2016).

The study of tax compliance costs is not only dominated by developed countries. In recent years there has been a growing number of studies of tax compliance costs in developing countries, such as in India (Das-Gupta, 2003a), Chile (Serra, 2003), Malaysia (Pope & Abdul-Jabbar, 2008b), South Africa (Smulders & Stiglingh, 2008), Bangladesh (Faridy, Copp, Freudenberg, & Sarker, 2014), and recently Ethiopia (Yesegat, Coolidge, & Corthay, 2017).

However, Indonesia is far behind other countries in the study of tax compliance costs (see (Alm, 2019)). Indeed, there have only been six known studies of compliance costs in Indonesia thus far. Two studies examined tax compliance costs of large company taxpayers. Prasetyo (Prasetyo, 2008) attempted to evaluate the effects of perception, size, and uniformity on compliance costs of publicly listed companies (as cited in (Susila, 2014, pp. 26-27)), whereas Susila and Pope analysed tax compliance costs of taxpayers registered in the large taxpayers office (Susila & Pope, 2014). Another two studies analysed tax compliance costs of SMEs in Semarang, a port city on the north coast of Central Java, Indonesia. One discussed external costs (Darwanto, Gunanto,

& Palupi, 2016), while the other analysed value added tax (VAT) compliance costs, especially the commencement costs of e-invoicing (Palupi & Darwanto, 2017). Another study focused on individual taxpayers in complying with the motor vehicle tax (a local tax which will be discussed further in Section 2.3.4) (Savitri & Musfialdy, 2016). The final study analysed the effect of business characteristics on compliance costs (Fauziati & Kassim, 2018). Summing up, there has been little discussion on tax compliance costs, especially those of individual SMEs, in Indonesia.

There are two main reasons for the focus on individual SMEs. First, Personal Income Taxpayers are the largest group (90 per cent in 2016) of taxpayers in Indonesia (DGT, 2017) and a recent study about personal income taxpayers in Indonesia argued that their level of tax compliance is poor (Rosid, 2017, p. 8). Furthermore, personal income taxpayers, despite being the most substantial portion of total taxpayers, have contributed relatively limited amounts of tax revenue during the last two decades (DGT, 2015b). The government has officially acknowledged that the low level of taxpayer compliance is a significant obstacle to adequate revenue collection in Indonesia. Thus the government needs to develop strategies to increase the optimal tax revenue (DGT, 2017). Secondly, SMEs contribute more than half (57 per cent in 2014) of Indonesia's Gross Domestic Product (GDP) (NDPA, 2016) while elsewhere it has been suggested that a substantial number of SMEs evade taxes (Indrawati, 2016). Hence, despite providing a significant contribution to GDP, SMEs are arguably making only a very limited contribution to tax revenue.

Most of the literature on the study of tax compliance costs has concluded that there are two significant components of tax compliance costs: the opportunity costs incurred (the actual costs paid to advisors and the monetary value of the time spent by taxpayers in complying with their tax obligations) and the psychological costs suffered in the form of cognitive behaviour disturbance such as distress, worry, and depression.

While measuring opportunity costs is difficult but relatively feasible, exploring psychological costs is far more problematic. As a result, most studies in the field of tax compliance costs have only focused on the opportunity costs and there is limited research into the psychological costs. Nonetheless a few researchers have undertaken systematic research into the psychological costs of tax compliance: for example, Diaz and Delgado (1991) in a study in Spain highlighted that more than half the respondents (51 per cent) participating in the study perceived the completion of the annual tax return as a wearisome problem (Diaz & Delgado, 1995, p. 221). Woellner et al. (2001; 2006) generated an estimation method of psychological costs in Australia in the late 1990s (Woellner, Coleman, McKerchar, Walpole, & Zetler, 2001) and they also investigated the key aspects in determining the psychological costs in the mid-2000s (Woellner, Coleman, McKerchar, Walpole, & Zetler, 2005).

Before proceeding to analyse the tax behaviour of individual SMEs, it is important to discuss the formal regimes for the taxation of SMEs in Indonesia. The concept of an SME was adopted in Indonesia by the enactment of the Micro Small Medium (MSM) Enterprises Law No.20 Year 2008. The relevant provision of this Law stipulates that

net assets and annual sales are the key factors for determining whether an enterprise is categorised as micro, small, or medium. The criteria for this categorisation will be elaborated further in Chapter 2.

In supporting the development of SMEs, the government has provided tax concessions to certain SMEs in the form of a presumptive tax instrument. The Government Ordinance No.46 Year 2013 (the GO-46/2013), as later amended by Government Ordinance No. 23 Year 2018 (the GO-23/2018), stipulates that SMEs with an annual turnover not exceeding IDR 4.8 billion may choose to have a final tax rate of 0.5 per cent of the gross income.[4] The presumptive tax regime has applied since 1 July 2013. Prior to the introduction of the regime, SMEs were obliged to abide by the conventional tax regime, which also will be discussed in Chapter 2.

In addition, SMEs with gross income up to IDR 4.8 billion are also exempted from VAT obligations (DGT, 2014). Since VAT is typically associated with substantial tax compliance burdens (Sandford, 1998; Sandford, Godwin, Hardwick, & Butterworth, 1981; Smulders & Evans, 2017; Tran-Nam, 2001b; Tran-Nam & Glover, 2002a; Walpole, 2014; Yesegat, 2009), SMEs in this category may effectively reduce a significant portion of their compliance costs. Hence, it is argued that this policy may enhance SMEs' competitiveness by not only facilitating simplicity in tax administration but also decreasing the compliance burden of the VAT.

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[4] See n 3 above for further explanation of the applied final tax rate.

Hence, a key focus of the current study in relation to the tax compliance burden is to compare the tax compliance costs of individual SMEs which can access the concessional presumptive tax regime under the GO-23/2018 law and individual SMEs which must still apply the conventional tax law.

1.2. Aims and Objectives

The overarching aims of this study are to examine the extent and distribution of tax compliance costs of individual SMEs in Indonesia, and to compare the burdens for individual SMEs under the presumptive and conventional tax regimes. To achieve these aims, there are three specific objectives. These are, first, to compare the average tax compliance costs of individual SMEs subject to the presumptive tax regime and individual SMEs who follow the conventional tax law, secondly, to estimate the tax compliance costs, both opportunity and psychological, of individual SMEs in Indonesia, and, finally, to identify the drivers of opportunity costs and psychological tax compliance costs facing individual SMEs in Indonesia, whether under the presumptive or conventional tax regimes.

In the above context, the thesis conducts the study in the following stages:
- (i) review of the literature relating to establishment and measurement of tax compliance costs;
- (ii) collection of data (through focus group discussions and surveys) from relevant respondents;

    (iii)   evaluation of the tax compliance costs based on the collected data by applying thematic analysis and a Structural Equation Modelling (SEM) approach, and finally

    (iv)   analysis of the results to identify the influence of the observed variables on tax compliance costs.

1.3. Scope

To ensure that the objectives of the study are feasible and achievable, the scope of the research has been limited in the following ways.

First, the scope of this thesis is limited to Indonesia, the home country of the researcher. Indonesia is a significant emerging country in terms of population and size of economy with widely known tax collection problems. There is still limited knowledge or evidence of tax compliance costs in Indonesia.

Secondly, the research is limited to taxpayers who are natural persons in Indonesia and does not include corporate entities, trusts, and other similar entities. This study focuses on personal income taxpayers as the centre of the analysis so that it can generate more insightful findings on the natural setting of personal income taxpayers in the Indonesian tax system, and because they constitute by far the largest group of taxpayers in Indonesia with a low exhibited compliance behaviour.

Thirdly, the subjects included in this study are limited to self-employed individual taxpayers with annual income not exceeding IDR 50 billion (around USD 3.6 million or AUD 4.8 million).[5] The choice of self-employed taxpayers is due to the fact those businesses are significant contributors to the economy. Moreover, the annual income threshold of IDR 50 billion is based on the criteria defining medium enterprises in Indonesia (Indonesia, 2008b).

Fourthly, the research is limited to Indonesia's tax system at the national level (Chapter 2 provides a detailed discussion of the national tax structure in Indonesia). It excludes taxes at the provincial and district/town levels of government. Since the government has been implementing fiscal decentralisation, the subnational governments such as the provincial and local governments generate their revenue through levying their own provincial and local taxes. Therefore, it is necessary to narrow the study of tax compliance costs to the contribution to the central government only.

Fifthly, the study is focused on individual SMEs located in four provinces (Jakarta and West, Central, and East Java). These four provinces contain more than half of the total registered individual SMEs in Indonesia, which the researcher considers is sufficient to provide the important input of a representative sample of all individual SMEs in Indonesia by geographical region.

Finally, the tax compliance costs measurement is applicable for all expenses incurred in the 2019 fiscal year (the year ended 31 December 2019). As this survey and focus

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[5] Exchange rate per 6 May 2018: AUD 1 = IDR 10,509.54; USD 1= IDR 13,939.87

group discussion relates to measurement of the cost burden only in the 2019 fiscal year, it is not applicable to costs incurred in periods prior to or after the 2019 fiscal year.

1.4. Significance

This research contributes significantly to the theory, knowledge and practice of taxation and tax studies in several ways. First, it expands upon the tax compliance costs literature by providing an in-depth study of the compliance costs of individual SMEs in Indonesia. This study provides a greater perspective on tax compliance costs than is usually analysed, with a more consistently sustained analysis of the opportunity costs and a closer attention to the psychological costs than previous studies, while also adopting a novel focus of conducting a detailed comparison of tax compliance costs borne by individual SMEs under two different tax regimes in Indonesia. In addition, the findings of this study provide a valuable platform for further studies to assess the costs of more specific or wider subjects or categories of taxpayers, such as mid-size corporate entities or corporate SMEs.

Secondly, it provides greater understanding of compliance costs for taxpayers in Indonesia in the context of a developing country that is heavily dependent upon tax revenue. Previous studies have highlighted that taxpayers in developing countries are not fully aware of the existence of such costs (see, for example (Susila & Pope, 2012, p. 722) and (Yücedoğru & Hasseldine, 2016, p. 539)). Therefore, it is necessary to

provide additional knowledge on these matters for taxpayers, especially for individual SMEs.

Finally, it presents empirical evidence on tax compliance costs in two distinctive ways that can be used by tax policy-makers and financial regulators to evaluate the impact of Indonesian government tax policy. First, it elaborates the extent to which presumptive income taxation simplifies matters for individual business whose income is less than IDR 4.8 billion and analyses the prevailing taxation policy and tax administration practices related to individual SMEs in Indonesia, a key group playing a pivotal role in both the national economy and tax administration. Despite the considerable number of such taxpayers, little attention has nevertheless been paid to analysing their compliance burdens. This thesis attempts to determine the magnitude of the tax compliance costs of this group and to clarify whether the simple presumptive tax regime is effective in reducing the burdens of tax compliance of this group in comparison with the conventional tax system.

Moreover, the findings of this study will be helpful for the government in evaluating policy related to tax administration and compliance for individual SMEs. It also demonstrates that the tax administration should play more important role in alleviating the regressive feature of tax compliance burdens. Specifically, the tax administration should recognise the importance of the various elements of the tax compliance costs that individual SMEs face using the presumptive tax and conventional tax system, and develop tax policy appropriately so that it may support growth by minimising burdens on individual SMEs. Thus, the findings of this study

contribute insights relevant to the formulation of tax policy measures to motivate improved tax compliance by individual SMEs.

1.5. Design

Given the nature of the study, the thesis adopts a research methodology of positivism. To achieve the objectives of the study, the research applies a mixed methods approach. First, it employs focus group discussions involving both taxpayers and tax professionals to establish a clear understanding of the broader context of the compliance costs burden for individual SMEs in Indonesia and to help inform the development of the survey instrument used later in the study. These focus groups are used to assess taxpayers' attitudes and opinions related to tax compliance costs. The study chooses this method because it permits more rapid data processing, and is more efficient in acquiring data from several respondents compared with individual interviews. It also enables an in-depth understanding of tax compliance costs to be gained in a more comprehensive way.

Secondly, to estimate the tax compliance costs (and their various components) the study adopts a quantitative method, utilising a survey to collect primary data. The research uses questionnaires to estimate the average amount of compliance costs incurred in complying with tax regulations, and to establish the levels of psychological costs endured by individual SMEs. The study uses probability sampling to construct a representative cohort of respondents, 50 per cent of which comprises eligible respondents operating under the presumptive tax regime, and the balance

respondents using the conventional tax regime. Various tax compliance costs studies have adopted probability sampling (e.g. (Eichfelder & Hechtner, 2018; Hansford & Hasseldine, 2012; Mathieu, Price, & Antwi, 2010; Slemrod & Venkatesh, 2002)). Previous studies have enriched the literature in developed countries, and in the same vein, this research examines tax compliance costs in a developing country context and seeks the support of the Directorate General of Taxes Indonesia (DGT) to generate sample respondents' data relating to individual SMEs in Indonesia.

Once the data from the survey is collected and collated, it will be analysed using statistical methodologies to establish the magnitude and distribution of the various components of the tax compliance burden and how the burden differs (or not) under the two contrasting tax regimes (presumptive versus conventional) and identify the factors which cause the variations in the burden.

1.6. Structure

This thesis consists of seven chapters. Following the introduction in this chapter, an overview of the Indonesian tax system, as relevant to the topic of the thesis, is provided in Chapter 2. It provides background on Indonesia from a macroeconomic perspective, looks at the Indonesian tax system in general, and explores the specific rules applied to SMEs in Indonesia and how the concessional treatment of SMEs may influence the business practice and compliance behaviour of SME taxpayers. It concludes with a comparison of the *modus operandi* borne by individual SMEs before

and after the enactment of the presumptive tax regime applicable for those who are eligible for that regime.

Chapter 3 then explores the existing literature relating to tax compliance costs and identifies the gap in the literature that this thesis seeks to address. The chapter also addresses the formulation of the research questions and provides the conceptual framework adopted in exploring both opportunity and psychological costs.

The research design adopted for this study is then explored in Chapter 4. This chapter provides the details of the research methodology and the approach adopted to address the research questions. It also elaborates the strategies available to obtain appropriate data and identifies applicable methodologies involving focus group discussions and survey questionnaires.

Chapter 5 describes the conduct of the fieldwork for the qualitative phase of the thesis. It also discusses the analytical procedures for data derived from focus groups. Chapter 6 then explains the conduct of the quantitative phase of the thesis. It clarifies the pilot testing and survey administration. The following chapter then covers the strategies adopted to establish the reliability and validity of the outcomes of the quantitative analysis approach and discusses the key results of the survey.

Finally, Chapter 8 provides the conclusions and summarises the discussion and policy recommendations from the research findings. It also illustrates the contribution of the

present study, identifies its limitations, and suggests areas for improvement in future research.

Chapter 2: **OVERVIEW OF THE INDONESIAN TAX SYSTEM**

2.1. Introduction

The previous chapter presented an overview of the background and motivation of the thesis, and explained in particular its aims, of examining the extent and distribution of tax compliance costs of individual SMEs in Indonesia and comparing the burdens for individual SMEs under the presumptive and conventional tax regimes.

To provide a more comprehensive background for the study, this chapter considers contextual factors pertinent to SMEs' tax affairs in Indonesia. The chapter focuses on three major elements. First, Section 2.2 briefly discusses Indonesia as the focus of the study, highlighting the general macroeconomic situation in Indonesia. Salient features such as GDP, GDP per capita, major economic sectors, workforce participation, export-import activities and foreign direct investment (FDI) are described to highlight the current circumstances and their implications for public policy, and more particularly tax policy, in Indonesia.

The general tax system is next described in Section 2.3. This section provides details of the role of tax revenue in the national economy, and explains the different levels of government at which taxes are levied (national, provincial, and local). It also elaborates upon the structure of the Indonesian tax system, describes the key taxes at the national level and provides background information on the Indonesian tax administration.

Finally, the specific methods of taxation of SMEs in Indonesia are highlighted in Section 2.4. This section provides a comparison of the conventional tax regime and the presumptive tax regime applicable for SMEs. Section 2.5 then concludes with a summary of the matters presented in the chapter.

2.2. Indonesia

The Republic of Indonesia is an archipelago nation situated in south-east Asia. It shares common borders with Malaysia to the north of the island of Kalimantan, Timor-Leste to the south of Nusa Tenggara, and Papua New Guinea to the east of Papua. Other neighbouring countries are Singapore, the Philippines, Palau, and Australia. It has a total land area of 1.9 million square kilometres, and comprises 17,504 islands (Statistics, 2017), and a population of 264 million (2017 estimate from the World Bank data) (WB, 2018c). Indonesia stands as the 14th largest country in the world in terms of surface area and the fourth largest in terms of population (WB, 2018e).

Figure 2-1 highlights the share of economic sectors and workforce participation in Indonesia. The major sectors, in terms of output, are the service, industrial, and agricultural sectors with contributions to GDP respectively of 43.6 per cent, 39.4 per cent, and 13.1 per cent (2017 estimate) (WB, 2018d). Workforce participation by sector, however, has a slightly different order. The largest group of the workforce (people above 15 years of age and actively working) is in the service sector (44 per

cent in 2017). Agriculture contributes the second largest workforce sector (30 per cent), and then the industrial sector (23 per cent).

Figure 2-1: Prominent Economic Sectors and Workforce Participation, Indonesia, 2011−2017
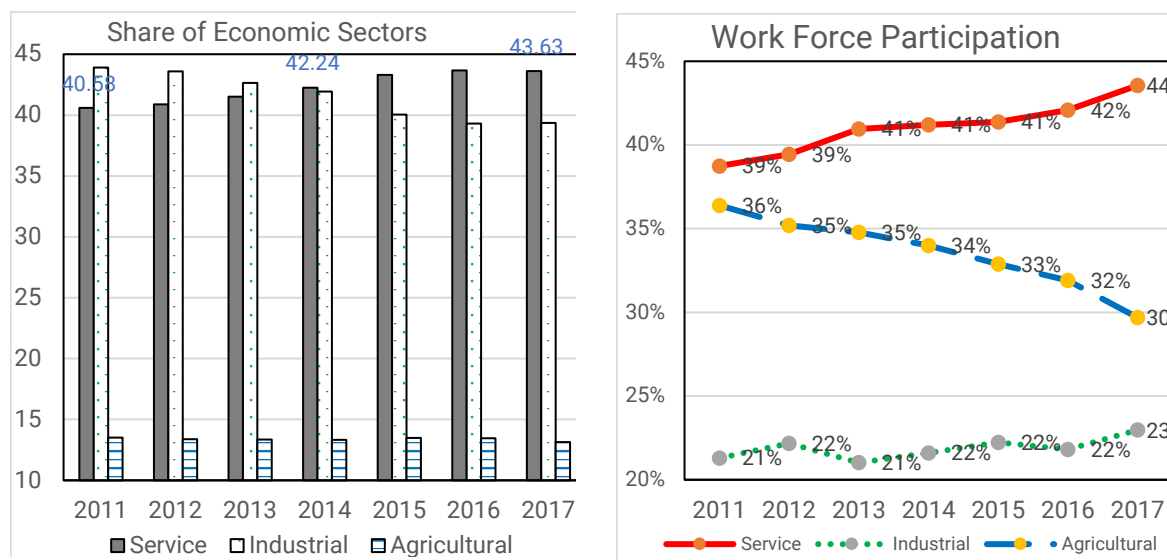
Source: service, value added (% of GDP); manufacturing, value added (% of GDP); agriculture, forestry, and fishing, value added (% of GDP), adapted from World Bank data, retrieved from: https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?locations=ID&name_desc=false; Population 15 Years To Top Who Worked by Main Industry 1986-2017, in the public domain, and adapted from Statistics Indonesia, retrieved from: https://www.bps.go.id/statictable/2009/04/16/970/penduduk-15-tahun-ke-atas-yang-bekerja-menurut-lapangan-pekerjaan-utama-1986---2018.html. Other data in the public domain.

Indonesia's nominal GDP in 2017 is estimated at USD 1,015 billion (IMF, 2018a), which stands as the 16th largest GDP in the world (WB, 2016). However, considering the large population of Indonesia, Indonesian GDP per capita is only USD 3,847 (WB, 2018a) (Figure 2-2). The amount is slightly higher than the comparable amounts for the Philippines (USD 2,989) and Vietnam (USD 2,343), but much lower than those for Thailand (USD 6,594) and Malaysia (USD 9,945). Figure 2-2 also highlights the rapid

growth of Indonesian GDP after the Asian financial crisis in 1998. It then levelled off after 2012 before it started to rise again in 2016.

Figure 2-2: GDP and GDP Per Capita (Current USD), Indonesia, 1990–2016

Another measurement of GDP per capita, based on Purchasing Power Parity (PPP), takes into account the cost of living in different countries (OECD, 2018b). GDP per capita in PPP terms for Indonesia in 2017 is measured at USD 12,284 and ranks 95th in the world. This is far below its neighbouring countries such as Singapore (USD 93,905, ranked third), Brunei (USD 73,836, ranked fourth), and Malaysia (USD 29,432, ranked 43rd) (WB, 2018a).

Figure 2-3 shows the Indonesian data on export and import activity during the period 2000-2017. In general, Indonesia throughout the period recorded a small surplus of exports over imports with a rising trend in both, subject to two significant reversals: a fall of exports in 2009 of 15 per cent; and a fall of exports in 2012 of 6.6 per cent. A

sharp decrease in value of exports to Japan, the largest export destination country during the period, could be part of the reason for these falls. The fall is estimated to be around 33 per cent (from USD 27,744 billion to USD 18,575 billion) in 2009, and 11 per cent (from USD 33,715 billion to USD 30,135 billion) in 2012 (Figure 2-5). Another factor could be that, while Indonesia generally withstood the global economic crisis which started around 2008, it was still intensely affected by weakening commodity demand from the People's Republic of China (referred to hereinafter in this thesis as China) which commenced at the end of 2011 (Rajah, 2018, p. 3).

Figure 2-3: Indonesia Export-Import Trend, 2000–2017
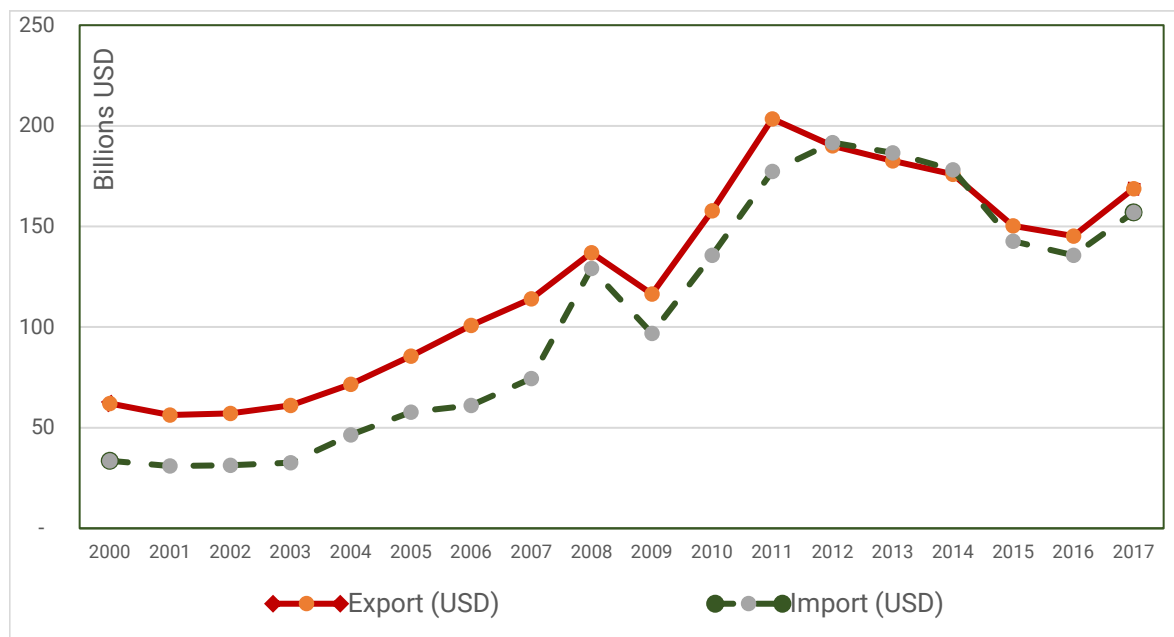
Source: Indonesia   Statistics: Export   dan   Import,   retrieved   from: https://www.bps.go.id/all_newtemplate.php; in the public domain.

Despite a rising trend of exports and imports, the ratio of Indonesian merchandise trade (material resources which add to or reduce the stock of a country by export or import activity (OECD, 2004a)) to current GDP is clearly decreasing (57.9 per cent in 2000 to 32.1 per cent in 2017) as shown in Figure 2-4. This Figure also highlights the

decreasing gap between exports as a proportion of GDP and imports as a proportion of GDP during the period 2000 to 2017 (from 17.3 per cent in 2000 to 1.1 per cent in 2017). Finally, and this may be a cause of concern, Indonesian export products, consisting mainly of primary goods (Wie, 2012), became less competitive in the global market (exports as a proportion of GDP plummeting 21 per cent over the period 2000 to 2017), highlighting the ending of the commodity boom since 2012. Thus, the government needs to initiate different policies to mitigate the falling trend of exports as a proportion of GDP and seek to develop more competitive products to satisfy the global markets' demand. For example, the government could provide more incentives for export industries to add more value to the primary products rather than merely export the primary goods.

Figure 2-4: Merchandise Trade (per cent of GDP), Indonesia, 2000–2017
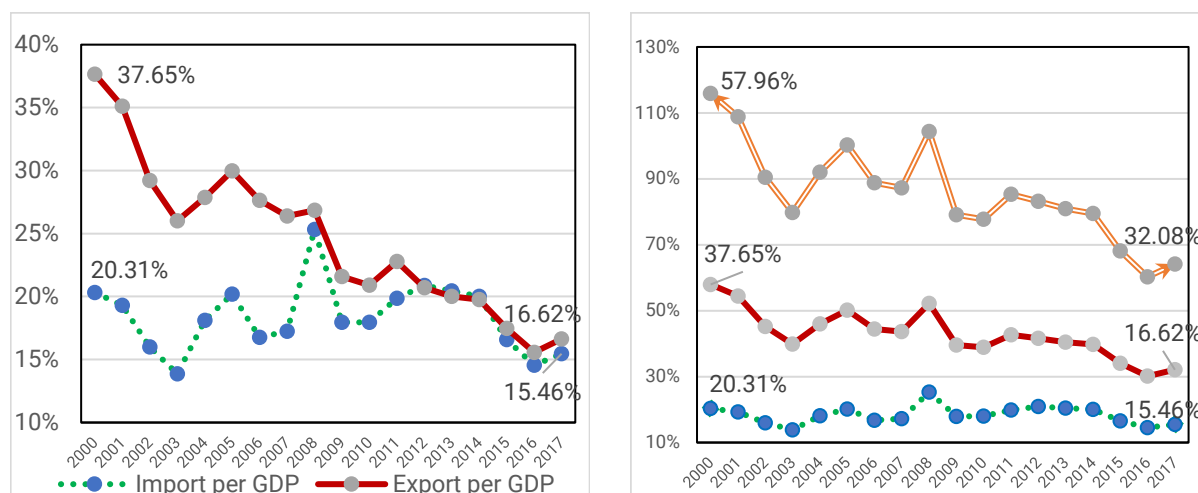
Source: adapted from Indonesia Statistics and World Bank data.

Figure 2-5 shows the major destinations for Indonesian exports over the period 2000-2016. Over the years 2000–2015, Japan was the largest market for such exports. However, China trade with Indonesia has increased rapidly, and China replaced Japan

as the top purchaser of Indonesian products in 2016. In the global market, Indonesia stood as the 29th largest exporter in 2016 (IMF, 2018b, p. 44) and contributed 1 per cent of international trade. The major export commodities of Indonesia are textiles, electronics, rubber, palm oil, forestry products, shoes, automotive products, shrimp, cocoa, and coffee. The top five export destination countries in 2016 were China, USA, Japan, Singapore, and Malaysia.

Figure 2-5: Major Export Destination Countries, Indonesia, 2000−2016
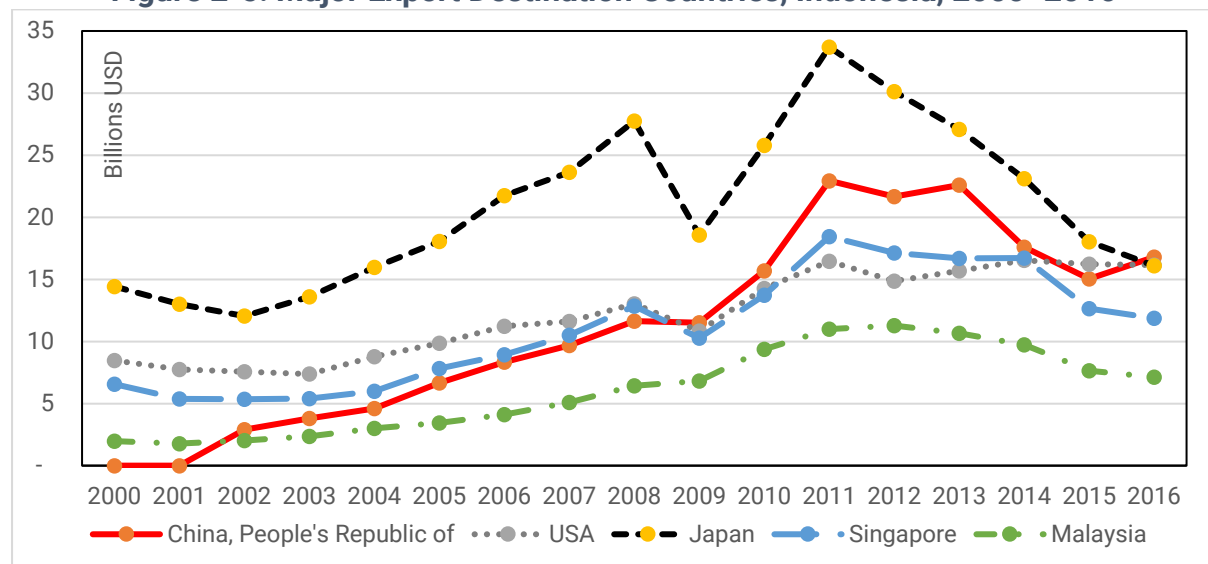
Source: Value of Exports by Major Countries of Destination (FOB value: million US$), 2000-2016 adapted from Indonesia Statistics, retrieved from: https://www.bps.go.id/statictable/2014/09/08/1010/nilai-ekspor-menurut-negara-tujuan-utama--nilai-fob--juta-us----2000-2016.html; other data in the public domain.

So far as import activity is concerned, the recent import data is shown in Figure 2-6. It highlights the types of products which Indonesia for the most part imports from other countries, such as machinery, mineral products, base metals, chemicals, and plastics. The main countries of origin of imports are China, Singapore, Japan, Thailand, and Malaysia.

Figure 2-6: Imports, Indonesia, 2016–2017
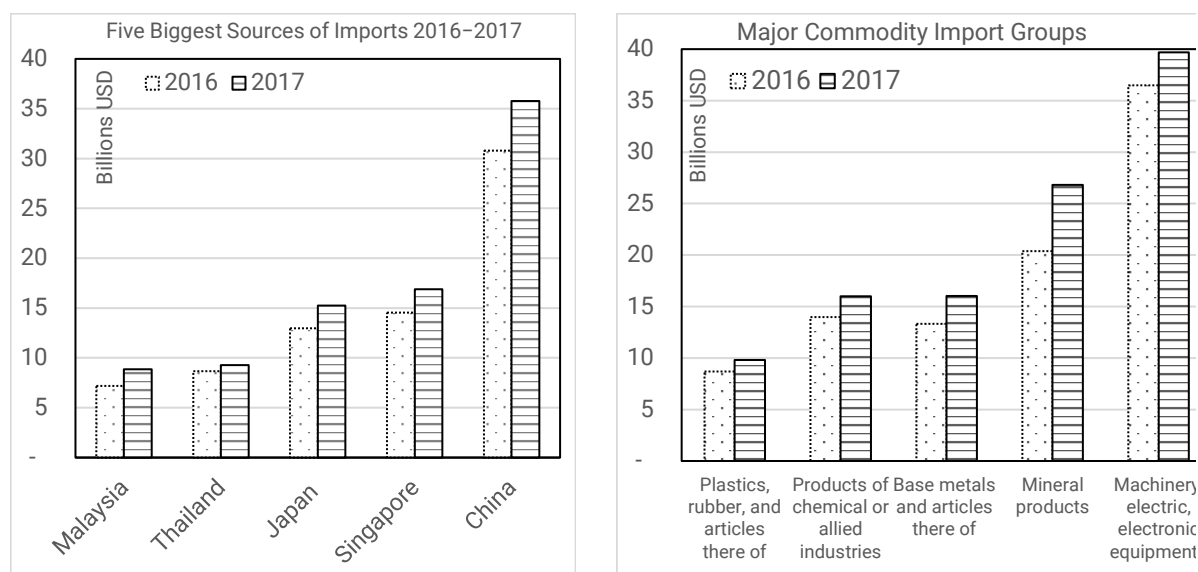
Source: list of imports adapted from the Foreign Trade Statistics: Imports Volume I, by Indonesia Statistics (Statistics, 2018, pp. 1-11).

Another important attribute of economic growth is FDI, defined as investment originating in one country which acquires assets in another country with the intention to manage the assets (WTO, 1996). During the last five years, most FDI in Indonesia has been concentrated in manufacturing (USD 13.1 billion in 2017), services (USD 13 billion), mining (USD 4.4 billion), and food crops and plantation (USD 1.4 billion). Singapore and Japan have been consistently investing in Indonesia over the past five years and became the two largest investors in 2017, with FDI valued at USD 8.4 billion and USD 5 billion respectively. China, and Hong Kong Special Administrative Region of the People's Republic of China (Hong Kong, SAR) then come in as the third and fourth largest investor jurisdictions with investment values of USD 3.4 billion and USD 2.1 billion (see Figure 2-7).

Figure 2-7: Realised FDI and Major Investment Sectors in Indonesia (USD Billion)
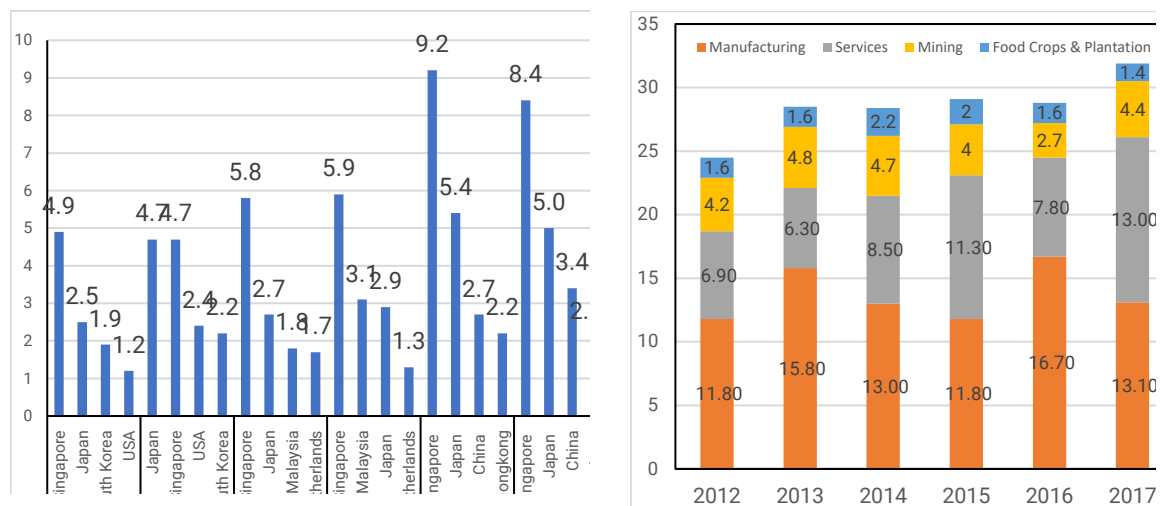
Source: adapted from the Domestic and Foreign Direct Investment realisation in quarter IV and January-December 2017 of the Indonesia Investment Coordinating Board (BKPM, 2018).

Analysis from the Lowy Institute suggests that the average of FDI in Indonesia has been only 2 per cent of GDP over the last decade and less than that of neighbouring countries such as Thailand (2.5 per cent), Malaysia (3.5 per cent), and Vietnam (6.6 per cent) (Rajah, 2018, p. 7).

Other data from the Organisation for Economic Co-operation and Development (OECD) may explain the FDI trend in Indonesia more comprehensively as it covers equity transactions, earnings reinvestment, and intercompany debt transactions (OECD, 2018a). It also highlights not only the trend of inward FDI, but also that of outward FDI (see Figure 2-8).

The most interesting feature from Figure 2-8 is the sharp decline in both inward and outward FDI in 2015 and 2016, with falls in inward FDI reaching 23.7 per cent and 76.5

per cent respectively. It is argued that this adverse situation (which reached its peak in the last quarter of 2016) arose because there was a massive divestment by foreign multinational corporations in Indonesia (UNCTAD, 2017). Furthermore, Basri claims that Indonesia was acutely affected by capital outflow after the US central bank started to end its policy of quantitative easing (a monetary policy to make large-scale purchases of assets) and taper its bond purchases (infamously labelled the "taper tantrum") (Basri, 2017, p. 138).

Figure 2-8: Inward and Outward FDI, Indonesia, Annually and Quarterly (USD Billion)
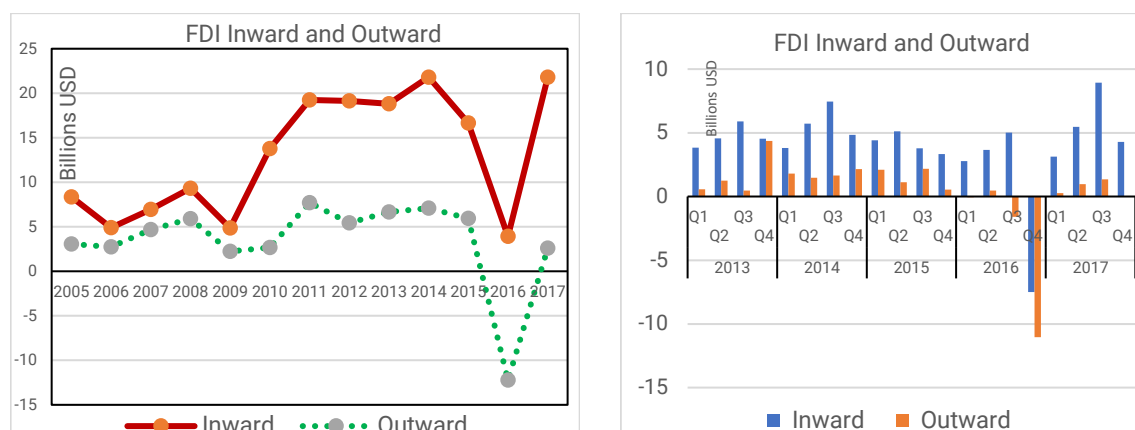
Source: FDI Flows adapted from OECD data, retrieved from: https://data.oecd.org/fdi/fdi-flows.htm; other data in the public domain.

Summing up, Indonesia has faced sluggish economic performance over the period 2012-2016, with the value of GDP reaching a critical low point in 2015 (Figure 2-2) together with a weakening export trend (Figure 2-3). The situation was exacerbated by the excessive reliance of export activities on primary products suffering volatile global demand and prices (Figure 2-4). It then worsened when the government could not attract significant FDI inflow to boost the economy with a freefalling of FDI inflows in

2015 and 2016 (Figure 2-8). Overall, the economic situation during that period was not supportive of the government being able to raise significant amounts of revenue.

This unfavourable economic situation has posed a major dilemma for the government. On the one hand, the government has an important agenda of seeking to maintain economic development and provide improved services to the public. On the other hand, the government has limited sources of revenue to finance all its programs. These factors were, in turn, the main reason for the government launching its "year of taxpayers' development" campaign in 2015 and subsequently the tax amnesty program in 2016, which will be discussed further in the next section.

2.3. The Indonesian Tax System

2.3.1. History: Structure and Revenue Yield

The tax revenue department was formally established in Indonesia in 1924.[6] However, the tax revenue collected was difficult to measure at the time due to the complicated legal structure of the tax system; as a result historical data about tax revenue in Indonesia and its allocation have been sparse and of doubtful accuracy (Lerche, 1980, p. 36). Lerche also notes that at the beginning of the 1970s Indonesia was critically dependent on revenue derived from fossil fuel energy (Lerche, 1980, p. 34). The contribution to Indonesia's economy from those products increased substantially from 7.8 per cent of GDP or 36.8 per cent of total exports in 1969 to its peak in 1981

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[6] See Section 2.3.5 for further discussion of the establishment of the Indonesian tax revenue authority.

when it accounted for 24 per cent of GDP and supplied 82 per cent of the total national exports (Odano, 1987, p. 148). However, when the price of gas and oil fell significantly, the revenue generated also plummeted. Hence the government started to seek alternative sources of revenue and particularly began to focus on tax revenue as a viable source to finance national spending.

Realising the potential to substantially increase its revenue from taxation, the government launched a series of tax reforms in 1983 which have been ongoing over the years since. The first phase of tax reform took place when the government enacted the General Provision and Tax Procedure Law on 31 December 1983 (Law No. 6 Year 1983 or General Provision Law). At the same time, the government also passed a series of tax laws including the Income Tax Law (Law No. 7 Year 1983) and the VAT and Sales Taxes on Luxury Goods Law (Law No. 8 Year 1983). In addition, two laws (Land and Building Tax Law and Stamp Duty Law) were introduced in 1985. Those laws commenced the shift from an official assessment to a self-assessment system (Odano, 1987, p. 165). The laws required taxpayers to comply with the tax law by self-registering, calculating taxable income, claiming tax credits deduction, and lodging tax returns. Tax offices, under the Directorate General of Taxation (DGT), were organised to operate and conduct services according to the type of tax, e.g. personal income tax, corporate tax, withholding tax, and value added tax (VAT).

As the economic challenge for Indonesia mounted in the ensuing period, the government found it necessary to amend the tax laws several times to keep up with the emerging developments. The second tranche of tax reform took place in 1994

when the government revised four tax laws (General Provision Law, Income Tax Law, VAT Law, and Land and Building Tax Law).

Following the 1998 Asian economic crisis, the government then launched the third era of tax reform in 2000. The tax reform not only amended the General Provision Law, Income Tax Law, and VAT Law, but also enacted two new laws (Tax Collection through Distress Warrant Law and Acquisition Duty of Right on Land and Buildings Law). This was followed by a series of tax administration revamps in 2002 which established, among other things, large taxpayers' offices. This marked the modernisation of tax offices with a function-based approach, which will be discussed further in the Section 2.3.5 on tax administration below.

The next phase of tax reform took place in the period from 2007 to 2009 (fourth amendment of General Provision Law, Income Tax Law, and VAT Law). The amendment of the General Provision Law was introduced to highlight the Sunset Policy program in 2008 when the government launched an amnesty program to encourage prospective taxpayers and registered taxpayers to self-register, lodge tax returns, amend previous tax returns, and pay the tax payable without penalties being imposed or tax audits conducted related to the amended tax returns (Rakhmindyarto, 2011, p. 198). The program lasted six months from 1 July 2008 until 31 December 2008 and was then extended until 28 February 2009 due to increasing public demand.

Despite the limited tax revenue collected (IDR 7.4 trillion), the Sunset Policy program brought in a substantial number (5.6 million) of new taxpayers (Rakhmindyarto, 2011,

p. 212). In an analysis of tax revenue from personal income taxpayers in the periods before (2004 to 2007) and after (2008 to 2014) the Sunset Policy program, Kasim et al have argued that there is a significant difference (IDR 690 million) in tax revenue between those two periods (Kasim, Arianty, & Hikmah, 2018, p. 125). The difference may be considered to arise from the new registered personal income taxpayers, and it may be reasonable to assume that the Sunset Policy program increased voluntary compliance both in terms of the number of taxpayers and the tax revenue collected.

Based on the success of the Sunset Policy campaign, the government then initiated a quite similar program with the "year of taxpayers' development campaign" in 2015. In addition, to encourage taxpayers to register, lodge tax returns, amend tax returns, and pay tax through incentives designed to mitigate the fine or interest penalties, it also permitted taxpayers to pay off their tax debts accrued before 1 January 2015 and submit the full payment at the latest by 31 January 2015 without incurring any interest penalty (DGT, 2016, p. 53). The government also promoted an incentive to revalue fixed assets for taxation purposes. This incentive provided benefits for taxpayers who utilised appropriate book-keeping practices so that those taxpayers could record their assets' fair value. Finally, taxpayers who had been audited and received a notice of tax assessment could benefit from the incentive to pay only the tax itself without the imposition of an administrative penalty. In general, the public's response was positive, with 27,063 applications for deduction or annulment of administrative penalty whilst the number of taxpayers revaluing their assets reached 2,049. Additional income tax paid under the revaluation of asset measures amounted IDR 20.1 trillion (DGT, 2016, p. 55).

The government's most recent initiative was the tax amnesty program for the period 1 July 2016 to 31 March 2017. Designed to persuade taxpayers to declare unreported assets and repatriate investments from overseas, the program attracted more than 0.9 million taxpayers, of which one-third were self-employed personal income taxpayers. The campaign, which has been judged by the government to be successful, attracted additional revenue of IDR 135 trillion (combining the redemption money of IDR 114.54 trillion (DGT, 2018a, p. 8), payment from tax arrears of IDR 18.6 trillion, and payment from preliminary investigations of IDR 1.75 trillion (Mustami, Triyono, Quddus, & Prihatini, 2017)). Overall, the achievement was slightly below the targeted revenue of IDR 165 trillion (81.8 per cent).

In general, the several tax reform programs in Indonesia over the last four decades were undertaken to revamp tax policy, encourage taxpayers' compliance, deliver better service for taxpayers, ensure fairness to the public, and improve the quality of tax administration.

Figure 2-9 reveals that there was a steady increase in tax contributions to the national revenue over the period from 1991 to 2017. In general, tax revenue has contributed significantly more than half of the total revenue since the 1990s, with the input consistently increasing from 58 per cent in 1991 to 84 per cent in 2017. Considering the vital contribution of tax revenue to national revenue, it is important for the government to design and operate a prudent and sustainable fiscal policy to maintain economic growth, attract foreign investment, and boost domestic employment.

Figure 2-9: Indonesian National Revenue Realisation, 1991−2018
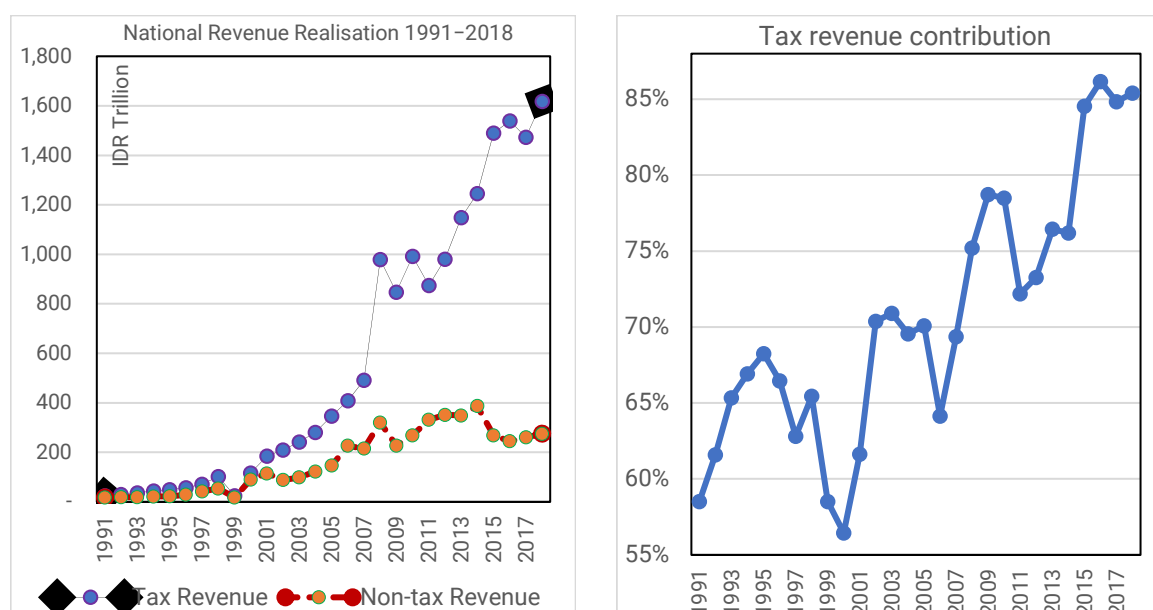
Source: adapted from the compilations of National Budget Year 1991 – 2018[7] (2018 estimated).[8]

2.3.2. Tax to GDP Ratio

The tax to GDP ratio is one well-established means of comparing the overall tax burden within and across countries (Evans, Hasseldine, Lymer, Ricketts, & Sandford, 2017, p. 17). Figure 2-10 shows the tax to GDP ratio for Indonesia between 2013 and 2017. The trend clearly indicates that despite various efforts to increase the tax revenue, tax ratios have been exceptionally low during the period of 2013 to 2017. The Figure also highlights that the revenue derived from oil, gas, and coal has continued to decrease so that, by 2017, there was no gap between the tax revenue including the oil, gas, and coal revenues and the tax revenue excluding those products.

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[7] This Figure is generated by combining the data of Indonesian national Budgets available to the author.
[8] IDR 1 trillion = USD 69,501,155.46 or AUD 93,882,432.91 based on currency exchange rates as at 30 July 2018.

Figure 2-10: Tax to GDP Ratio, 2013–2017
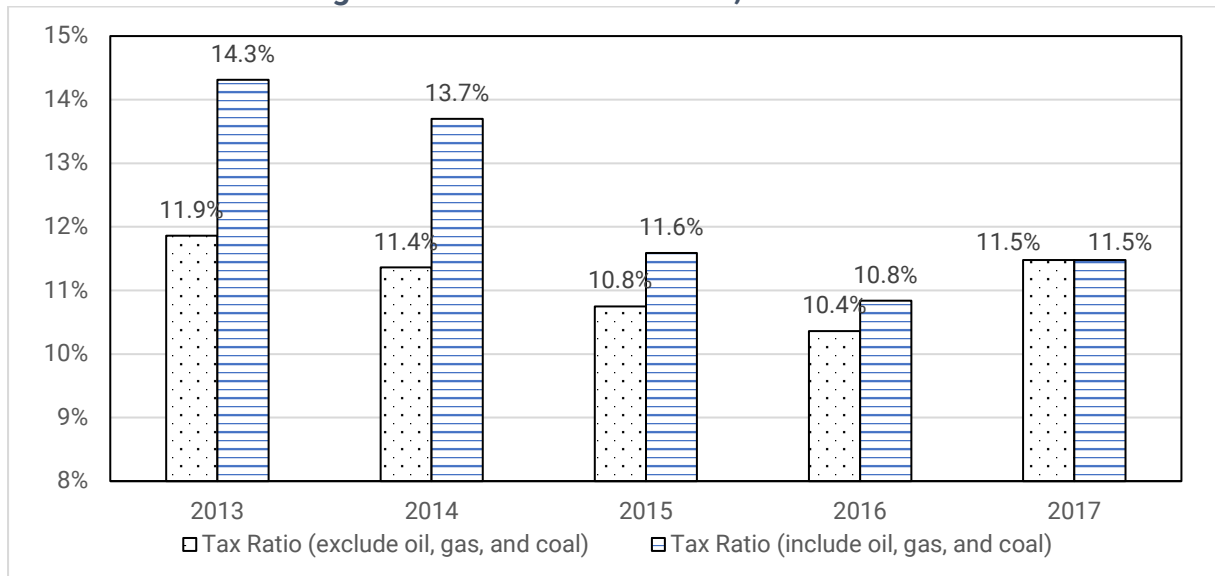
Source: adapted from the Indonesia National Budget Fiscal Year 2018 (Indonesia, 2018b, p. 309).

Compared with other countries in both the OECD and G20, the Indonesian tax ratio is absolutely and relatively low (Arnold, 2012, p. 5; C. Lewis, 2019, p. 17). Even in the Southeast Asian region, the Philippines, Malaysia, and Singapore have achieved higher tax ratios than Indonesia (OECD, 2017, p. 15). The OECD has suggested that low tax compliance could be a factor behind these low figures (OECD, 2017, p. 15). Low compliance is so pervasive that, from an estimated taxable population of 44 million people, only 27 million were recently reported to be registered as taxpayers, only 10 million of whom satisfied their tax liabilities by paying the appropriate amount of tax (UNESCAP, 2016, p. 2).

Another factor which may help to explain the low tax ratio is the limited tax base as a result of various exemptions and incentives provided by the government to promote and attract investment (OECD, 2012, p. 32; 2017, p. 15). The International Monetary Fund (IMF) also argues that the Indonesian VAT collection effectiveness ratio is

around 60 per cent (less than those of Vietnam, Thailand and Singapore at 80 per cent each) due to various exemptions on intermediary inputs (IMF, 2017, pp. 24-25). Hence, to increase tax revenue, United Nations for Economic and Social Commission for Asia and the Pacific (UNESCAP) has suggested a number of measures that Indonesia could implement such as rationalising its excessive tax incentives, and improving tax compliance, for example in relation to arrears collection (UNESCAP, 2016, p. 3).

Moreover, the *Paying Taxes* report of 2018 by PricewaterhouseCoopers (PwC) highlighted that the Total Tax and Contribution Rate (TTCR) in Indonesia (30 per cent) is lower than the average for the Asia Pacific region (36.4 per cent). It is also low compared with Southeast Asian countries such as Vietnam, Malaysia, and the Philippines with TTCRs respectively of 38.1, 39.2, and 42.9 per cent (PwC, 2018, p. 67). The data is consistent with the finding of the IMF that lower rate regimes in Indonesia's Corporate Income Tax (CIT) are one factor causing the country's CIT productivity ratio (the ratio of CIT revenue as a proportion of GDP to the top rate of CIT) to be only 15 per cent (compared with those of Thailand, Vietnam, and Malaysia of 25, 30 and 35 per cent respectively) (IMF, 2017, p. 24).

Furthermore, Indrawati has argued that the non-taxable income threshold for personal income taxpayers is excessive[9] (Indrawati, 2017). Only Singapore and Thailand have higher thresholds, despite the fact that Indonesia has a lower tax ratio than those of its counterparts in Southeast Asia. For example, Vietnam has a tax ratio of 19 per cent,

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[9] See Table 2-1.

Thailand 16.3 per cent, Malaysia 15.3 percent, Cambodia 14.2 per cent, Laos 13.5 per cent, and Singapore 13.6 per cent (MUC, 2017).

Finally, Rosid has attested to the fact that there is a perception of excessive corruption in Indonesia, thus hampering the compliance behaviour of personal income taxpayers in Indonesia (Rosid, 2017, p. 305). A further study of his with Evans and Tran-Nam examined the psychological behaviour that discourages personal income taxpayers from disclosing their actual income or engaging in underreporting behaviour. It highlighted that perceptions of grand corruption, grand tax corruption, and general corruption are highly influential upon the intention to engage in underreporting behaviour (Rosid, Evans, & Tran-Nam, 2018, p. 19). Hence, to deter this harmful perception, their study urged the DGT to establish, maintain, and build integrity as a direct experience of personal income taxpayers, as well as utilising substantial mass communication coverage, and building strategic networking and cooperation with other public institutions for this purpose (Rosid et al., 2018, p. 29).

To sum up, the low tax ratio in Indonesia is the result of an accumulation of factors, in particular poor compliance, a limited tax base due to excessive incentives and VAT exemptions, and a low TTCR as well as a high non-taxable income threshold, and the malign effect of a perception of corruption.

2.3.3. Tax Mix

Another way of analysing tax systems within and across countries is by looking at the mix of revenue generated from different tax sources. The OECD refers to this as "tax structures" – the share of major taxes in total tax revenue (Evans et al., 2017, p. 20).

Income tax revenue (excluding the income tax on oil and related products) is an essential component of Indonesia's sustainable fiscal policy. In that sense, Figure 2-11 reflects the tax contribution average during the period 2013-2016 and segregates the income tax from oil (which contributes 5.9 per cent of revenue). Income tax (excluding oil) provides the largest portion (44.6 per cent) of national tax revenue. VAT contributes the second largest with more than one-third of the tax revenue (35.6 per cent), whilst excise duties supply 11.2 per cent of the revenue. Finally, the remainder of the revenue comes from the land and building tax (2.1 per cent) and other taxes at 0.5 per cent.

Figure 2-11: Indonesian Tax Contribution, Average for 2013−2016
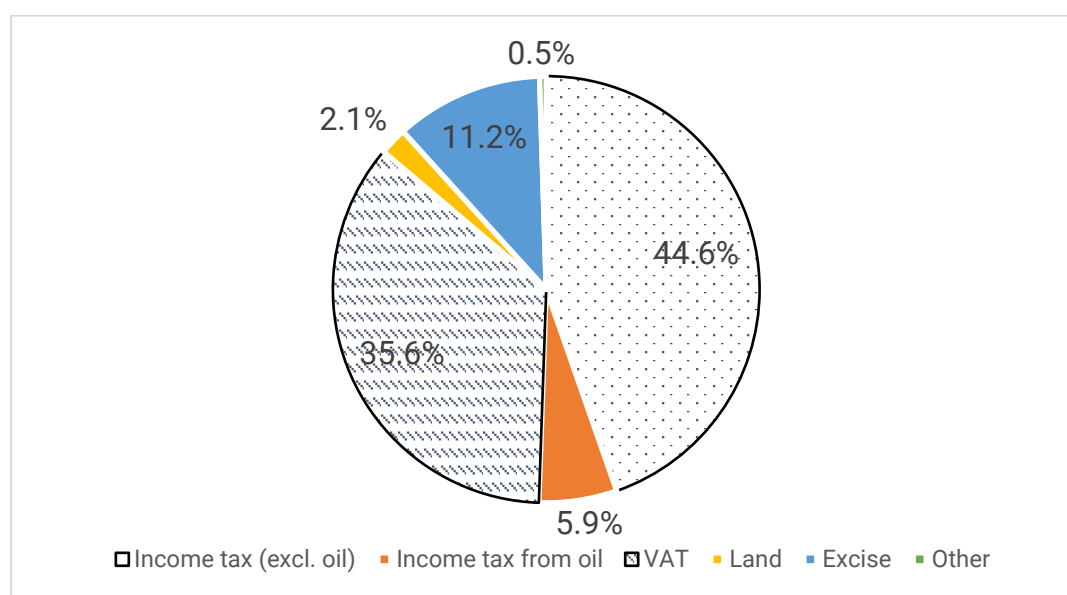
Source: adapted from the Indonesia National Budget Fiscal Year 2018 (Indonesia, 2018b, p. 310).

The three largest contributors to revenue during the period 2007-2018 are highlighted in Figure 2-12. In general, income tax, VAT, and excise have consistently contributed 90 per cent of national revenue over the last decade, comprising roughly 50 per cent from income tax, 30 per cent from VAT, and 10 per cent from excise duties. The remainder of the tax revenue can be attributed to stamp duty and land and building tax in the agriculture, forestry, and mining (AFM) sectors. Those taxes have contributed all the revenue of the central government.

Figure 2-12: Prominent Tax Contributors in Indonesia, 2007−2018
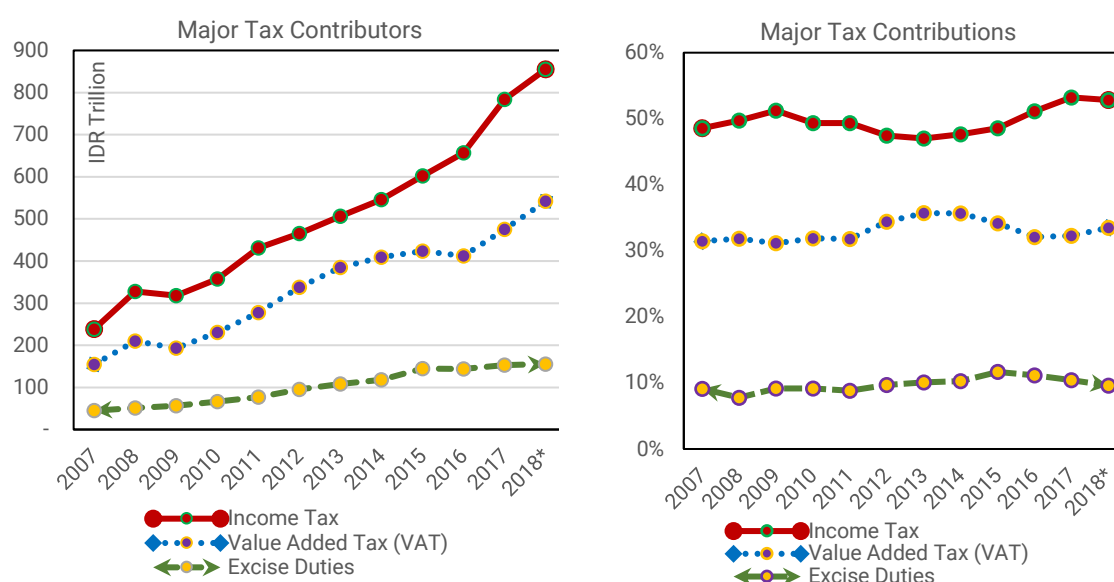
Source: adapted from Statistics Indonesia, Actual Government Revenues (IDR billion), 2007-2018, retrieved from: https://www.bps.go.id/statictable/2009/02/24/1286/realisasi-penerimaan-negara-milyar-rupiah-2007−2017.html (the year 2018 is in an estimated amount).

Considering that income tax and VAT account for roughly 80 per cent of tax revenue, a further analysis of the components of those taxes compared to the total non-oil tax revenue over the five years 2013-2017 is highlighted in Figure 2-13. Withholding tax (tax withheld at source or deducted from income and paid by the payer of the income)

has consistently represented the most significant source of income tax followed by monthly advance payments of CIT tax instalments, with the lowest contribution coming from the monthly advance payments of Personal Income Tax (PIT) instalments. The combination of PIT with other taxes (various trivial taxes) only contributed 1.8 per cent of the total non-oil tax revenue in 2017.

Figure 2-13 also shows the significant increase in other taxes in 2016 (from 0.8 per cent to 9.7 per cent) before falling back in 2017. The variation in this component could be the result of the tax amnesty program which occurred during the period.

Figure 2-13: Contribution of Indonesian Income Taxes to Tax Revenue (Excluding Oil)
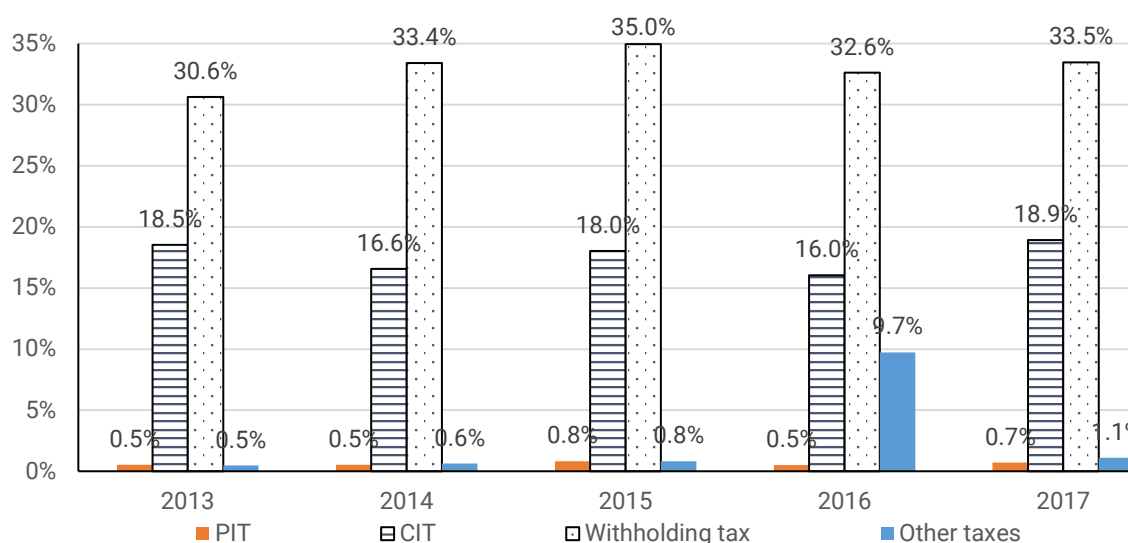
Source: adapted from DGT Performance Report Year 2017 (DGT, 2018b, p. 22); DGT Annual Report Year 2016 (DGT, 2017, p. 97); and DGT Annual Report Year 2014 (DGT, 2015a, p. 94).

Further details of the components of withholding tax are contained in Figure 2-14. The bottom layer represents the final tax on certain types of income (Final Income Tax). The taxes cover, but are not limited to, taxes on dividends received by a resident

personal income taxpayer, taxes on lease titles of land and/or buildings, taxes on transfers of land and/or buildings, and taxes on transactions in the stock market. The contribution of this tax has marginally increased from 8.6 per cent in 2013 to 9.7 per cent of total non-oil tax revenue in 2017.

The second layer in each column represents the tax on salaries and other payments to employees (Income Tax Article 21). Overall, it has contributed consistently in the range of 10 to 11 per cent of total tax revenue (excluding oil) during the period 2013-2017. The third layer represents the tax on import activities and specific products such as plywoods, steel, and automotive products (Income Tax Article 22). The contribution has been steady, ranging from 5.2 per cent in 2013 to 5.4 per cent of total non-oil tax revenue in 2017. The fourth layer represents the tax on services rendered to residents (Income Tax Article 23) such as consulting or management services. The contribution grew slightly, from 2.7 per cent in 2013 to 3.1 per cent of total tax revenue (excluding oil) in 2017. The final (top) layer is the tax on remittances to non-residents (Income tax Article 26) such as taxes on dividends, interests, and royalties. The contribution rose slightly from 3.4 per cent in 2013 to 4.6 per cent of total non-oil tax revenue in 2017.

Figure 2-14: Contribution of Indonesian Withholding Taxes to Tax Revenue
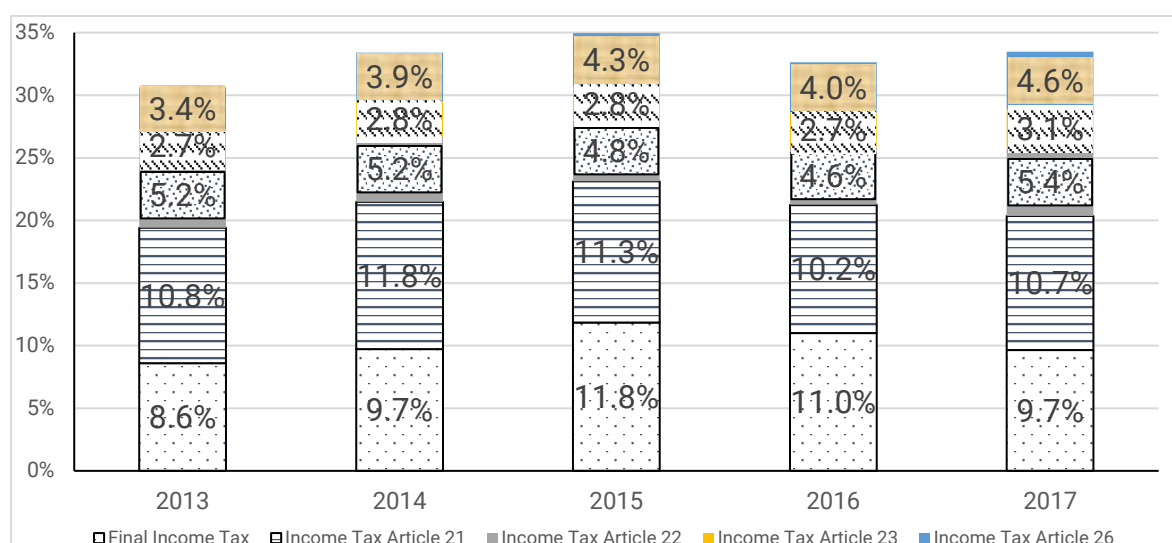
Source: adapted from DGT Performance Report Year 2017 (DGT, 2018b, p. 22); DGT Annual Report Year 2016 (DGT, 2017, p. 97); and DGT Annual Report Year 2014 (DGT, 2015a, p. 94).

For VAT, domestic demand contributed more to VAT revenue than VAT on imports during the period 2013-2017, reflected in the fact that domestic VAT recorded higher amounts than import VAT (Figure 2-15).

Figure 2-15: Contribution of Indonesian VAT to Tax Revenue (Excluding Oil)
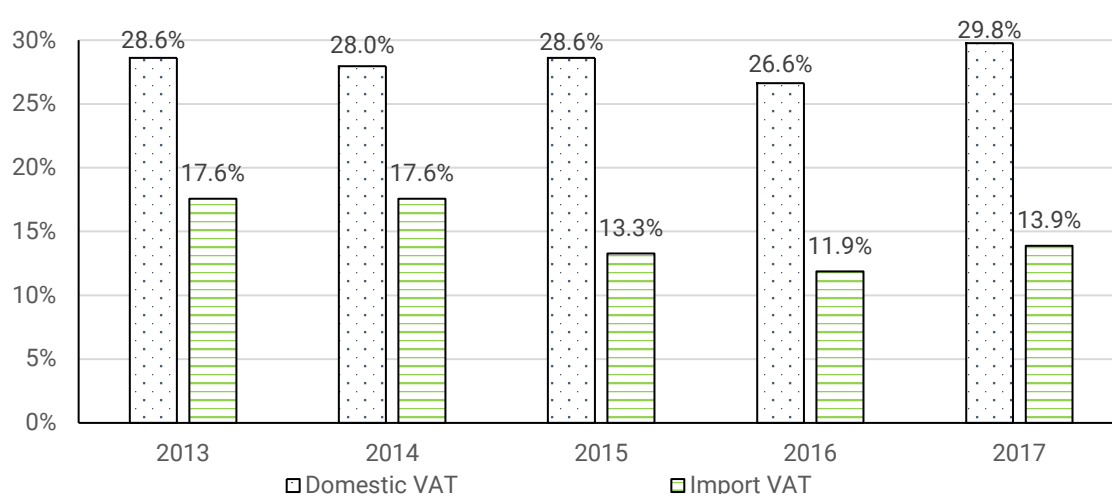
Source: adapted from DGT Performance Report Year 2017 (DGT, 2018b, p. 22); DGT Annual Report Year 2016 (DGT, 2017, p. 97); and DGT Annual Report Year 2014 (DGT, 2015a, p. 94).

Summing up, despite an overall increase in tax revenue collected, the growth rate of the prominent taxes has not significantly changed in recent years (Figure 2-12). The largest contribution to non-oil tax revenue comes from the withholding system taxes (Figures 2-13, 2-14, and 2-15). Despite the importance of this tax category, the contribution from it has not substantially increased over the five years 2013 to 2017 (76.8 per cent of total non-oil tax revenue in 2013 to 77.2 per cent in 2017).[10] Another concern is the limited revenue collected from self-employed personal income taxpayers as they have contributed the lowest level of tax payments of the various tax categories during the period 2013-2017 (0.5 per cent of total non-oil tax revenue in 2013 to 0.7 per cent in 2017), a situation which will be discussed further in the next section.

2.3.4. Tax Law

Article 23A of the 1945 Indonesian Constitution stipulates that all taxes and other levies for the needs of the state of a compulsory nature shall be regulated by law. The law is to be determined by at least a two-thirds majority vote in a collective meeting of the House of Representatives in Parliament. The policy and administration of central government revenues lie under the supervision of the Ministry of Finance and are executed by the DGT and the Directorate General of Customs and Excise (DGCE). While the DGCE focuses on two special jurisdictions only, namely customs and excise,

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[10] VAT is included in the category of withholding system taxes due to its feature of collection and remittance being carried out by the business entities who provide taxable goods and services (EY, 2011, p. 18).

the DGT has a broader tax management function which will be discussed later in this chapter.

According to the Constitution, an Act or law passed by the House of Representatives constitutes the second highest order of rule (behind the Constitution itself). For tax laws, the DGT performs its functions based on the General Provision Law, the Income Tax Law, the VAT Law, the Land and Building Tax Law (specific land and building tax in AFM sectors), and the Stamp Duty Law. These legislative provisions provide the framework for the taxes administered by the central government. The DGT, as a single tax authority in Indonesia, is entrusted to prepare and implement the taxation policy in accordance with the provisions of the legislation, e.g., through issuance of DGT decrees, ordinances and circular letters.

In addition to the central government, the regional governments are also entrusted with the responsibility for collecting their own revenues (Indonesia, 2009b). The administration of the regional governments takes place at two levels. The first is at the provincial level and the second is in the district/town level.

At the provincial level of government, taxes are levied for the most part in relation to motor vehicles including recurrent motor vehicle taxes and excises for transferring ownership of a motor vehicle, and motor vehicle tax. Provincial governments also impose surface water tax and cigarette tax to encourage environmentally friendly behaviour from citizens.

At the district/town government level, taxes are levied in relation to business activities such as conduct of hotel, restaurant, entertainment, advertising, parking, and swallows' nest (an edible birds' nest composed for the most part from glutinous material of birds' saliva and highly regarded as the "caviar of the east" (Marcone, 2005, p. 1125)) businesses, and street lighting tax is also levied. Furthermore, the district governments also tax non-metal minerals and ground water to prevent excessive extraction of those natural resources. Finally, rural and urban land and building tax, as well as the excise for acquiring rights on land and buildings, are also prominent sources of district government revenue.

Having established the constitutional and legal framework for the operation of the Indonesian tax system, the next section will focus on tax administration at the central government level.

2.3.5. Tax Administration

The DGT is an institution under the Ministry of Finance of Indonesia. It was established in 1924 in accordance with the Dutch *Staatsblad* 1924 No. 576 as *Djawatan Padjak* (Tax Institution). This law has since been amended several times, most recently with the Decree of Cabinet Presidium No. 75/U/KEP/11/1966 under which the revenue authority became *Direktorat Jenderal Pajak* (Directorate General of Taxes) (Manurung, 2014). The main mission of the DGT is to establish the fulfilment of an independent nation state with revenue collection built on good voluntary tax compliance and based on the impartial enforcement of the law (DGT, 2016). The DGT consists of one

headquarters unit and several operational units. While the headquarters unit carries out the functions of policy formulation and technical standardisation, analysis and organisational development, the operational units undertake the technical operations and/or technical support functions.

As one of the largest institutions in the Ministry of Finance, the DGT has 46,612 employees (DGT, 2020, p. 54). The headquarters is located solely in Jakarta and consists of the Secretariat of the Directorate General, 14 unit directorates, and four senior advisors (DGT, 2019b, pp. 5-7). Operational units located around the country within the DGT comprise the 34 DGT Regional Offices (Kanwil), the 352 Tax Offices (KPP), and 204 Service, Extension and Consultation units (KP2KP), as well as the five Technical Implementation Units (UPT).

As discussed in Section 2.3.1, the first bout of tax reform in 1983 revamped the tax administration and its operational system. Initially, following the 1983 reform, the DGT was organised based on the type of taxes collected, for example individual income tax, corporate income tax, VAT, land and building tax. The administration model based on the type of taxes was the earliest model of tax administration in Indonesia (OECD, 2004c, p. 13).

The DGT then encountered an emerging challenge when the Asian financial crisis occurred in 1997. As one of the countries most severely hit by the financial crisis (Head, 2010, p. 31; Ranta, 2017, p. 1), Indonesia faced the turmoil in 1998 of inflation skyrocketing and reaching 75 per cent, and GDP decelerating at 56 per cent compared

with the previous year (WB, 2018a). In response to these threats, the government actively sought to achieve a positive growth rate, curb the inflation rate, and achieve fiscal sustainability (Brondolo, Silvani, Borgne, & Bosch, 2008, p. 8). Tax revenue is a crucial element to achieve such goals, and hence the government had a high expectation that the DGT would collect as much revenue as possible. The optimism was reflected in a sharp increase in targeted tax revenue and full support to enhance its administration.

The tax reform carried out in 2002 addressed some critical issues in the organisational structure of the DGT. Brondolo et al. considered that the DGT was poorly organised with poor staffing management, had a lack of good legal and governance frameworks and obsolete information systems, often undertook futile law enforcement, and provided poor taxpayer service programs (Brondolo et al., 2008, pp. 14-16). The reform changed the then existing system to incorporate a more functional basis with the introduction of monitoring and consultancy sections or Account Representatives (AR) as the front office of the service. This new system also implemented tax office administration based on a market segmentation approach, based upon taxpayers' income (i.e. large, medium and small taxpayers' offices).

As a result of this reorganisation, as at 31 December 2016 the DGT consists of four large taxpayers' offices (all located in Jakarta), 28 medium taxpayers' offices (in Jakarta and other capital provinces), and 309 small taxpayers' offices. Hence, the organisation has adopted a primarily market segmented approach.

The main objective of implementing the market segment system was to concentrate on achieving targeted tax revenue by focusing on the most prominent contributing taxpayers (Parlaungan, 2017, p. 4). However, the new system also has its drawbacks. In particular, the DGT has less focus on small or low contribution taxpayers such as personal income taxpayers. This is reflected in the tax revenue from personal income taxpayers who have contributed less than 2 per cent of the total tax revenue during the period 2000-2015 (DGT, 2015b).

The chapter now considers in more detail the role of these personal income taxpayers in the Indonesian tax system.

2.3.6. Personal Income Taxpayers

The Indonesian tax system recognises four types of taxable persons for income tax purposes, namely personal income, undivided inheritance, entity, and permanent establishment taxpayers (Indonesia, 2008a). Each of these is dealt with in turn.

Personal income taxpayers, whether citizens or aliens, may be regarded as resident or non-resident depending on whether they have domiciliary status in Indonesia or they are present in Indonesia for more than 183 days.

Undivided inheritance is the term used to refer to those taxable persons who are substituting for those who have the right to inherit, the heirs/heiresses. The purpose

of designating an undivided inheritance as a form of taxable person is to allow the DGT to collect tax from them.

An entity is defined as a group of people and or capital that forms a single unit that either does or does not conduct business, including corporations, limited partnerships, state or local-owned enterprises in whatever name and form, firms, cooperations, cooperatives, pension funds, partnerships, associations, foundations, public organisations, social and political organisations, or any similar organisation, institution, permanent establishment, and any other form of entity.

A permanent establishment refers to an establishment used by an individual who does not reside in Indonesia or is present in Indonesia for not more than 183 days within any 12-month period, or by an entity which is not established or domiciled in Indonesia in the form of, among other things: a place of management; a branch; a representative office; an office; a factory; a workshop; a mining and extraction of natural resources establishment; a fishery, animal husbandry, farm, plantation or forestry establishment; a construction, installation or assembly project; an individual or entity involved in the activity of the furnishing of services; an individual or an entity acting as a dependent agent; and an agent or employee of an insurance company that is not established or domiciled in Indonesia if it collects premiums or insures risk in Indonesia.

The focus of this study is upon personal income taxpayers. Every individual who resides in Indonesia for more than 183 days within a period of 12 months or presents in Indonesia within a tax year and has the intention to live in Indonesia is deemed to

be a resident individual taxpayer. The obligation on a resident individual taxpayer whose income exceeds the non-taxable income threshold within a financial year is to register at a tax office and receive a Tax File Number (Indonesia, 2009a).

The latest brackets of the non-taxable income threshold for personal income taxpayers are summarised in Table 2-1. This threshold means that any individual who earns an income of less than IDR 54 million in a fiscal year will be exempted from income tax. In contrast, those who derive income above the threshold are required to register as taxpayers and submit tax returns for the current fiscal year and thereafter.

Table 2-1: Non-Taxable Income Threshold for Registered Personal Income Taxpayers

Taxpayers	Indonesian Rupiah (IDR)
Individual taxpayer	54,000,000
Additional for a married taxpayer	4,500,000
Additional for wife's income, accumulated with husband's income	54,000,000
Additional for each eligible dependant, maximum three dependants	4,500,000

Source: adapted from the Decree of Ministry Finance PMK-101/PMK.010/2016 applicable since the tax year 2016.

The tax system also recognises joint income between husband and wife. Unless the marriage officially stipulates income segregation, the combination of income between the husband and the wife will be taken into account as one entity. They are then entitled to an additional non-taxable income threshold.

The applicable tax rates for personal income taxpayers are set out in Table 2-2. The tax liability is determined by multiplying the taxable income by a progressive tax rate in accordance to the respective taxable income bracket.[11] For example: when one has a taxable income of IDR 100 million, then the tax liability would be: (5 per cent of IDR 50 million) + (15 per cent of IDR 50 million) = IDR 2.5 million + IDR 7.5 million = IDR 10 million. The tax liability must be paid before lodging the tax return. Thus, this sequence (paying the tax liability then lodging the tax return) is also applied in the survey instrument.

Table 2-2: Individual Income Tax Rate Brackets

Income Bracket (IDR)	Tax Rate (per cent)
<= 50,000,000	5
50,000,001 – 250,000,000	15
250,000,001 – 500,000,000	25
> 500,000,000	30

Source: adapted from the Tax Income Law Number 36 the Year 2008 applicable since 1 January 2009.

Indonesia acknowledges two types of personal income taxpayers. They are taxpayers with employment income and self-employed taxpayers. They both are required to lodge annual tax returns at the latest by 31 March of the subsequent year (Indonesia, 2009a). Where personal income taxpayers fail to meet the due date for filing the annual tax return, an IDR 100,000.00 penalty can be imposed for late lodging.

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[11] It is noteworthy that to calculate the taxable income, an individual taxpayer needs to reduce the total income by reference to relevant deductible expenses, together with a tax-free threshold (see Table 2-1).

Employed taxpayers have the advantage of simpler administration because the tax on their monthly income is withheld by their employer. Additionally, working taxpayers who generate income from other sources than from their employment must declare the income on a tax return and pay the due tax.

In contrast, self-employed taxpayers have more onerous administrative tasks, e.g. the responsibility to pay monthly instalment tax for the current year, to withhold and remit their employee income tax, and to maintain proper book-keeping. This, however, imposes more significant difficulties upon self-employed taxpayers since they often lack the resources, and management skills to cope with such requirements (Tambunan, 2011). Compared with their counterparts (employed taxpayers), who receive assistance from their employers in relation to tax matters, self-employed taxpayers might have to seek the services of tax advisers to comply with their tax requirements. Thus, it requires more effort for self-employed taxpayers to satisfy their tax liabilities.

Figure 2-16 compares the tax contribution from income tax under article 21 (tax withholding from employed personal income taxpayers) to that from monthly advance payments of tax instalments of personal income taxpayers (tax paid from self-employed personal income taxpayers). It reveals that on average the contribution from employed personal income taxpayers is 11 per cent of total tax revenue whereas from self-employed personal income taxpayers is merely 0.6 per cent. Hence, tax from employed personal income taxpayers contributes a much higher amount of tax than that from self-employed personal income taxpayers.

Figure 2-16: Comparison of Tax Contribution from Self-employed and Employed Personal Income Taxpayers
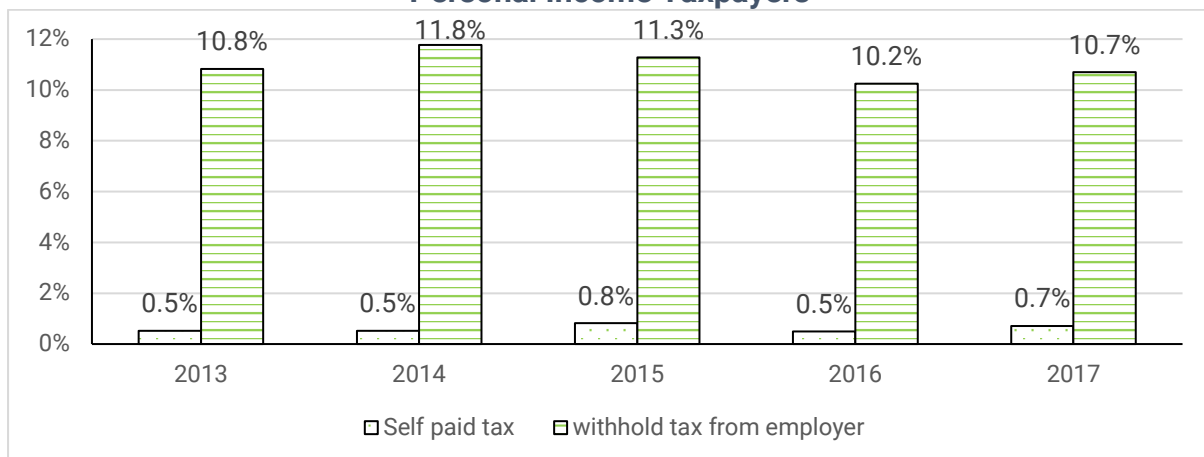
Source: adapted from DGT Performance Report Year 2017 (DGT, 2018b, p. 22); DGT Annual Report Year 2016 (DGT, 2017, p. 97); and DGT Annual Report Year 2014 (DGT, 2015a, p. 94).

Given that the focus of this thesis is upon the taxation of individual SMEs in Indonesia, the following section will further discuss their taxation along with a consideration of the rules applicable to such taxpayers.

2.4. Taxation of SMEs in Indonesia

In the previous section, it was noted that self-employed taxpayers may have difficulties in abiding by the tax law to calculate their tax liabilities and submit their tax returns without assistance. One of the hindrances self-employed taxpayers encounter in compliance is the ability to maintain proper book-keeping and records. The government is aware of this issue and has provided a concession for SMEs by introducing the "deemed net income" method of calculating their tax liability. This is a method to define net income by multiplying the annual gross income by a specific rate in accordance with the business sector of the SMEs (DGT, 2000). Taxpayers who are

eligible to apply this method only need to undertake simple record-keeping by calculating gross income. This policy is designed to help reduce the SMEs' burden for those who would otherwise have difficulty in maintaining proper book-keeping records.

In general, the law has defined the criteria for micro, small, and medium businesses since 2008. The criteria are outlined in Table 2-3.

Table 2-3: The Criteria of Micro, Small, and Medium Enterprises in Indonesia

ENTERPRISE	CRITERIA	
	NET ASSETS[12]	ANNUAL INCOME
micro	IDR 50 Million or less	IDR 300 Million or less
small	> IDR 50 M − 500 Million	> IDR 300 M − 2.5 Billion
medium	> IDR 500 M − 10 Billion	> IDR 2.5 − 50 Billion

Source: adapted from the Micro Small and Medium Enterprises Law No. 20 Year 2008 (Indonesia, 2008b).

Despite these criteria, not all SMEs are entitled to take advantage of the simplified record-keeping for tax purpose. Prior to the issuance of GO-46/2013, the DGT specified that only those individual SMEs whose annual turnover was below IDR 600 million could use the simplified record-keeping procedure (DGT, 2000), applicable from the fiscal year of 2001. The threshold (IDR 600 million) then increased to IDR 4.8 billion from 1 January 2016 (DGT, 2015c). During the period 2001-2016, however, there was a significant change with the introduction of the GO-46/2013 in 2013. Following the enactment of GO-46/2013, all micro and small businesses (as defined in Table 2-3) are automatically enrolled in the presumptive tax regime. Medium businesses face

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[12] Excludes land and building used for business operations.

two possibilities: those whose annual income is up to IDR 4.8 billion must apply the presumptive tax regime, and those with annual income above IDR 4.8 billion must organise full book-keeping and are subject to the conventional tax rates regime (Table 2-4).[13]

Table 2-4: **Tax Rate Applied for MSM Enterprises in Accordance with GO-46/2013**

Enterprise	Presumptive tax rate	Conventional tax rate
Micro	Yes	No
Small	Yes	No
Medium annual income up to IDR 4.8 Billion	Yes	No
Medium annual income > IDR 4.8 − 50 Billion	No	Yes

In addition to the income threshold, some business income received or earned by individual taxpayers from services in relation to independent work is not eligible for the presumptive tax regime. Examples of such independent workers are those who work as attorneys, accountants, architects, physicians, consultants, notaries, authors, researchers, and translators.

After the implementation of GO-46/2013, record-keeping for those in the presumptive tax regime became simpler. Individual SMEs do not need to calculate their income tax liability using the deemed net income method. They could instead pay income tax liability directly based upon 1 per cent of their gross monthly income.

Inevitably the introduction of this presumptive tax regime in 2013 has had different implications for SMEs in the various categories. On the one hand, the application of

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[13] Based on author's elaboration on Law No. 20 Year 2008 and GO-46/2013.

this rule ensures simplicity for taxpayers in compliance. On the other hand, it imposes a substantial burden on those who record financial losses, because they still need to pay tax, regardless as to whether the business yields a gain or records a loss. Furthermore, for individual SMEs whose businesses (such as a traditional grocery store) have a slight profit margin, the businesses are not sustainable should they have to pay tax at a 1 per cent rate. Finally, the presumptive tax regime does not encourage taxpayers to learn and apply a book-keeping system, by specifying only the gross income for identifying their tax liability.

To mitigate these issues, the government then amended the regulation by issuing Government Ordinance GO-23/2018 on 8 June 2018 (Indonesia, 2018a). Several changes impacted upon the taxation of SMEs after this regulation was introduced. First, the amendment reduces the presumptive tax rate from 1 per cent to 0.5 per cent. Secondly, the rule permits taxpayers to choose either the presumptive tax regime or the conventional tax regime. Finally, it regulates a maximum of seven years for individual SMEs to stay within the presumptive tax regime from the time of enactment of this rule (for current taxpayers) or from the first time registered as taxpayers (for new taxpayers). The government considers that seven years is a sufficient period for the taxpayers to learn to manage their tax matters and then apply the conventional tax regime thereafter.

Table 2-5 shows the timeline reflecting these changes from 2001 to 2018 for individual SMEs.[14]

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[14] Based on author's elaboration on Decree of the DGT No. 536 Year 2000, GO-46/2013, DGT ordinance

Table 2-5: Timeline of Simple Record-keeping for Individual SMEs

Date	Note
1 January 2001	Self-employed personal income taxpayers whose annual turnover < IDR 600 million may opt to use the deemed net income method
1 July 2013	Self-employed personal income taxpayers whose annual turnover < IDR 4.8 billion must use the presumptive tax regime
1 January 2016	Self-employed personal income taxpayers whose annual turnover < IDR 4.8 billion may choose to apply the deemed net income method
1 July 2018	Self-employed personal income taxpayers whose annual turnover < IDR 4.8 billion may choose to apply the presumptive tax regime

The details above concern the income tax of individual SMEs. For VAT, another distinction arises between those whose annual turnover is below IDR 4.8 billion and those who exceed the threshold. Those below the threshold are exempted from VAT (DGT, 2014); those whose annual turnover is on or above the threshold must register as entrepreneur taxpayers and abide by the VAT obligations. The obligations are not only withholding the VAT payable, but also submitting the VAT deposit when the VAT output (selling taxable goods or providing taxable services) is greater than the VAT input (purchasing taxable goods or receiving taxable services), and reporting the VAT calculation in the VAT return (Indonesia, 2009c).

2.4.1. Conventional Tax Regime

No. 17 Year 2015, and GO-23/2018.

To provide a better comparison, the following paragraphs will provide an illustration of the taxation of SMEs before and after the implementation of GO-46/2013.

Figure 2-17 highlights the taxation of individual SMEs prior to GO-46/2013 and illustrates the application of the deemed net income method. Before the implementation of GO-46/2013, where individual SMEs had annual turnover that was below the threshold (Table 2-5) and they did not have the capability to maintain proper book-keeping records, they needed to calculate net income through the deemed net income method. Then, any net income above the non-taxable income threshold (Table 2-1) would be taxed. Finally, to find the tax liability, taxpayers then multiplied the taxable income by the conventional tax rate (Table 2-2).[15]

Figure 2-17: Taxation of Individual SMEs Before GO-46/2013: Applying the Deemed Net Income Method
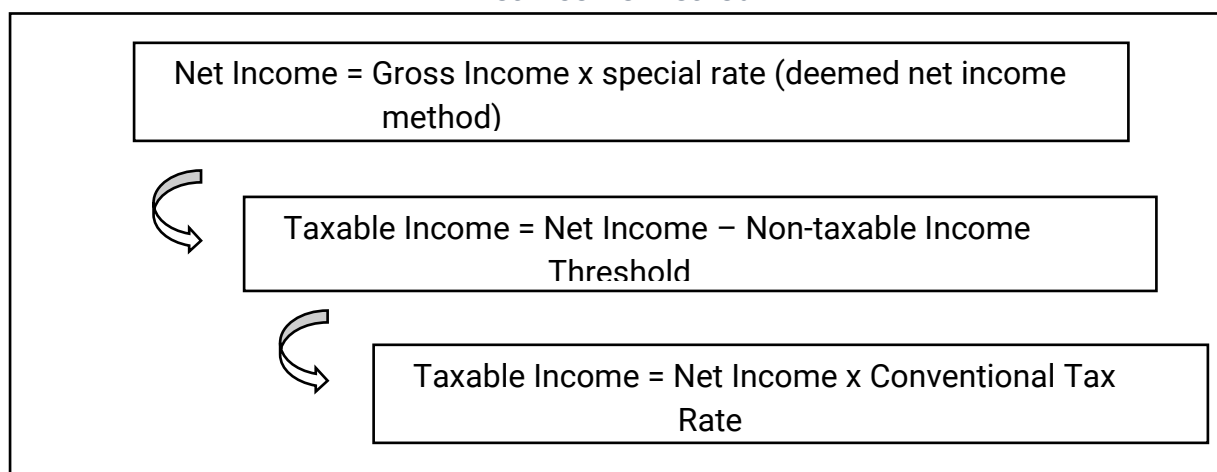
The following example illustrates this.

Example 1:

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[15] Based on author's elaboration on Law No. 16 Year 2009 and DGT decree No. 536 Year 2000.

Andi, married with one child, in the fiscal year 2010 is running a family restaurant. He does not understand book-keeping; however his record shows that his annual turnover in that year is IDR 300 million. For tax purposes, he chooses to apply the deemed net income method.

The non-taxable income threshold for a married person with one child in 2010 is IDR 18,480,000 and the deemed net income method for restaurants involves a 20 per cent factor (DGT, 2000).

- Net Income = 20 per cent of IDR 300,000,000 = IDR 60,000,000;

- Taxable Income = IDR 60,000,000 − IDR 18,480,000 = IDR 41,520,000;

- Tax Liability = 5 per cent of IDR 41,520,000 = IDR 2,076,000.

Based on the tax liability in the fiscal year 2010, Andi must submit advance payments of tax instalment = IDR 2,076,000 / 12 = IDR 173,000 every month in the fiscal year 2011.

Prior to 2013, for individual taxpayers whose annual turnover was greater than the threshold, they were required to keep appropriate book-keeping records. First, the gross income was derived by the deduction from gross sales of the cost of goods sold. Then, gross income was reduced by the administrative and selling expense to obtain the net income. Later, taxable income was defined by net income minus the non-taxable income threshold. Finally, tax payable was calculated by multiplying the taxable income by the conventional tax rate (see Figure 2-18).[16]

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[16] Based on author's elaboration on Law No. 16 Year 2009 and Law No. 36 Year 2008.

Figure 2-18: Taxation of SMEs Using Full Book-keeping
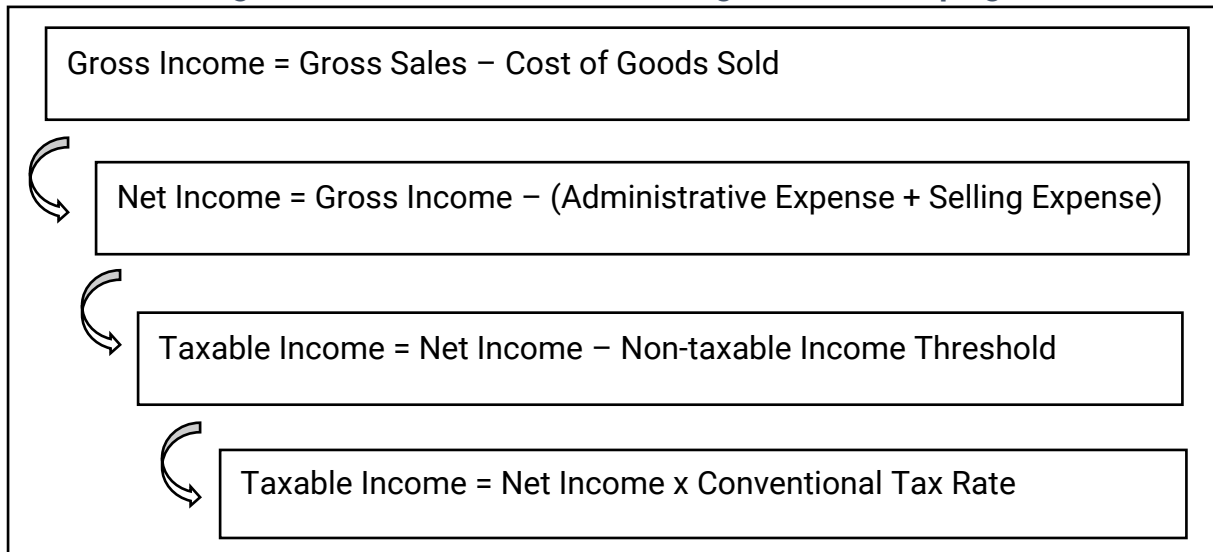
The following example illustrates this.

Example 2:

Budi, married with three children, in the fiscal year 2016 has three retail stores with the total annual turnover IDR 5 billion. According to his accountant, his cost of goods sold, administrative expense, and selling expense in that year are IDR 3.9 billion, IDR 500 million, and IDR 600 million respectively. His wife is working as a dress designer and earns an annual income of IDR 200 million.

Budi and his wife have no prenuptial agreement and thus all the income is considered as joint income in the current year. The non-taxable income threshold for a married man, combined with a working spouse, and three dependants in 2016 is IDR 126 million.

- Gross Income = IDR 5.2 billion − IDR 3.9 billion = IDR 1.3 billion;
- Net Income = IDR 1.3 billion − IDR 1.1 billion = IDR 200,000,000;
- Taxable Income = IDR 200,000,000 − IDR 126,000,000 = IDR 74,000,000;

- Tax Liability = (5 per cent of IDR 50,000,000) + (15 per cent of IDR 24,000,000)

  Tax Liability = IDR 6,100,000

Based on the tax liability in the fiscal year 2016, Budi must submit advance payments of tax instalment = IDR 6,100,000 / 12 = IDR 508,333 every month in the fiscal year 2017.

Another example illustrates the application of the conventional tax regime related to incomes earned by individual taxpayers from independent work.

Example 3:

Beni, married with three children, in the fiscal year 2020 worked as an independent accountant and derived a total annual turnover IDR 4.2 billion. He also recorded total expenses of IDR 3.5 billion in the respective year. His wife is working as a full-time housewife; hence the family has no additional income.

The non-taxable income threshold for a married man with three dependants in 2020 is IDR 72 million.

- Net income = IDR 4.2 billion − IDR 3.5 billion = IDR 700 million;
- Taxable Income = IDR 700 million − IDR 72 million = IDR 628 million;
- Tax Liability = (5 per cent of IDR 50 million) + (15 per cent of IDR 200 million) + (25 per cent of IDR 250 million) + (30 per cent of IDR 128 million)
- Tax Liability = IDR 133.4 million.

Based on the tax liability in the fiscal year 2020, Beni must submit advance payments of tax instalment = IDR 133.4 million / 12 = IDR 11,116,667 every month in the fiscal year 2021.

2.4.2. Presumptive Tax Regime

Figure 2-19 illustrates the simplicity of the presumptive tax regime. By multiplying gross income by the presumptive rate, individual SMEs automatically obtain their tax liability.[17]

Figure 2-19: Taxation of SMEs After GO-46/2013
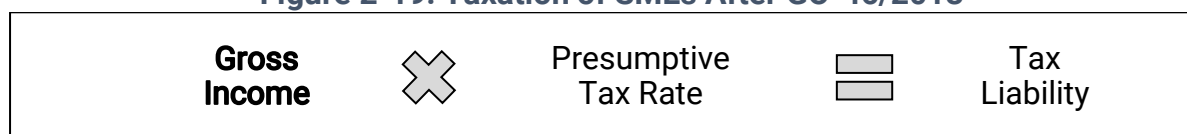
The following example illustrates this.

Example 4:

Cokro, married with five children, continues his father's business in car repairing. He records an annual turnover of IDR 4.2 billion in the fiscal year 2017.

- Tax liability = 1 per cent of IDR 4.2 billion = IDR 42 million

The calculation of tax liability in the fiscal year 2017 has no effect on tax liability in the following fiscal year. Cokro submits a monthly tax payment in accordance with his

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[17] Based on author's elaboration on Law No. 16 Year 2009 and GO-46/2013.

income. For January to June 2018 this is 1 per cent of his gross income, and for the subsequent six months it is 0.5 per cent of his gross income.

It is worthwhile to compare Cokro's tax liability under the presumptive regime with that under the conventional tax regime. If the conventional tax regime were applied and Cokro chose the deemed net income method (assuming the car repairing entails a 17.5 per cent factor and the non-taxable income threshold for a married man, spouse earning no additional income, and maximum three dependants in 2017 is IDR 72 million):

- Net Income = 17.5 per cent of IDR 4.2 billion = IDR 735 million;

- Taxable Income = IDR 735 million − IDR 72 million = IDR 663 million;

- Tax Liability = (5 per cent of IDR 50 million) + (15 per cent of IDR 200 million) + (25 per cent of IDR 250 million) + (30 per cent of IDR 163 million)

  Tax Liability = IDR 143.9 million

Based on the tax liability in the fiscal year 2017, Cokro must submit advance payments of tax instalment = IDR 143.9 million / 12 = IDR 11,991.667 every month in the fiscal year 2018.

To conclude, the differential taxation of SMEs is highlighted in Figure 2-20. It displays a simple flowchart to provide a better understanding of the current taxation of individual SMEs in Indonesia.[18]

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[18] Based on author's elaboration on Law No. 16 Year 2009, and GO-23/2018.

Figure 2-20: Flowchart Taxation of Individual SMEs in Indonesia (Current)
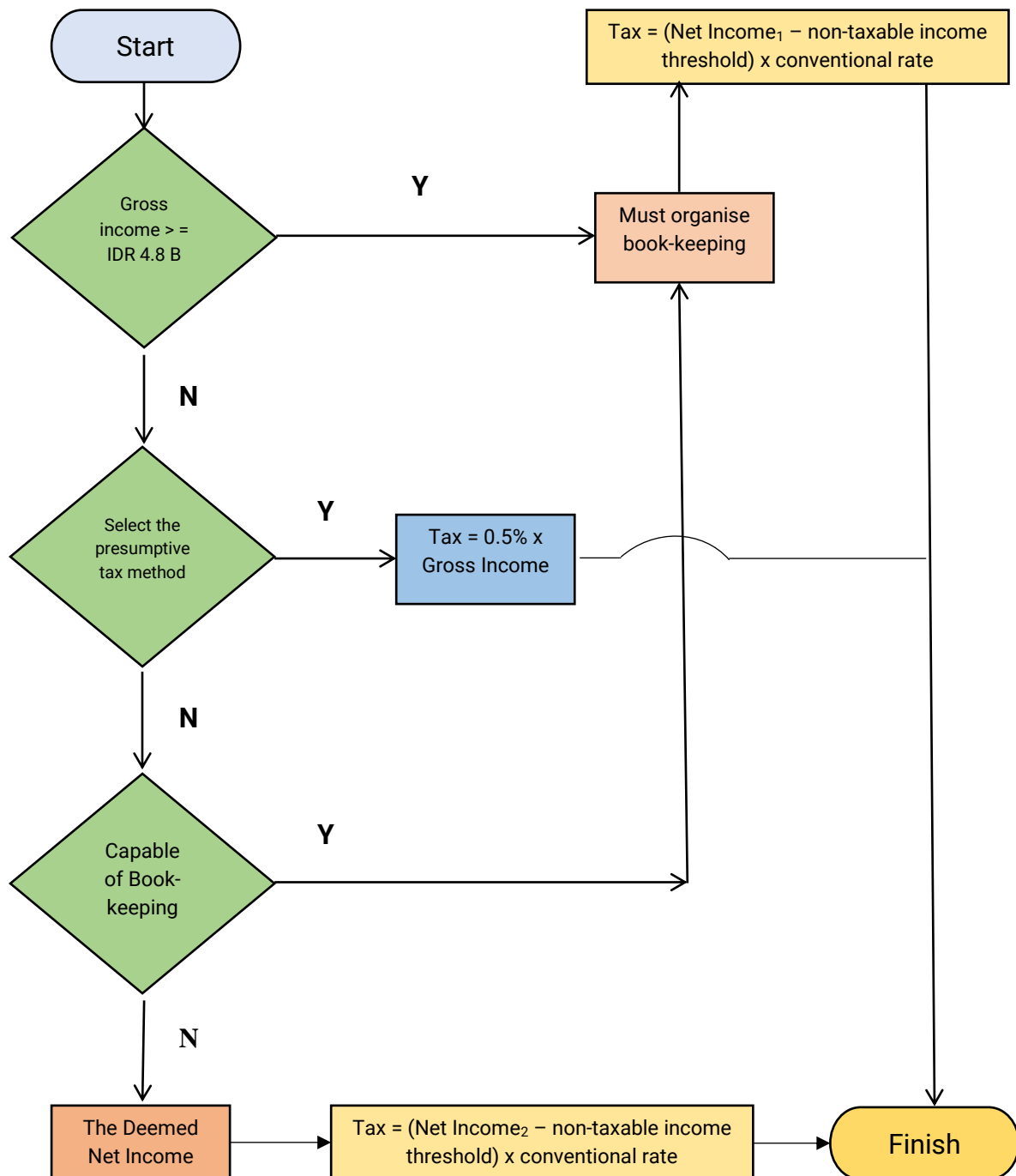
Net Income$_1$ = Net income from book-keeping

  = (Sales − Cost of Goods Sold) − (Administrative expense + Sales Expense)

Net Income$_2$ = Net income from simple record-keeping (the deemed net income method)

  = Gross sales x specific rate (according to business type)

2.4.3. Other Taxes on Personal Income Taxpayers

In addition to income tax and VAT, there are various withholding taxes which give rise to an administrative burden for individual SMEs. Even though the incidence of the taxes lies on the income recipient, the tax law requires taxpayers to withhold the tax from the source (see the complete description of withholding taxes in Indonesia in Section 2.3.3). The following are withholding taxes that are relevant to individual SMEs.

First, the most notable withholding tax is income received by employees (income tax article 21) such as Pay As You Earn (PAYE) and National Insurance (NI) payments. The responsibility to withhold PAYE tax arises when individual SMEs hire employees and provide remuneration above the non-taxable income threshold. Secondly, individual SMEs may secure services or consultations from external parties which are the object of income tax article 23. For example, when individual SMEs employ tax advisers or public accountants to assist in their tax or book-keeping issues, they must withhold income tax article 23 from the payment for the service rendered. Finally, individual SMEs might rent land and buildings to run their business. In that sense, they must withhold a final income tax from the rental fee charged.

Another two central government revenue sources are the stamp duty and land and buildings tax in the AFM sectors.[19] Stamp duty is simply imposed on written

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[19] In contrast with the land and buildings tax for residents in rural and urban areas which are under the supervision of district/town governments, land and buildings tax in the AFM sectors is still under the management of the central government due to its significant contribution to the revenue.

documents including deeds, conditions, and confirmations for a single party and/or multiple parties (Indonesia, 1985, p. article 1), whereas land and buildings tax in the AFM sectors is the only central government tax that still adopts official assessment. Due to these intrinsic features, these two taxes arguably impose a lower compliance burden than other taxes. Thus, these two taxes are excluded from this study.

Summing up, this study focuses on compliance costs of the income tax (including withholding tax), and VAT (including the sales taxes on luxury goods).

2.5. Conclusion

This chapter has focused on three central components of the background of the study. First, some important general information about Indonesia and its economic features were discussed in Section 2.2. Section 2.3 then explained the structure of the Indonesian tax system, and specifically considered the contributions of major types of taxes to the government revenue. The taxes levied by the various levels of government in Indonesia, central, provincial, and district, were introduced. The section concluded by highlighting the tax administration and the laws that apply to individual SMEs. Finally, and to provide a better comparison of taxation of SMEs prior to and post the enactment of GO-46/2013, Section 2.4 illustrated the operation of the presumptive tax regime and the conventional tax regime applicable to individual SMEs.

Chapter 3 will next provide a review of the literature relevant to the research question of this thesis in order to establish the knowledge gaps that this study seeks to address.

Chapter 3: **LITERATURE REVIEW**

3.1. Introduction

The prior chapter identified the fundamental components of the Indonesian tax system and the taxation of individual SMEs, as the necessary background to the discussion of their tax compliance costs in Indonesia. To identify and establish a better understanding of the relevant elements of the tax compliance costs of individual SMEs, which are the focus of this research, this chapter provides a review of the relevant major contributions to the literature in this field.

First, the concepts and literature relating to tax administrative costs and tax compliance costs are analysed in Sections 3.2 and 3.3 respectively. Important conceptual issues relating to tax compliance costs, including boundary definitions, composition, measurement, and determinants, and influential empirical findings from prior research, are elaborated in Section 3.3.1. Furthermore, the empirical studies which establish the tax compliance costs literature are highlighted in Section 3.3.2. The specific tax compliance costs of SMEs and the psychological costs are then highlighted in Sections 3.4 and 3.5 respectively. Section 3.5 proceeds to establish the unexplored topics of tax compliance costs – the gap in the literature – which this study seeks to address. Finally, the chapter concludes in Section 3.6.

While the scope of the thesis is confined to tax compliance costs, it may be useful to start more broadly with the costs of taxation overall. A common approach among

some tax researchers (see, for example, Pope, 2000, p. 5) is to distinguish between three mutually exclusive and collectively exhaustive categories of taxation, namely, tax payments, operating costs, and efficiency costs.

To establish the basis of this study, Figure 3-1 highlights the composition of the costs of taxation in the broadest sense, identifies the related components, and provides further details of those components that are the focus of this study. Pope argued that the costs of taxation consist of three components: the amount of tax payment itself;[20] the efficiency costs; and the operating costs (Pope, 2000, p. 5).

Figure 3-1: The Costs of Taxation
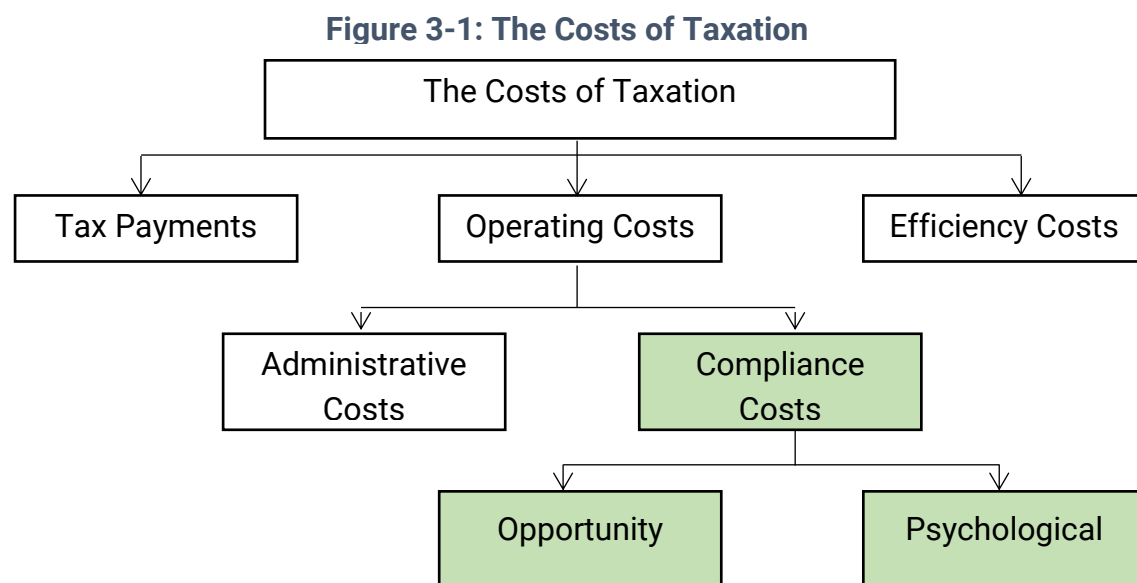
Source: adapted from "The administrative and compliance costs of international taxation: an introduction for research students" (Pope, 2000, p. 5).

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[20] Despite being perceived as burdens, tax payments are crucial for state-building: to support the fundamental responsibilities of an effective government and establish a foundation for economic growth (Bräutigam, 2008, pp. 1-2; Prichard, 2010, p. 3). By applying a robust tax system and sound public policy, governments utilise tax payments to foster development and generate benefits for the public (Besley & Persson, 2014, p. 100). Thus, it is not appropriate or correct to categorise tax payments as costs of taxation.

The amount of the tax payment requires no further elaboration. Efficiency costs are, broadly, the losses that occur when taxpayers change behaviour as a result of the tax burden, such as through evasion, avoidance, and substitution to other products taxed at lower rates (Slemrod & Yitzhaki, 1996, p. 173). This thesis is not concerned with either the amount of the tax payment or the efficiency costs. Rather, its focus is on a specific aspect of the operating costs of the tax system. Operating costs comprise administrative costs, which are the costs measured in running and administering a tax system, and compliance costs, which comprise the opportunity and psychological costs incurred by taxpayers in complying with their tax obligations.

A problem with the categorisation of costs of taxation is the inconsistent perspectives from which these costs are perceived. More specifically, tax payments are a cost from the taxpayer's perspective whereas operating and efficiency costs are costs from the social perspective. Taking the social perspective, tax payments represent costs to taxpayers but revenue to the government which uses tax revenue to finance essential goods and services. It is not inconceivable that one dollar in tax payment may provide more than one dollar in benefit to the population.

Thus, in the public finance literature, only two costs of taxation are recognised, namely, operating costs and efficiency costs (Stiglitz, 2000, pp. 456-465; Stiglitz & Rosenberg, 2015, pp. 512-519). As noted above, efficiency costs occur when taxpayers (individuals, firms, etc) can alter their behaviours as a result of taxation. These costs include both the losses due to the substitution effect (assuming that the taxpayers are compliant) and the social losses due to tax evasion and avoidance (Alm, 1988; Chetty,

2009; Feldstein, 1999; Slemrod & Yitzhaki, 2000, 2002). Operating costs refer to the value of resources expended by the society in raising tax revenue. They typically consist of tax administrative burden (borne by the public sector) and tax compliance burden (borne by the taxpayers).

Before proceeding further, it is useful to note that tax compliance burden can be regarded as costs of taxation in two different ways. First, and apparently, tax compliance costs indicate the value of productive resources that taxpayers have to expend to comply with their tax obligation. Secondly, and more subtly, tax compliance burden may give rise to a negative distributional impact. More specifically, if tax compliance burden is indeed regressive, as will be discussed later in Section 3.3, then it may reduce the overall progressiveness of the tax system (Tran-Nam, 2001a, p. 65). Before considering that issue, however, it is necessary to explain in further detail the nature of tax administrative costs.

3.2. Tax Administration Costs

There is a conceptual difference between tax compliance costs and tax administrative costs.[21] Both costs are components of the operating costs of the tax system (Evans, Ritchie, Tran-Nam, & Walpole, 1997, p. 3); the principal difference between the costs lies in the formal incidence of the costs. Compliance costs are incurred by taxpayers

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[21] Stiglitz has argued that tax administrative costs comprise direct costs – the costs of administering the tax revenue authority and indirect costs – the costs incurred by taxpayers (Stiglitz, 2000, p. 464; Stiglitz & Rosenberg, 2015, p. 517).

or the private sector whereas administrative costs are incurred by the public sector, despite the fact that ultimately taxpayers will carry the burden.

According to Allers, tax administrative costs can be defined as the public costs to run the taxation system (Allers, 1994, p. 19). Similarly, Sandford and co-authors have defined tax administrative costs as the sum of public sector costs of a specific tax which would not have been borne if the tax did not exist, or alternatively the public sector costs which were incurred because of the enactment of the tax (Sandford et al., 1989, p. 3). Despite perceived similarities, these two measures will not necessarily produce the same estimation in the short term. For example: when a new tax law is introduced, administrative costs arise; whereas the annulment of the previous law would not save all costs relating to writing-off of equipment associated with that law. These two measures, however, would be identical over the longer term (Sandford et al., 1989, p. 3).

As noted by Sandford et al. (Sandford et al., 1989, pp. 5-9), the scope of tax administration costs can be very wide. Perhaps the best way to define tax administration costs is to consider how a tax system operates. In general, Tran-Nam has identified five activities (and the respective organisations involved in the case of Australia) in the operation of a modern tax system (Tran-Nam, 1999b, pp. 511-512): (1) tax policy design and planning by the federal Treasury; (2) tax law drafting and enactment by the Office of Parliamentary Counsel; (3) administering the tax system by the Australian Taxation Office (ATO); (4) compliance with the tax structure, not only by taxpayers (including non-profit organisations) but also by various government

institutions such as the federal, State, and local governments; and (5) tax dispute resolution, not only by the ATO but also by the Administrative Appeals Tribunal (AAT), the Federal Court, and the High Court.

Each of the above activities incurs costs (and potentially benefits). Apart from tax compliance, the costs of all other activities are borne by the public sector. The most recognisable public sector costs would be those incurred by the authority which collects tax revenue, such as salaries or wages, supplies or equipment, and accommodation. However, these costs are not the only public sector costs of the tax system. They should also include the costs of ratifying tax laws or proposing tax law reform, occurring outside the tax department, i.e., the legislation in parliament or tax policy planning by the treasury. Furthermore, when proposing the tax law, the legislature may invite a series of experts from other departments to assist in designing the law. Moreover, administrative costs should also include the costs of the tax dispute system (Evans, 2003a, p. 69) including pre-litigation costs and the costs of litigation in tribunals and courts including the costs of experts and witnesses. Thus, the broadest definition of tax administration costs would include costs of tax policy and planning, tax law drafting and enactment, tax collection and enforcement, and tax dispute resolution.

Again, as noted by Sandford et al. (1989, p. 5), however, such a broad definition of tax administration costs is not practical. It would be impossible to measure such a broad cost with any degree of certainty. For operational reasons, it is necessary to adopt a narrower and more focused approach to defining tax administration costs. In most

empirical studies (Bertolucci & Nascimento, 2006; Dziemianowicz, 2017; Jrbashyan & Harutyunyan, 2006; Vaillancourt, Roy-César, & Barros, 2013; Vitek, Pavel, & Krbova, 2004), it is conventional to define tax administration costs as the costs incurred by the tax administrators in enforcing tax laws and collecting tax revenue. This convention is adopted in the present study.

Another problematic issue which may impact upon administrative costs is the costs of interest-free loans in effect given by the government to the private sector through the application of certain tax provisions. These costs arise when taxpayers or third parties are able to withhold tax remittances such as VAT/ GST or employee income tax withheld under PAYE and NI. They then hold the tax payment for a grace period before remitting it to the state treasury account. Measurement of these costs can be impractical given the difficulty in obtaining and analysing the data from numerous taxpayers with various tax payment dates.

Summing up, delimitation is needed to establish the relevant components of administrative costs. Sandford et al. suggest that administrative costs should be limited only to the public costs of administering an existing tax law (1989, p. 5), hence excluding the costs of enacting a new tax law and dispute resolution. Despite the common practice of limiting the administrative costs to the costs that are relevant to administering the tax revenue department due to data availability, Evans argues that the costs of legislative and judicial activities should be included especially when the government publishes the relevant data (2008, p. 451).

3.3. Tax Compliance Costs

Like administrative costs, the definition of tax compliance costs has been the source of considerable debate.[22] Many scholars consider the term to be ambiguous (Evans et al., 1996; Sandford et al., 1989), giving rise to many interpretations related to its definition, the relevant components, and method of assessing such costs. At one earlier stage, four decades ago, tax compliance costs were even misinterpreted by most observers as including the costs of securing compliance (or the enforcement costs) (Sandford, 1995c, p. 1).

Despite considerable debate, some consensus has emerged relating to the definition of the costs. One seminal study by Johnston provides a comprehensive definition of corporation tax compliance costs as the decrease in the corporation's operating costs, excluding the tax, as a consequence of the federal income tax law being abolished (1963, p. 5). In line with Johnston, Sandford (1995c, p. 1) extends the definition of tax compliance costs by reference to three key elements, namely those costs: (1) incurred by taxpayers in complying the tax law and related obligations; (2) which are outside tax payment and efficiency costs; and (3) which would disappear if the tax law were not to exist. Thus, it is safe to assume that all costs disbursed by taxpayers or third parties in complying with tax laws and tax-related obligations are tax compliance costs.

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[22] It is noteworthy that given that the literature has provided a long list definitions of tax compliance costs (Marneffe & Vereeck, 2011, p. 342), some studies have adopted different terms. For example, one study in relation to South American countries refers to tax compliance costs as the tax transaction costs (UN, 2014) whereas another study in the context of European Union countries applies the concept of tax administrative burdens (Ravšelj, Kovač, & Aristovnik, 2019).

Tax compliance costs would thus certainly include the costs in accumulating adequate knowledge to meet the tax regulations, compiling necessary documents and filling in data to complete the tax return, paying service fees to professional tax consultants, paying salary or wages to employees working on tax matters, and disbursing overhead costs of stationery, electricity, postage, communication and transportation to the tax office.

In contrast, there has been debate related to the costs of non-compliance (incurred when taxpayers illegally attempt to minimise their tax liabilities, such as through bribes or private payments to tax officers) (Chattopadhyay & Das-Gupta, 2002; Pashev, 2008) and lobbying for tax changes (disbursed when individuals and businesses legally attempt to propose changes to the tax system). Despite an inclination to exclude such costs (Yesegat, 2009, pp. 19-20), the considerations in relation to those costs are finely balanced and multi-layered.

First, while the payment of a bribe to minimise tax liabilities is clearly not a compliance cost, some tax-related costs are not always so straightforwardly characterised, especially in developing countries.[23] For example, a taxpayer might urgently need a certain document processed in a tax office. While a written rule may stipulate that the processing time is three days, the taxpayer may offer money to expedite the process so that the document could be obtained in less than three days. In these

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[23] Despite corruption occurring worldwide, developing countries tend to suffer more red tape problems, and a perception that bribery is necessary to lessen the bureaucratic burden is more common in developing countries (Campos & Dimova, 2010; Kaufmann & Wei, 1999).

circumstances, it is certainly debatable whether such costs should be included in any measure of tax compliance costs.

In the case of lobbying costs, logically private firms expect greater returns for spending money to receive favourable policy from the government (Fichtner & Feldman, 2013; Quinn & Shapiro, 1991; Richter, Samphantharak, & Timmons, 2009). Despite the fact that the expenditure may be reasonable from the narrow perspective of the firms that expend the costs, it reduces some of the gains to the beneficiaries and creates inefficiencies for society (Robson, 2005, p. 4). Thus, it does not generate any benefit for the economy from a greater perspective (D. R. Henderson, 2008).[24] Therefore, the lobbying costs would fall within the definition of efficiency costs and be beyond the scope of this study.

Another complex issue that has emerged from the literature is the overlapping of compliance costs with efficiency costs. This occurs due to the lack of clarity as to where the boundary between compliance costs and efficiency costs lies (Sandford et al., 1989, p. 9). For example, a business might reduce its economic activity to a certain level below the minimum threshold to avoid VAT registration. This measure could lead to more distortions in society such as availability of goods becoming more limited and access to such goods becoming more difficult. The scarcity then would force customers to purchase the products from another place and hence incur more costs. Thus, it is impractical to assess such costs due to the problematic issue of making

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[24] Lobbying costs are a current example of rent-seeking costs: the costs to obtain special privileges from the government without creating added value to the economy (Bhagwati, Brecher, & Srinivasan, 1984; A. O. Krueger, 1974; Tullock, 1967, 1980, 1998, 2003).

this delineation. In short, the above costs are not included in compliance costs because of the intrinsic element (efficiency) of those costs.

Notwithstanding these complex definitional issues relating to tax compliance costs, there are some elements of consensus about the actual composition of such costs. The next section briefly explores that composition.

3.3.1. The Composition of Tax Compliance Costs

Tax compliance costs can be broadly classified into two types of costs: opportunity and psychological. Opportunity costs refer to the utility of the economic resources to comply with tax law. The opportunity costs include: (1) explicit costs, which refer to direct costs in the form of either payment to purchase tax advisory services or remuneration to employees who assist in tax matters; (2) implicit costs, which refer to the value of the time spent to complete the tax activities; and (3) incidental costs, which refer to the costs of equipment, stationery, postage, telephone, travel, etc incurred in complying with tax obligations. Psychological costs refer to the vexation, anxiety, stress, and frustration experienced when complying with tax law. In contrast to opportunity costs, psychological costs are more problematic to assess (Tran-Nam et al., 2014, p. 143) due to the difficulty in measuring and quantifying the costs. Figure 3-2 highlights the composition of tax compliance costs in more detail.[25]

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[25] Based on author's elaboration of compliance costs of taxation (Sandford et al., 1989).

Figure 3-2: Components of Tax Compliance Costs

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                    ┌─────────────────────────────┐
                    │    Tax Compliance Costs      │
                    └─────────────────────────────┘
                               │
              ┌────────────────┴────────────────┐
              ▼                                  ▼
   ┌─────────────────────┐          ┌─────────────────────┐
   │   Opportunity:      │          │   Psychological:    │
   │   quantifiable      │          │   unquantifiable    │
   └─────────────────────┘          └─────────────────────┘
              │
   ┌──────────┼───────────────────────┐
   ▼          ▼                       ▼
┌──────────┐ ┌──────────┐      ┌──────────┐
│ Explicit:│ │ Implicit:│      │Incidental│
│  money   │ │  time    │      │ overhead │
│ payment  │ │  spent   │      │          │
└──────────┘ └──────────┘      └──────────┘
```
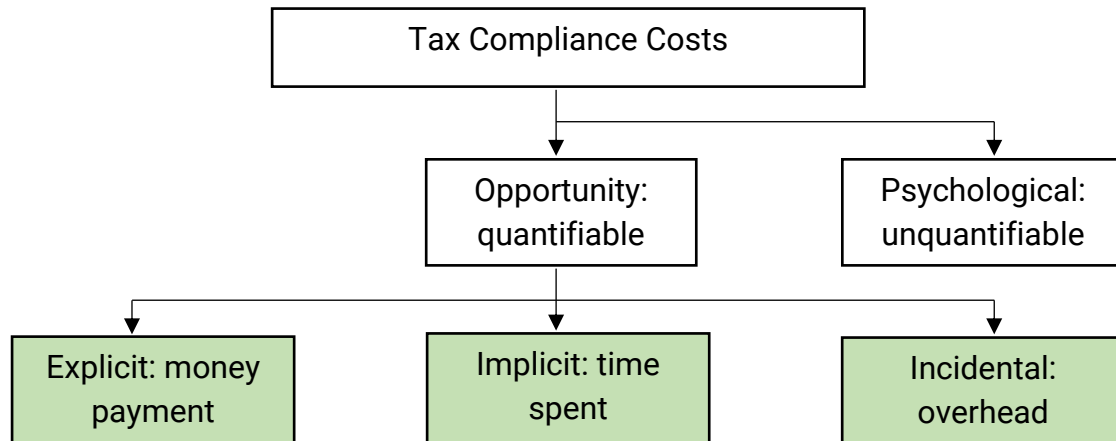
Another way of classifying the opportunity costs is by categorising the costs as external (paid to parties outside the business) and internal costs (paid to own employees) as the substitute for explicit and implicit costs. In the end, both categorisations (explicit v implicit or external v internal) will generate the same results.

With respect to incidental costs or non-labour costs (Tran-Nam, Evans, Walpole, & Ritchie, 2000, p. 236), caution is needed so as to separate incidental expenses from other overhead costs (Sandford et al., 1989, p. 14). When a business has its own tax department, it is relatively easy to define incidental tax costs. In contrast, a small business might only have one person who performs various tasks, including dealing with tax compliance matters (Allers, 1994, p. 34). This then could raise a problem with allocating incidental expenses only for tax activities (Martin, 1944; Yocum, 1961). Therefore, it is reasonable to exclude these costs in small businesses especially when the costs might only represent a very small portion of total compliance costs.

However, there is a caveat in estimating compliance costs in large businesses: excluding incidental costs would lead to underestimating the total compliance costs (Sandford, 1995a, p. 396).

Thus, while explicit costs are obvious and can be measured directly from the sum of economic resources transferred, implicit costs by contrast are more complex and depend on the subject who performs the tax activities. The problem of time valuation is discussed in in Section 3.3.2 below.

Before proceeding to the next section, it is useful to briefly comment on the relationship between tax administration and compliance costs. So far, they have been defined as if they are completely independent. This is not correct. Those two sets of costs correspond with each other in several ways, but the relationship between the two types of costs is quite complex. First, these two costs are broadly substitutable or may apply in an inverse relationship. Alternatively, these two costs may move together in the same direction or manifest a direct relationship. These two kinds of relationship are elaborated in turn.

First, some benefits, such as cash flow benefits, subsidies, and tax-deductibility benefits, deriving from compliance activities are considered losses to the tax authority (Tran-Nam et al., 2000, pp. 232-233). As mentioned in the issue related to the interest-free loans given by the government to the private sector, when taxpayers maximise their advantage over the period between the due date of tax payment and the date of tax collection, they practically achieve cash flow benefits which represent a transfer

of resources from the government to taxpayers. Cash flow benefits to the private sector entail cash flow losses to the public sector (Tran-Nam et al., 2000, p. 233). However, despite the fact that the resource transfers cancel each other out, the benefits and losses could be different due to the interest rate differences between the government and taxpayers (Sandford et al., 1989, p. 23). Additionally, in supporting the withholding system, the government could also provide one-off cash grants to taxpayers[26] or subsidies to offset some expenses, as has happened in various countries such as in China and Denmark (Evans & Tran-Nam, 2017, p. 216). Finally, tax deductibility benefits may be regarded as losses to the tax authority as taxpayers incur advisory fees and other relevant tax costs as deductible expenses. In sum, the benefits are the transfer of the economic resources from the public to the private sectors.

Secondly, the government may be able to shift its significant burden to taxpayers in the form of a self-assessment system and/or a tax withholding system. In contrast to an official assessment system where the tax authorities determine the tax liabilities for taxpayers, the self-assessment system requires taxpayers to acquire the tax knowledge or expertise to comply with tax laws. In a self-assessment system, the government transfers the responsibility to taxpayers thereby reducing the administrative costs whereas the compliance costs for taxpayers increase. Likewise, a withholding system allows for substantial burden reduction for the government to assign taxpayers as the third parties to collect the tax and remit the payment to the tax authority (e.g. VAT). In summary, the cost burden may be transferred from the public to the private sector.

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[26] When Australia introduced the GST system in July 2000.

In contrast to this inverse relationship, tax compliance costs and administrative costs may decrease concurrently as a result of tax simplification (Sandford et al., 1989, p. 23), or alternatively complexity could increase both the administrative and compliance costs. For example, an increase in tax auditing activities by the tax administration body may give rise to higher tax compliance costs to taxpayers (more rigorous record keeping, for example).

Summing up, administrative and compliance costs are closely associated. The relationship may prevail in an inverse or in a direct relationship. While the inverse relationship happens in transfers of economic resources and cost burden, the direct relationship occurs when complexity exists.

This section has explained the nature of tax administrative costs and tax compliance costs. The next section considers the conceptual and technical issues of tax compliance costs in more detail.

3.3.2. Conceptual and Technical Issues

Traditionally, the precise meaning of the term "tax compliance costs" has been unclear (Sandford et al., 1989, p. 10). Not only the exact meaning of the term, but also how to measure tax compliance costs have been the subject of considerable scholarly research (Tran-Nam et al., 2000, p. 232). Despite the fact that some degree of consensus has emerged from various discussions over time, it is pertinent to highlight

five (four conceptual and one technical) issues that have emerged from that body of literature, namely: (1) the avoidable and unavoidable features of tax compliance costs; (2) the distinction between commencement and recurrent compliance costs; (3) the boundary overlap issues in distinguishing between accounting and taxation costs; (4) the contrast between gross and net compliance costs; and (5) the technical issue of time valuation.

Each of these five issues in the compliance costs literature is dealt with in turn.

Avoidable and Unavoidable Features

A review of the literature suggests that a distinction can be made between those tax compliance costs which are unavoidable and those that can be avoided. The unavoidable features of tax compliance costs are mostly incurred when taxpayers are undertaking mandatory (compulsory or involuntary) computational processes such as producing tax invoices, preparing documents for lodging the tax returns, etc. In contrast, avoidable features are incurred in discretionary or voluntary tax planning activities, such as when taxpayers are engaging in tax mitigation strategies and activities which would allow them to minimise tax liabilities in a legal fashion.

The debate about these features commenced when Johnston presented an analysis of the tax compliance costs of corporate taxpayers (Johnston, 1963). He argued that tax compliance costs have both unavoidable and avoidable features. Unavoidable costs arise because of two major factors: the legislative requirements of the tax system, and prior management decisions (Johnston, 1963, p. 68). In contrast,

avoidable costs take place in tax planning and research activities (Johnston, 1963, p. 81). Due to the substantial amounts of avoidable costs recorded in the study, Johnston posited that tax policy-makers could consider this burden (or a justified proportion of it) when proposing a tax law (Johnston, 1963, p. 82). He also argued that the compliance costs are regressive because larger firms are more efficient in managing the unavoidable costs and because of the advantage that might arise when the government shares the burden of the costs to some extent (Johnston, 1963, p. 83).

Johnston's study then inspired further studies to identify computation and tax planning activities in various countries, such as in: Malaysia (Hanefah, Ariff, & Kasipillai, 2001, p. 89; Loh, Ariff, Ismail, Shamsher, & Ali, 1997, p. 35); Singapore (Ariff, Ismail, & Loh, 1997, p. 1259); Australia (Pope, Fayle, & Chen, 1994, p. 68); New Zealand (Brunton, 2005, p. 119); the USA (DeLuca, Stilmar, Guyton, Lee, & O'Hare, 2007, p. 164; Slemrod & Blumenthal, 1996, p. 422; Slemrod & Venkatesh, 2002, p. 19), and Canada (Erard, 1997a, p. 14; Vaillancourt et al., 2013, p. 25). Nonetheless, despite suggestions that the avoidable features such as tax planning and research activities should be excluded from measuring the compliance costs (Johnston, 1963, p. 70), the studies above have included both computational and tax planning costs in evaluating the total tax compliance costs.

Furthermore, despite the emerging trend to identify both sets of costs, some tax compliance costs studies have not separated the computational and tax planning costs: for example, in the UK (Sandford et al., 1989), in the Netherlands (Allers, 1995),

in the USA (Slemrod & Sorum, 1984), and in Australia (Evans, Lignier, & Tran-Nam, 2016).

Including both avoidable and unavoidable costs and not distinguishing the computational and tax planning costs are more appropriate for several reasons. First, Slemrod and Sorum have argued that both costs are actual resource costs of collecting the tax (Slemrod & Sorum, 1984, p. 461). Secondly, the line between unavoidable and avoidable will always be blurred and to constantly separate activities and costs related to tax planning from other costs would be immensely onerous (Evans et al., 1997, p. 3). Finally, Sandford provides another perspective based on "the reasonable man" to address the distinction. A reasonable man would claim various allowances which he was entitled to. Similarly, a business would also act in accordance with the approach of the reasonable man, and so attempt to maximise benefits by organising cash flow and various allowances. Moreover, the distinction was considered less relevant in estimating tax compliance costs. Thus, whilst it is possible to separate tax planning costs, this would be more appropriate for studies other than those measuring tax compliance costs. (Sandford, 1995a, p. 397).

Commencement and Recurrent Costs

Another conceptual issue in identifying and measuring tax compliance costs is the distinction between commencement and recurrent costs of tax compliance. Commencement costs emerge when the government enacts a new tax or reforms the tax law whereas recurrent costs relate to the costs of undertaking tax compliance

activities in relation to the existing tax system (Sandford et al., 1989, p. 16). Changing economic conditions might encourage the government to introduce a new tax or amend tax laws. Thus, commencement and recurrent costs can arise concurrently under any taxation system.

Some studies endeavour to examine only commencement costs. Australia's studies on the introduction of the goods and services tax (GST) (Pope & Rametse, 2001, 2002; Rametse & Pope, 2002; Tran-Nam & Glover, 2002b), the effects of pre-filled returns for personal income taxpayers (Duran-Cabre, 2010; Evans & Tran-Nam, 2012; Klun, 2009), and the consequences of rate changes in capital gains tax (CGT) (Minas, Lim, & Evans, 2018) or GST (Buchan, Olesen, Black, & Kumar, 2012) are among the myriad studies which analyse commencement costs.

However, separating commencement and recurrent costs is impractical as a result of various difficulties, including: (1) the existence of fixed assets which are used over the long term; accounting theory suggests that such costs should be amortised over their lifetime, but in practice it is acutely complicated to do this (Tran-Nam et al., 2000, p. 235), and (2) the risk of overestimating compliance costs when scholars undertake the study during the commencement of a new tax law, whereas costs in recurrent terms will decrease after taxpayers become familiar with the tax law (Sandford et al., 1989, p. 17).

Summing up, commencement and recurrent costs are inextricable components of overall tax compliance costs. While, in theory, it is possible to separate

commencement and recurrent costs, it is extremely challenging to make the distinction in practice. However, there might be a plausible basis to undertake studies that focus on the application of a new law or tax system. For example, one study has assessed administrative costs when a new PIT was introduced in Kuwait (Alm, 2018).

Accounting Overlap Issues

A further conceptual issue is an overlap between accounting and tax compliance activities. There is a risk of incorrectly estimating tax compliance costs when some of the tax compliance activities overlap with regular accounting activities (Tran-Nam et al., 2000, p. 240).

SMEs are perceived to be more prone to accounting overlap issues due to their limited resources – there is often no specific and distinct functional difference between record-keeping and tax activities for such businesses. They may argue that all costs involved in preparing accounting documents are compliance costs because of their perception that record-keeping was solely or mostly for tax purposes (Evans, Carlon, & Massey, 2005; F. J. Muller, 1963). Thus, evaluating the tax compliance costs of SMEs needs an accurate and reasonable proportion of their all record-keeping costs (Tran-Nam, 2015, p. 69).

In a study in Australia, Evans and co-authors applied this principle in separating non-taxation accounting costs from compliance costs (Evans et al., 1996). Business taxpayers were asked to identify costs incurred solely for tax purposes and costs

incurred in running and maintaining the business. By doing so, the study arguably managed to generate a more reliable result identifying which costs were more appropriately categorised as accounting costs and which costs belonged to tax compliance activities. The method was also successfully adopted in later studies of compliance costs for the small business sector in the 2009 and 2012 fiscal year (Lignier & Evans, 2012; Lignier, Evans, & Tran-Nam, 2014).

Summing up, a careful approach which has been specifically designed to identify accounting and tax compliance costs separately should be applied to mitigate the risk of incorrectly estimating compliance costs due to the overlap between accounting and tax compliance. Despite the fact that the issue is more common in relation to SMEs, prudence is also required in measuring the tax compliance costs of larger businesses.

Gross Versus Net

A further conceptual issue that has emerged in the literature relating to compliance costs is the difference between gross (or social) compliance costs and net (or taxpayer) compliance costs. In this regard, it is important at the outset to highlight some benefits received by the private sector in complying with the tax law. The benefits relate to cash flow, tax-deductibility, and managerial benefits.

First, cash flow benefits have been mentioned earlier in the discussion of the issue of interest-free loans to the private sector. The value of any cash flow benefit that may be available to the taxpayer depends on four factors: (1) the amount of the tax payment; (2) the time period between withholding an amount from a third party and

the remittance of that amount to the revenue authority; (3) the utility of cash flow benefits, and (4) the interest rate (Evans et al., 1997, p. 13).

Initially acknowledged in Sandford's study of the costs and benefits of VAT in the UK (Sandford et al., 1981, pp. 75-89), many published studies have suggested that cash flow benefits may be substantial. Data from several studies suggest that the benefits vary, from 17 per cent of VAT compliance costs in the Netherlands (1989) to 73 per cent of VAT compliance costs in the UK (1986/1987) (Allers, 1994, p. 136; Evans et al., 1997, pp. 50-51; NAO, 1994; Pope, Fayle, & Chen, 1993a, p. 128; Sandford et al., 1989, p. 117), even exceeding the social compliance costs in the case of PAYE and NI in the UK (1981/1982) (Sandford et al., 1989, p. 90).

Secondly, tax deductibility benefits arise when compliance costs are tax deductible, such as the costs to hire tax advisers, or payments by business to employees dealing with tax matters, or the payment of incidental expenses related to tax. Such benefits were originally suggested in Johnston's study when distinguishing the amount of compliance cost before and after the tax (Johnston, 1963, pp. 69-70). The value of any tax deductibility benefit depends on three variables: (1) the percentage of compliance activities which is a deductible expense; (2) the income tax rate, and (3) the status of the taxpayer for income tax purposes (Tran-Nam et al., 2000, p. 238).

Similar to cash flow benefits, tax deductibility benefits can vary considerably in magnitude. For example they have been found to be equivalent to 25 per cent of large business tax compliance costs in Indonesia (2010) or 35 per cent of corporate tax

compliance costs in India (2000-2001) ((Das-Gupta, 2006, p. 26; Susila & Pope, 2012, p. 742)

Finally, managerial benefits refer to improved business decision-making as the result of maintaining stringent record-keeping in complying the tax requirements (Tran-Nam, 2001a, p. 55). Although the concept of managerial benefits seems to be relatively straightforward, the gain itself is elusive. As a result, it has proved to be problematic to identify and quantify these benefits (Sandford et al., 1981, p. 96). Because of this issue, early tax compliance studies in the 1990s (Pope & Fayle, 1990b; Pope, Fayle, & Chen, 1991; Pope et al., 1993a) generally excluded the benefits in estimating compliance costs.

Two constraints are perceived to be the main problems in relation to quantifying these benefits. First, the difficulty of differentiating between accounting and tax compliance activities leads to a problem in distinguishing the managerial benefits produced from the accounting process from those generated by tax compliance. Secondly, how a business perceives its managerial benefits influences the significance of them (Tran-Nam, 2001a, p. 55).

Despite the constraints, Lignier has identified three sources of managerial benefits: (1) improvements in the book-keeping information system; (2) improvements in cash flow management, stock control, and credit management; and (3) savings in the potential costs of accountancy and audit (Lignier, 2009a, pp. 110-112). Moreover, several studies (Evans et al., 2014, p. 470; Gupta & Sawyer, 2015, p. 175; Lignier, 2008,

p. 261; 2009a, p. 133; 2009b, p. 33; Lignier & Evans, 2012, p. 656; NAO, 1994, pp. 19-20; Rametse, 2010; Sandford et al., 1981, p. 96) have suggested that most SMEs perceive that compliance with tax obligations generates significant managerial benefits. Finally, a recent study has also suggested that in a developing country (Bangladesh) context, the potential to obtain managerial benefits might encourage SMEs to comply with VAT and increasing awareness of these benefits might be more effective in persuading taxpayers to comply than imposing penalties (Faridy, Freudenberg, & Sarker, 2018, p. 340).

Having identified these three forms of tax compliance benefits, this study will now move to discussing the distinction between social and tax compliance costs.

There is a contrast between social/total compliance costs (which would be of more concern to economists and public treasurers) and tax compliance costs (of more concern to the businesses or taxpayers and the tax revenue department). Scholars have taken different approaches in studies of compliance costs as to whether to use total compliance costs or tax compliance costs. The staunch supporters of the former claim it is the better measure as indicating the costs to the economy: tax deductibility benefits and cash flow benefits only involve distribution of costs as between the government and private sectors, but do not affect the public's burden overall (Eichfelder & Vaillancourt, 2014, p. 113). This approach is widely adopted by most tax researchers, especially in North America (Slemrod & Venkatesh, 2002). In contrast, other advocates of tax compliance cost research consider the pertinent costs to be those directly borne by taxpayers (Evans & Tran-Nam, 2017, p. 215). This approach

has for the most part been adopted in the UK and Australasia (Australia and New Zealand).

This study, however, does not use the term social compliance costs. Rather, it adheres to the work of Sandford, and focuses on net tax compliance costs.

There are two reasons for adopting this approach. First, compliance costs, despite their inevitability and their potential burden, are not always detrimental. As noted above, taxpayers may gain benefits in applying better management, enhancing cash flow systems, and obtaining tax deductions (Sandford et al., 1989, p. 13). Secondly, the approach has been widely accepted and adopted in many major compliance costs studies. The approach adopted in Sandford's studies has been embraced not only in developed countries, such as the USA (Blumenthal & Slemrod, 1992), New Zealand (Hasseldine, 1995), Australia (Evans et al., 1996) and the UK (Evans, Hasseldine, & Pope, 2001), but also in developing countries, such as Malaysia (Pope & Abdul-Jabbar, 2008a), Ethiopia (Yesegat, 2009), South Africa (Smulders, Stiglingh, Franzsen, & Fletcher, 2012) and Indonesia (Susila & Pope, 2014). Hence, this study determines tax compliance costs after taking into account the various benefits of tax compliance.

With the conceptual issues above established, it is also necessary to address the technical issue related to the valuation of taxpayer's time in complying with the tax law.

Time Valuation Issues

Measuring the costs of time spent on tax activity by employees of taxpayers is relatively undemanding; it can be identified by reference to the transferred remuneration for the work or service rendered. However, it is more problematic when personal income taxpayers or business taxpayers handle their own tax activities, or unpaid helpers assist with tax matters. The question then arises as to what wage rate is representative in measuring those compliance costs. Which time basis, between working hours and leisure time, would be appropriate to use in relation to the completing of tax activities? Then, what rate basis in measuring taxpayers' leisure time is appropriate? Those are among various issues arising in valuing taxpayers' time (Holtzman, 2007, p. 426).

To generate a fair value of the taxpayers' time, it is necessary to acquire the wage rate data in advance. Some scholars have put forward proposed methodologies for carrying out this process. For example: Sandford suggested four valuation methods, namely calculation based on: (1) the wage rate; (2) relevant variations (net or after-tax) of the wage rate; (3) a proportion of the wage rate; and (4) a multiple of the wage rate (Sandford et al., 1989, p. 37). In line with Sandford, Slemrod applied the net wage rate in substituting leisure time whereas the gross (before-tax) wage rate was applied for working hours (Blumenthal & Slemrod, 1992; Slemrod & Sorum, 1984).

Pope has summarised six methods to analyse the time valuation (Pope, 1995, pp. 116-118). Those are: (1) the taxpayers' reported values; (2) a combination of the reported

values up to the maximum hourly rate; (3) the substitution costs for rendering a service to eliminate all the time and effort to comply with the tax laws; (4) the gross wage rate; (5) the net wage rate; and (6) the average (reported) value of time.

Summing up, all the methods above have been suggested and used in estimating the most reasonable time-value costs, and all can be justified in appropriate circumstances. Caution needs to be applied when choosing one method rather than another: internal and external cross-checks should be carried out and alternative time valuations considered by applying different measures (Sandford, 1995a, p. 398). Finally, given that no evidence has been found to prove that one method is superior to the others, the selection of a specific method will largely depend on the view on the issue reached by those conducting the study in each case and the availability of supporting data (e.g. the wage and salary data).

To conclude, the discussion of the above conceptual and technical issues has highlighted the key insights of the literature on tax compliance costs, which will be important for the design of this study and to the analysis of the empirical findings of prior studies in the next section.

3.3.3. Empirical Studies

Following on from the discussion in the previous section of various conceptual issues that have emerged in the literature in identifying and measuring tax compliance costs, this section explores the many empirical studies that have taken place into tax

compliance costs. This analysis is organised by reference to five broad themes: (1) who conducted the research; (2) what was the focus of the studies; (3) where was the research conducted; (4) how were the studies conducted; and (5) what were the main findings of the studies, including the key research outcomes and principal drivers of the tax compliance burden that were identified. These five categories will be elaborated in turn.

Who Conducted the Research?

This section commences by acknowledging the scholars, authorities, and sources that have established the literature of tax compliance costs. First, the scholars and the circumstance from the 18th and early 19th centuries are introduced in brief. Secondly, the extension of the authorities' endeavour to mitigate the risk of tax compliance costs through mutual collaborations is considered. Thirdly, contributions by private firms in the research are noted. Finally, the attempt of international organisations and bodies (such as the OECD) in developing and complementing the literature in their member countries is also noted.

The study of tax compliance costs is neither novel nor recent. Traditionally, it has been argued that the first systematised study of taxation was initiated by Adam Smith (Sandford et al., 1989, p. 24). In his landmark work, *Inquiry into the Nature and Causes of the Wealth of Nations*, tax compliance costs were implied in the criteria of sound tax policy and practice encapsulated in the four canons of taxation, of equity, certainty, convenience, and economy (Smith, 1776, pp. 639-640):

I   'The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities.'

II   'The tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person. Where it is otherwise, every person subject to the tax is put more or less in the power of the tax-gathered.'

III   'Every tax ought to be levied at the time, or in the manner, in which it is most likely to be convenient for the contributor to pay it.'

IV   'Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury of the state. A tax may either take out or keep out of the pockets of the people a great deal more than it brings into the public treasury, in the four following ways. First, the levying of it may require a great number of officers, whose salaries may eat up the greater part of the produce of the tax, and whose perquisites may impose another additional tax upon the people. Secondly, it may obstruct the industry the people, and discourage them from applying to certain branches of business which might give maintenance and unemployment to great multitudes..... Thirdly, by the forfeitures and other penalties which those unfortunate individuals incur who attempt unsuccessfully to evade the tax, it may frequently ruin them, and thereby put an end to the benefit which the community might have received from the employment of their capitals. An injudicious tax offers a great temptation to smuggling..... Fourthly, by subjecting the people to the frequent visits and the odious examination of the tax gatherers, it may expose them to much unnecessary trouble, vexation, and oppression; and though vexation is not, strictly speaking, expense, it is certainly equivalent to the expense at which every man would be willing to redeem himself from it. It is in some one or other of these four different ways that taxes are frequently so much more burdensome to the people than they are beneficial to the sovereign.'

In principle, these canons attempt to minimise tax operating costs in collecting tax revenue income. The certainty and convenience canons (II and III) are relevant to the compliance costs whereas the economy principle (IV) comprises both administrative and compliance costs. Moreover, the fourth reason under the economy principle

constitutes a clear description of the psychological costs of tax compliance (Sandford et al., 1989, p. 25).

Notwithstanding this very early mention of the compliance cost issue and these canons having been widely praised as the features of a good tax system (Mirrlees et al., 2010, pp. 22-23), tax compliance costs were not subsequently explored as much as might have been expected. It was only in 1935 that the modern study of tax compliance costs commenced. Some practical reasons could be the cause for this surprisingly long lag (1776 – 1935). First, there was a notion that the equity principle was more important than other principles (Mill, 1884, p. 621). Secondly, Sandford has argued that the lack of international interest was because of the decreasing tax burden and tax revenue in national income (Sandford et al., 1989, p. 26). Finally, Tran-Nam and Evans have identified the difficulty in incorporating tax operating costs into legal tax theory and collecting large amounts of data, complexity in analysing the economic incidence of tax operating costs, and an assumption that tax operating costs were insignificant, as the major causes of the neglect of the study until the latter part of the 20th century (Tran-Nam & Evans, 2002, p. 392).

Despite the difficulties, interest in the analysis of tax compliance costs has increased steadily in recent decades especially from academic researchers and governments (Tran-Nam et al., 2000). The concern from both parties has arisen after research has consistently indicated that tax compliance costs are significant and include unwanted distributional or regressive effects (Sandford, 1995c, p. 4). Moreover, Sandford has explained some key factors that have significantly increased the interest in

compliance costs studies (Sandford, 1995c, pp. 5-7), namely: (1) the emergence of advanced technology enabling large-scale surveys and analysis of data; (2) the widespread introduction of VAT or GST regimes with intrinsically high compliance costs; (3) the recognition of the vital role of small businesses for a country thus motivating governments to seek to minimise the compliance costs to support the development of an enterprise culture; (4) the growing complexity of tax systems as governments have sought to curb both tax evasion and tax avoidance, and finally (5) efforts by governments to increase voluntary tax compliance which may lead to greater concern about the impact of compliance costs.

The key factors above have increased government awareness of the need to consider compliance costs when enacting a new tax law or undertaking major tax reforms. One way in which this has become apparent is in the implementation of taxation impact statements (or similar documents) in Australia, the European Union (EU), New Zealand, the UK, and the USA (D'Ascenzo, 2001; Evans & Walpole, 1997, 1999; Rimmer, 1998). Furthermore, some governments have also established institutions with the main objective of reducing taxpayers' administrative burdens, such as the Dutch Commission to Reduce Administrative Burdens (*Commissie Vermindering Administratieve Lasten* or CVAL) in 1994, the Internal Revenue Service (IRS) Office of Taxpayer Burden Reduction (OTBR) in 2002, and in the UK Her Majesty's Revenue and Customs (HMRC) Administrative Burden Advisory Board in 2006 (Nijsen & Vellinga, 2002, p. 6; OECD, 2008, p. 29).

The measures, in turn, have boosted collaboration between both the government and academic researchers, and the government and private firms. While the former is prevalent in the UK (Godwin, 1995; NAO, 1994), New Zealand (Evans, 2019; Hasseldine, 1995; Prebble, 1995; Ritchie, 2001), and Australia (Evans et al., 1996, 1997; Lignier et al., 2014), the latter is extensively conducted in the USA and, to a limited scale, in Canada.[27]

Government-researcher collaboration arises because of two main factors, namely the potential availability of comprehensive respondent databases administered by the government and the researchers' expertise. First, the governments through various tax revenue departments such as the HMRC, the Inland Revenue (IR) of New Zealand, and the ATO have exceptional taxpayers' databases, which are crucial to generating a representative sample of taxpayers and producing adequate survey results. Thus, a solid partnership between government and researchers is the ideal framework for compliance costs studies (Sandford, 1995a, pp. 375-378).

Secondly, researchers potentially have deep knowledge and experience in the tax compliance costs field. For example, in the study of VAT compliance costs of the UK, the National Audit Office (NAO) acknowledged Sandford's significant technical assistance in conducting the research (NAO, 1994, pp. 19-23). Moreover, the IR and Treasury of New Zealand considered Evans' recommendation to mitigate the CGT compliance burden before considering the introduction of the tax (Evans, 2019, pp. 3-

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[27] It is noteworthy that these types of collaborations are not exclusive to the respective countries. Thus, government-researcher partnerships also occur in the USA (Slemrod & Venkatesh, 2002) and Canada (Erard, 2001), and government-private firm cooperation also takes place in New Zealand (Brunton, 2005).

4), and the New Zealand Treasury considered Prebble's study in measuring the costs to comply with the New Zealand Controlled Foreign Company (CFC) regime.

Having discussed the nature of the cooperation that has emerged in the UK, Australia, and New Zealand between government and researchers, it is pertinent to explore the nature of compliance cost study collaborations that have developed in the USA and Canada.

In 1988,[28] the IRS appointed Arthur D. Little Inc. (ADL) to manage two national surveys (ADL, 1988) and develop a methodology to estimate the taxpayers' compliance burden (the ADL methodology). However, due to its limitations (Gale & Holtzblatt, 1998, p. 342; 2002, pp. 10-13), the IRS and the US Treasury then contracted International Business Machines (IBM) to improve the ADL methodology in 1998 (Contos, Guyton, Langetieg, & Vigil, 2011, p. 194). The collaboration has since developed some simulation models such as the Individual Taxpayer Burden Model (ITBM) (Arena, O'Hare, & Stavrianos, 2002; Contos et al., 2011; Guyton, Korobow, Lee, & Toder, 2005; Guyton, O'Hare, Stavrianos, & Toder, 2003; Holtzblatt, 2004), the Small Business Burden Model (SBBM) (Contos, Guyton, Langetieg, & Nelson, 2009; DeLuca, Guyton, Lee, O'Hare, & Stilmar, 2007; DeLuca, Stilmar, et al., 2007; Guyton, Kindlon, & Zhou, 2004), and the Business Taxpayer Burden Model (BTBM) (Contos, Guyton, Langetieg, Lerman, & Nelson, 2012). Overall, the models have applied a micro simulation approach, involved

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[28] An earlier collaboration took place in 1985 between the IRS and the H&R Block to facilitate taxpayers lodging their tax returns electronically (Kopczuk & Pop-Eleches, 2007, p. 1366).

comprehensive data analyses, and combined the data of taxpayers' responses and their tax returns (Arena et al., 2002).

In contrast with the large-scale collaboration of the IRS-IBM in the USA, the government-firm partnership in Canada has taken place only to a minimal extent. Following Vaillancourt's studies in relation to business, individuals, and employment-related taxes (Vaillancourt, 1987, 1989), the Canadian Finance Department and the Canadian Revenue appointed Plamondon to investigate the GST compliance costs of small business (Plamondon, 1993) and examined the business compliance costs in adhering to the federal and provincial PAYE taxes (Plamondon, 1997). The results of the studies suggested not only that GST compliance costs in Canada were far lower than businesses expected, but also that they were much lower than the costs for equivalent taxes in the UK and New Zealand. However, these results need to be interpreted with caution due to the lack of objectivity and questionable methodology (Sandford, 1995a, p. 377).

Furthermore, various government institutions and their researchers have been undertaking intensive research of the small business tax compliance burden, such as the UK HMRC (Jennings, 2016; Zahid, 2012), the IR of New Zealand (IR, 2007, 2014), and the Small Business Deregulation Task Force of Australia (SBDTF, 1996). Additionally, the IRS and the Australian Treasury have analysed the effect of complexity on compliance costs (Marcuss et al., 2013; Oliver & Bartley, 2005). Finally, the Fraser Institute, a public policy think tank in Canada, has analysed tax operating costs in Canada (Clemens & Palacios, 2007; Vaillancourt et al., 2013)

The disinclination of small businesses to comply with tax law has provided an interesting topic for investigation, both by governments and also by private firm researchers. Thus many private firms have analysed the compliance costs of small business, as exhibited in the study of Yellow Pages Australia (YP, 1996), Colmar Brunton and *Klynveld Peat Marwick Goerdeler* (KPMG) in New Zealand (Brunton, 2005; KPMG, 2006b, 2007, 2008),[29] KPMG in the EU (KPMG, 2016) and in a collaboration study to develop a diagnostic tool in estimating the VAT compliance burden (Highfield, Evans, & Walpole, 2019), and the United States Agency for International Development (USAID) studies in South Africa (USAID, 2008a, 2008b).

Finally, international organisations such as the United Nations (UN) and the OECD have reviewed measures to mitigate tax compliance burdens. While the former has collaborated with the Inter-American Center of Tax Administrations (CIAT) focused on mitigating the tax compliance costs in the context of SMEs in South American countries (UN, 2014), the latter has suggested two broader measures (simplifying tax regulations and extensively revamping information access to taxpayers) to alleviate tax regulatory burdens (OECD, 2008, p. 46). Moreover, the World Bank (WB) Group has undertaken extensive compliance costs studies, not only through its researchers but also through collaboration with other institutions. The latter approach was taken in a collaboration with PwC[30] whereas the former approach prevailed in compliance costs

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[29] Despite traditionally collaborating with academic researchers, the IR of New Zealand has contracted Colmar Brunton (a market research agency with its head office in Auckland) to conduct compliance cost studies of SMEs in New Zealand (Brunton, 2005, 2009).

[30] The collaboration of the WB group and PwC will be explained in further detail in the next section.

studies in various countries such as South Africa (Coolidge, Ilic, & Kisunko, 2009; FIAS, 2007; Yilmaz & Coolidge, 2013), Ethiopia (Yesegat, Vorontsov, Coolidge, & Corthay, 2015), Ukraine (IFC, 2009), Uzbekistan (IFC, 2005, 2010b), Armenia (IFC, 2011), the Republic of Tajikistan (IFC, 2014b, 2017b), the Kyrgyz Republic (IFC, 2014a, 2017a), South Asia (Reva, 2015, pp. 18-26), Nepal (IFC, 2012), India (Bihar and Rajasthan), Laos, and Vietnam (as cited in (Coolidge, 2012, p. 253)). Similar approaches have also been taken by the European Commission (EC). The EC studies, both through its researchers and through collaboration with private firms such as KPMG, have expressed concern for compliance burdens to be reduced (Barrios, d'Andria, & Gesualdo, 2020; EC, 2004, 2007b, 2008, 2012; KPMG, 2018).

Summing up, all of the participants above have contributed to the tax compliance costs literature. Collaborations among them have developed significantly such as the intensive partnership between government and researchers in the UK and Australasia, close cooperation between the IRS and private firms in the USA, and consistent rapport between the WB Group and PwC more generally.

Table 3-1 summarises selected studies which represent the collaborations which have conducted the research.

Table 3-1: Collaborations in Tax Compliance Cost Studies, by Subject

Subject	Scholar	Private sector
Private sector	Highfield et al., 2019[31]	KPMG, 2006b, 2007, 2008

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[31] A collaboration study with KPMG.

National	Erard, 2001; Evans, 2019; Evans et al., 1996, 1997; Hasseldine, 1995; Lignier et al., 2014; NAO, 1994; Prebble, 1995	Brunton, 2005; Contos et al., 2012; Contos et al., 2009; Contos et al., 2011; Plamondon, 1993, 1997; USAID, 2008a, 2008b
International	S. Barrios, d'Andria, & Gesualdo, 2020; Coolidge, 2010; Coolidge et al., 2009; Yesegat et al., 2015; Yilmaz & Coolidge, 2013	KPMG, 2018; PwC, 2018; UN, 2014; WB, 2018b

This thesis will next describe the focus of the tax compliance costs literature; in other words, the nature of the subject matter explored by the studies.

What was the Focus of the Studies?

Tax compliance cost studies have evolved as a substantial element of tax policy design and reform (Prebble, 2001, p. xi).[32] In the early stages, most studies were conducted within the business taxpayers area (Tran-Nam & Evans, 2002, p. 393) or only focused on a specific tax such as the retail sales tax (Jacoby, 1937; Maloon & Oster, 1957; Yocum, 1961), or road tolls tax (Oster & Lynn, 1955). The studies then have gradually developed and explored more diverse taxes and broader-ranging tax-related areas. For example, more comprehensive studies have evaluated the compliance costs of all taxes (Allers, 1994; Evans et al., 1997), and focused on more specific taxpayers such as non-profit organisations (Blumenthal & Kalambokidis, 2006; McGregor-Lowndes & Ryan, 2009), or more detailed compliance activities e.g.

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[32] Due to the significant contribution of Sandford who conducted a very substantial volume of research into tax compliance costs (J. Turner, 1996).

post-filing activities (Guyton & Hodge, 2014; R. Hodge, 2013), and tax dispute and litigation costs (Copp, 2001; Tran-Nam & Walpole, 2016; Waegenaere, Richard Sansing, & Wielhouwer, 2007).

Furthermore, the studies have covered a wide range of taxes such as PIT (Guyton et al., 2003; Mathieu et al., 2010; Singh & Sharma, 2008, 2010; Stark & Smulders, 2019; Tran-Nam et al., 2014), CIT (Contos et al., 2012; Evans et al., 2016; Klun & Blažić, 2005; Sapiei & Ismail, 2014), VAT or GST (Bain, Walpole, Hansford, & Evans, 2015; Berhan & Jenkins, 2005; Sandford, 1998; Zu, Evans, & Krever, 2020), PAYE and NI (Chittenden, Kauser, & Poutziouris, 2005; Collard & Godwin, 1999; Collard, Green, Godwin, & Maskell, 1998; Godwin, 2001), fringe benefits tax (FBT) on motor vehicles (Buchan, Olesen, & Carberry, 2013), superannuation surcharge tax (Pope & Fernandez, 2003), petroleum tax (Sandford et al., 1989, p. 148), road toll tax (Friedman & Waldfogel, 1995), carbon tax (Pillay & Buys, 2013; Pope, 2014), import customs (Grainger, 2013), excise duties (Shekidele, 1999), and farmers' administrative burdens (Ritzel, Mack, Portmann, Heitkämper, & El Benni, 2020). Furthermore, other taxes such as stamp duty, inheritance tax, car tax, and betting and gaming levies have also been included in Sandford's studies (Sandford et al., 1989, pp. 171-181).

Similarly, different types of taxpayers have been the focus of observation. Business taxpayers (as opposed to taxpayers not in business) have dominated tax compliance cost studies (Evans, 2008, p. 455), while a remarkable gap occurs in relation to studies of large businesses as compared to those of their smaller counterparts. Perhaps, due to the regressive feature of tax compliance costs (see later), the studies of small

businesses are far more abundant than those of large enterprises (Evans et al., 2016, p. 3; Weichenrieder, 2007, p. 4). Non-business taxpayers also have been reviewed in various studies, for example individuals as employees (Chattopadhyay & Das-Gupta, 2002; Stavrianos & Greenland, 2002; Tran-Nam et al., 2014). Finally, employers with responsibility to collect taxes related to employment, such as PAYE and NI, have also been the focus of various research studies (Collard & Godwin, 1999; Hudson & Godwin, 2000; Plamondon, 1997; Pope et al., 1993a).

In addition to those studies examining the costs borne by taxpayers, some studies have evaluated compliance costs from the perspective of tax practitioners. For example, Green and Winter have identified various technical issues in the UK tax jurisprudence that gave rise to excessively high compliance costs (S. Green & Winter, 1995, p. 369). In South Africa, Smulders and Stiglingh have attempted to measure small business tax compliance costs based on the average fee charged by tax practitioners to their clients (Smulders & Stiglingh, 2008) and the Foreign Investment Advisory Service (FIAS) of the WB Group has recommended some initiatives to support small business growth (FIAS, 2007, p. 88). In addition, Sadiq and Marsden have argued that small businesses in Australia have limited understanding of CGT concessions and are heavily dependent on tax practitioners' advice thus increasing their tax compliance costs (Sadiq & Marsden, 2015, p. 20); and Tran-Nam and co-authors have examined how recent tax changes increased the complexity of the Australian tax system (Tran-Nam, Lignier, & Evans, 2016, p. 479). Similarly, the evaluation of tax system complexity perceived by tax practitioners has been undertaken in Australia (McKerchar, 2005), the USA (Burton & Karlinsky, 2016, p. 88),

and Portugal (Borrego, Loo, Lopes, & Ferreira, 2015). Finally, New Zealand's company tax regime has also been analysed from the tax practitioners' perspective (Waddell, 2017).

Interestingly, some scholars have attempted to conduct international comparative studies (Evans et al., 2014; Evans et al., 1997) while cognisant of the caveat expressed in the literature that such comparisons should be exercised with extreme caution (Sandford, 1994, p. 291; 1995b, pp. 405-408). Other studies which have diverged from the trend for studies to be focused only at the one country level have included the comparative study between Australia and the UK related to the operating costs of taxing CGT for personal income taxpayers (Evans, 2003a), and the study of internal costs of VAT compliance (Bain et al., 2015). Finally, also from a more global perspective, Cordova-Novion and De Young have measured the tax compliance costs of SMEs in eleven OECD member countries (Cordova-Novion & De Young, 2001). And, as noted earlier, Highfield and co-authors have developed a diagnostic tool for gauging the VAT compliance burden among 47 Forum on Tax Administration countries (Highfield et al., 2019), whilst the WB-PwC have provided a broad comparison of the business taxation compliance burdens in 190 countries (WB, 2018b, p. 5).

Summing up, tax compliance cost studies have considered most of the range of taxes and different types of taxpayers. While some taxes and types of taxpayers have been extensively studied in a domestic/national tax setting, other studies have adopted a more comparative/international perspective.

Table 3-2 highlights the focus of various such studies.

Table 3-2: Various Tax Compliance Cost Studies, by Focus

Focus	Study
PIT	Guyton et al., 2003; Mathieu et al., 2010; Singh & Sharma, 2008, 2010; Stark & Smulders, 2019; Tran-Nam et al., 2013
CIT	Contos et al., 2012; Evans et al., 2016; Klun & Blažić, 2005; Sapiei & Ismail, 2014; Susila, 2014
VAT/ GST	Bain et al., 2015; Berhan & Jenkins, 2005; Hansford, Hasseldine, & Howorth, 2003; Makara, 2014; Sandford, 1998; Yesegat, 2009
PAYE/ NI	Chittenden et al., 2005; Collard & Godwin, 1999; Collard et al., 1998; Godwin, 2001
Business	Chunhachatrachai & Pope, 2012; Contos et al., 2009; DeLuca, Stilmar, et al., 2007
Non-business	Chattopadhyay & Das-Gupta, 2002; Stavrianos & Greenland, 2002; Tran-Nam et al., 2013
Employer	Collard & Godwin, 1999; Hudson & Godwin, 2000; Plamondon, 1997; Pope et al., 1993a
Tax practitioner	Borrego et al., 2015; Burton & Karlinsky, 2016; Green & Winter, 1995; Smulders & Stiglingh, 2008; Tran-Nam et al., 2016
International comparison	Cordova-Novion & De Young, 2001; Evans et al., 2014; Highfield et al., 2019, WB, 2018

This thesis next moves to describe in greater detail the geographical spread of the research.

Where was the Research Conducted?

In terms of geographical focus, the study of tax compliance costs has gradually developed through three stages: (1) North America studies during the 1930s to 1960s; (2) European studies during 1960s and early 1970s; and (3) international studies generally after the 1980s (Sandford et al., 1989, pp. 30-34).

In the first phase, in the USA, Haig initiated the first modern attempt to measure tax compliance costs by questioning the sensible amount of private costs when complying with tax regulations (Haig, 1935). Then, a series of North American scholars undertook compliance cost studies in various subject areas, such as Martin in the review of tax administration (Martin, 1944), Oster and Lynn in a case study of tax compliance burden of commercial vehicles which ran on the public main road of Ohio (Oster & Lynn, 1955), and Wicks in the studies of personal income taxpayers' compliance costs (Wicks, 1965, 1966), and comparing the compliance costs of taxpayers as between state and local taxes (Wicks & Killworth, 1967). Overall, most studies in the first phase were conducted in the USA until the mid-1960s (Jacoby, 1937; Johnston, 1963; Maloon & Oster, 1957; F. J. Muller, 1963; Ture, 1956; Yocum, 1961), and it was only in the 1960s that research commenced in Canada on tax compliance costs focusing on corporate taxpayers (Bryden, 1961).

The commencement of the second phase of European studies took place in Germany when Strumpel investigated the "disguised tax burden" of German businesses and professionals (Strümpel, 1966). His research revealed unexpectedly high tax

compliance costs compared with German businesses' ability to pay. Therefore, he urged the German legislature to take immediate measures to decrease those costs, simplify the tax policies, and initiate specific deductibility rules for everyday expenses regarding business activities such as business trips and for communication and transportation expenses of both private and business concerns.

The UK studies, pioneered by Sandford at the University of Bath, then established an emerging interest in tax compliance cost research in that country. This wave of research started with an investigation of compliance costs due to the increase of complexity in the tax system (Sandford & Dean, 1971, p. 12) and the publication of the hidden costs of taxation (Sandford, 1973). Other studies included Dean's thesis on aspects of tax operating costs concerning personal income taxpayers in the UK (Dean, 1975) and Godwin's study of VAT compliance costs of independent retailers (Godwin, 1976).

Consistent with previous phases, tax compliance costs studies expanded significantly in the most recent phase. Despite the beginning of the international phase still being dominated by the USA (Marwick, 1985; Porpilia, 1985; Slemrod, 1989; Slemrod & Sorum, 1984), Canada (Andersen & Co., 1985; Erard & Vaillancourt, 1992; A. Thompson, 1984; Vaillancourt, 1987, 1989), and the UK (Bannock & Albach, 1987; Godwin, 1981; Godwin, Hardwick, & Sandford, 1983; Godwin & Sandford, 1983; Leonard, 1986; Leonard & O'Hagan, 1985; Robinson & Sandford, 1983), many other countries started to conduct tax compliance costs studies after the 1990s.

Thus, to better capture the geographical spread, the following analysis of the development of the literature is organised into five continents: Oceania, Europe, America (includes South America), Asia, and Africa. It is noteworthy that while not all the studies are covered in each continent, those that are reviewed show how ubiquitous compliance costs studies have been in this third, international, phase.

In Oceania, Australia seems to have been at the forefront of compliance cost research with a number of major studies undertaken since the 1990s. This was commenced by Pope in his studies of most major taxes in Australia (personal income, public companies, employment-related, wholesale sales, and companies' income) (Pope, 1993, 1994, 1995; Pope & Fayle, 1990a, 1990b; Pope et al., 1993a; Pope, Fayle, & Chen, 1993b; Pope et al., 1994). The studies by Evans and co-authors (Evans, 2003a; Evans et al., 2014; Evans, Lignier, & Tran-Nam, 2013; Evans et al., 1996, 1997; Evans, Ritchie, Tran-Nam, & Walpole, 1998; Tran-Nam et al., 2014) then continued the research focus with methodological developments and by providing more attentive details on various benefits in measuring compliance costs (see Section 3.2.1, Conceptual issues on Gross versus net). New Zealand followed the trend with the study of business tax compliance costs (Sandford & Hasseldine, 1992), small business compliance costs (Alexander, Bell, & Knowles, 2005), large enterprise compliance costs (Shekhovtsev, 2017; Tran-Nam, 2018), and comparative analysis with international studies (Evans & Tran-Nam, 2014).

In Europe, the UK studies have encompassed various subjects such as the compliance cost of employment-related taxes (Chittenden et al., 2005; Collard & Godwin, 1999;

Collard et al., 1998; Godwin & Lawson, 2009; Hudson & Godwin, 2000), personal income taxpayers' compliance costs (Mathieu et al., 2010), and import customs (Grainger, 2013) whereas in the Netherlands, Allers has comprehensively analysed the tax compliance burden for all taxes (Allers, 1995). Moreover, two studies assessed the tax compliance burden after tax reforms conducted in Sweden (Malmer, 1995), and Spain (Lobo, Salinas-Jimenez, & Sanz, 2001). Other experts such as Blaufus et al have explored personal income taxpayers' compliance costs in Germany (Blaufus, Eichfelder, & Hundsdoerfer, 2011; Blaufus et al., 2014), and Eichfelder and co-authors have investigated compliance costs both in Germany (Eichfelder et al., 2010; Eichfelder & Schorn, 2012) and also in Belgium, in the latter case by reviewing the compliance burdens related to the Belgian revenue authority activities (Eichfelder & Kegels, 2010, 2014; Eichfelder, Kegels, & Schorn, 2011) and suggesting measures to mitigate limitations (non-response and framing effects) in conducting compliance cost surveys (Eichfelder & Hechtner, 2018). Furthermore, Klun (2004a, 2004b) has examined personal and company taxpayers' compliance costs in Slovenia while Blažić (2004a, 2004b) has conducted research in Croatia. Finally, recent studies by Lopes et al have analysed the compliance costs of personal income taxpayers in Portugal (Lopes, de Basto, & Martins, 2012), Nemec et al have scrutinised tax operating costs in the Slovak Republic (Nemec, Cizmárik, & Šagát, 2017; Nemec, Pompura, & Šagát, 2015), and Pavel and Vítek (2014) have assessed the tax compliance burdens in the Czech Republic.

In North America, various studies into aspects of tax compliance costs have been undertaken: Blumenthal has analysed the compliance costs of large corporate

taxpayers (Blumenthal, 1993), Moody the costs to comply with federal income tax (Moody, 2002; Moody, Warcholik, & Hodge, 2005), and Lassila-Smith the tax complexity and compliance costs endured by US multinational companies (Lassila & Smith, 1997). Another study has examined the compliance costs of tolls for those who travel via the Massachusetts and New Jersey highway (Friedman & Waldfogel, 1995), while Stavrianos and Greenland have attempted to develop a model to estimate the compliance burden for personal income taxpayers who receive income from wages and investments (Stavrianos & Greenland, 2002). In Canada, Gunz et al have attempted to measure compliance costs related to the tax incentives for supporting research and development activities (Gunz, Macnaughton, & Wensley, 1996).

Moving to South America, various studies have been conducted in Brazil examining public companies, small enterprises and digital book-keeping as a means to reduce compliance costs (Bertolucci, 2002; Bertolucci & Nascimento, 2006; Cianfanelli, Pessôa, & Muritiba, 2010; CIAT, 2015; de Lima, Galegale, Arima, & Côrtes, 2016). In Chile, Serra has analysed the tax office's effort in minimising tax compliance costs (Serra, 2003, p. 377). Finally, Costa Rica and Uruguay are two countries that were selected for a pilot tax compliance costs study by the partnership of the UN-CIAT (UN, 2014, p. viii).

In Asia, three countries consecutively commenced research into corporate tax compliance costs: Singapore (Ariff et al., 1997; Ariff, Loh, & Talib, 1995); Malaysia (Loh et al., 1997); and Hong Kong, SAR (Chan, Cheung, Ariff, & Loh, 1999). Das-Gupta then conducted compliance costs studies in India for personal income taxpayers, related

to non-filing behaviour, and after tax reform (Das-Gupta, 2003a, 2004, 2005), and for corporate taxpayers (Das-Gupta, 2003b, 2006). Malaysia became the centre of a variety of compliance costs studies such as those of SMEs (Abdul-Jabbar, 2009; Abdul-Jabbar & Pope, 2008, 2009; Hanefah et al., 2001; H. A. Mansor & Hanefah, 2008), personal income taxpayers (Sapiei & Abdullah, 2008) and corporate taxpayers (Sapiei, Abdullah, & Sulaiman, 2014; Sapiei & Ismail, 2014; Sapiei & Kasipillai, 2014), and those relating to GST (Palil, Ramli, Mustapha, & Hassan, 2013). In addition, Chunhachatrachai, Susila, and Faridy have each also concluded successive compliance cost studies of corporate SMEs in Thailand (Chunhachatrachai, 2013; Chunhachatrachai & Pope, 2012), large taxpayers in Indonesia (Susila, 2014; Susila & Pope, 2014), and VAT costs of SMEs in Bangladesh (Faridy, 2014; Faridy et al., 2014; Faridy, Freudenberg, & Sarker, 2017; Faridy, Freudenberg, Sarker, & Copp, 2016).

In Africa, a study into excise duty compliance costs was initiated in Tanzania (Shekidele, 1999) whereas the compliance costs of a more popular tax for such studies, VAT, have been examined in Ethiopia (Yesegat, 2009), Botswana (Makara, 2014; Makara & Pope, 2013), Nigeria (Eragbhe & Omoye, 2014), Algeria (Ferdjani, 2015; M. Mansor & Ferdjani, 2017), and Mauritius (Juddoo, 2014). Furthermore, South Africa has explored various aspects of compliance costs for small business (Smulders, 2013; Smulders, Stiglingh, Franzsen, & Fletcher, 2016, 2017; Venter & de Clerq, 2013), and personal income taxpayers (Stark & Smulders, 2019), and relating to carbon tax (Pillay & Buys, 2013). In addition, compliance costs of SMEs have been investigated in Zimbabwe (Maseko, 2014) and those of publicly listed companies have been analysed in Kenya (Mogeni, 2014). Two further studies have been undertaken

examining the correlation between tax compliance costs and compliance behaviour in Tanzania and Uganda (Mahangila, 2017; Musimenta, 2020).

Summing up, the study of tax compliance costs has now become a worldwide phenomenon. Despite its global development, however, compliance costs studies in developed countries are more prevalent and cover a broader range of topics than those in developing countries. This disparity may have arisen because of the combination of the lack of a research culture, more limited research funding, and language barriers[33] in developing countries (Altbach, 2007, pp. 119-130; Cohn & Rossmiller, 1987, p. 391; Hallinger & Chen, 2015; Moore, 2011, p. 342), apart from the more limited awareness that has been discussed earlier.

Table 3-3 illustrates the geographical spread of the various studies discussed above.

Table 3-3: Tax Compliance Cost Studies, Geographical Spread

Continent	Study
Oceania	Alexander et al., 2005; Evans et al., 2016; Gupta & Sawyer, 2015; Lignier et al., 2014; Sandford & Hasseldine, 1992; Tran-Nam et al., 2000
Europe	Allers, 1994; Blaufus et al., 2011; Eichfelder & Hechtner, 2018; Klun & Blažić, 2005; Nemec et al., 2017; Sandford et al., 1989
America	Contos et al., 2012; Contos et al., 2009; Erard, 1997b; Guyton et al., 2005; Guyton et al., 2003; Slemrod, 2006; Slemrod & Venkatesh, 2002

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[33] Despite the fact that English has been widely adopted as a language in academic research, to some extent its usage also continues to restrict research opportunities for non-English academic researchers (Jenkins, Cogo, & Dewey, 2011; Tietze & Dick, 2013).

South America	Bertolucci, 2002; Bertolucci & Nascimento, 2006; Cianfanelli et al., 2010; de Lima et al., 2016; Serra, 2003; Takano, 2016; UN, 2014
Asia	Ariff et al., 1997; Azmi, Sapiei, Mustapha, & Abdullah, 2016; Chan et al., 1999; Chunhachatrachai & Pope, 2012; Faridy et al., 2017; Susila, 2014
Africa	Mahangila, 2017; Mahangila & Anderson, 2017; Musimenta, 2020; Smulders et al., 2017; Stark & Smulders, 2019; Yesegat et al., 2017

The following section will discuss how the literature has considered and implemented the collection of data in evaluating tax compliance costs.

How were the Studies Conducted?

To note as an initial matter, this thesis discusses in Chapter 4 the broader aspects of research design and methodology, including the research framework or paradigm (for example positivist, interpretivist, transformative, or pragmatic) and research method (for example quantitative, qualitative, and mixed methods). The discussion in this section confines itself to the methods of data collection as developed in the literature to date. It considers this issue both in terms of collection from primary sources (such as through questionnaires, interviews, and case studies) and from secondary sources (essentially through archival research).

Tax compliance costs studies have utilised the full range of data collection methods, such as questionnaires and interviews (including focus group discussions); time and case studies; archival research; and simulations and modelling (Sandford et al., 1989, p. 52). Because each method has its advantages and disadvantages, the selection of

a method or a combination of methods in the existing literature has often depended upon the available resources and surrounding circumstances (Allers, 1994, p. 44).

Questionnaires may be conducted in various ways such as by postal mail, electronic mail (or email), telephone, or face-to-face whereas interviews are only applied by telephone or face-to-face methods. The existing literature shows that all these methods have been used in compliance costs studies. Many studies, for example in Australia, Indonesia, Malaysia, and Thailand (Abdul-Jabbar, 2009; Chunhachatrachai, 2013; Hansford & Hasseldine, 2012; Lignier et al., 2014; Susila, 2014), have utilised large-scale mail questionnaires (Tran-Nam et al., 2000, p. 242) by postal mail due to its relative affordability, feasibility, and statistical reliability. Other studies have adopted different methods. For example, studies in Belgium and Germany have utilised email-based surveys (Blaufus, Hechtner, & Jarzembski, 2019; Schoonjans, Van Cauwenberge, Reekmans, & Simoens, 2011); the Yellow Pages (YP) of Australia (YP, 1996) and the Certified Practising Accountant (CPA) of Australia (CPA, 2003) studies adopted telephone interviews, and studies in Canada (Plamondon, 1993, 1997) and Spain (Diaz & Delgado, 1995; Lobo et al., 2001) have conducted face-to-face interviews.

In addition to the methods above, some studies have used focus group discussions (FGDs) as crucial instruments to explore proposed ideas, topics, or research questions or to assist in designing questions and responses for questionnaires (Caplan, 1990, p. 527; Kitzinger, 1994, p. 103; Knodel, 1993, p. 35). Usually conducted as a complement to a large-scale survey (Calder, 1977, p. 356; Morgan, 1996b, p. 134; S. Wilkinson, 1998,

p. 184), the FGD has been deemed helpful in analysing the taxpayers' perspective (Bertrand, Brown, & Ward, 1992, p. 199; Kitzinger, 1995, p. 299; Powell & Single, 1996, pp. 499-500).

Some researchers have utilised the case study approach. This method has been argued to be more robust for investigating compliance costs and studying the subject in a more detailed fashion as, for example in Wallschutzky's study of how small businesses undertook tax compliance activities for 12 months using diaries and interviews (Wallschutzky, 1995; Wallschutzky & Gibson, 1993); in separating tax compliance costs from usual business costs or in relation to the accounting overlap issue (Ritchie, 2001, p. 304); and in analysing tax compliance costs when a new tax law has been introduced and during the transitional period (Glover & Tran-Nam, 2005; Tran-Nam & Glover, 2002a, 2002b). Other studies have applied the method when identifying the potential costs of the Tax Value Method (TVM) of business taxation in Australia (Evans, Tran-Nam, & Jordan, 2002), analysing the costs to comply with customs duties for UK meat importers (Grainger, 2013), and measuring the costs of Hewlett-Packard, a multinational company, to comply with the federal tax in the USA (Seltzer, 1997).

Few studies have used archival research. Usually this method has been applied as an addition to other methods. For example, Sandford et al. used archival research to establish the tax administrative costs of administering the VAT in the UK (Sandford et al., 1981) and Arthur Andersen used such a method in its study of the administrative costs of the Ontario retail sales tax in Canada (Andersen & Co., 1985). Both studies

combined archival research with postal surveys to study the tax operating costs in the respective countries.

Methods involving simulation and modelling have also been widely adopted in various studies, such as in the partnership between the IRS and IBM (Contos et al., 2012; Contos et al., 2009; Contos et al., 2011). Another recent study in Australia has proposed a space model to estimate compliance costs (Wu & Tran-Nam, 2017). In addition, Benzarti has developed a quasi-experimental design based on an examination of taxpayers' preferences in selecting either customised or standardised deductions (Benzarti, 2020).

Some compliance cost studies have also contributed a significant improvement in providing solid methodological research and applying multiple methods in collecting data. For example, Muller's study (F. J. Muller, 1963) utilised three methods consecutively: a questionnaire, follow-up interviews with taxpayers, and additional interviews with tax officers and practitioners. Another study by Yesegat collected both primary sources (face-to-face interviews with taxpayers and tax practitioners, experimental design, and in-depth interviews with tax officers) and secondary sources (documentary analyses) in examining VAT compliance costs in Ethiopia (Yesegat, 2009). Another combination method involving large-scale surveys and semi-structured interviews with taxpayers was used in analysing the tax compliance costs of corporate SMEs in Thailand (Chunhachatrachai, 2013; Chunhachatrachai & Pope, 2012).

Furthermore, within the simulation and modelling approaches, there has been a developing trend to analyse tax compliance costs from the perspective of the public institution, policymaker, or lawmaker. The trend has emerged due to the notion that all compliance activities to provide data and documents are required by the regulatory organisation (Marneffe & Vereeck, 2011, p. 350). In contrast with most studies that have placed an emphasis on taxpayers and have used questionnaires – an approach sometimes better known as a "top-down" approach (Nijsen, 2008, p. 72) – the alternative method focuses on the law/regulation as the basic unit and uses expert-interviews together with group discussions – often referred to as the "bottom-up" approach (Nijsen & Vellinga, 2002, pp. 12-14; van der Burg & Nijsen, 1998, p. 267).[34]

One example of a bottom-up approach that has been used to study tax compliance costs is Mistral®, which stands for **M**easuring **Instr**ument **A**dministrative Burdens (*Lasten* in Dutch). It comprises a combination of three methods: case study, survey/ interview, and simulation (Nijsen, 2008, p. 70; OECD, 2001, p. 16). Mistral® was developed as an integrated fiscal measure focused on taxpayers' administrative burden (van Lunteren, 1998, p. 194). After some improvements, Mistral® has developed into the Standard Cost Model (SCM) and has been applied in most European countries (FIAS, 2007, p. 115) such as in the Netherlands, Bulgaria, Denmark, France, Greece, Italy, and the UK (Atanassov, Trifonova, Saraivanova, & Pramatarov, 2017; BRE, 2005; Cavallo, Coco, & Martelli, 2009; Deloitte, 2008; Ntaliani &

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[34] The top-down approach is argued to be initiated from the private sector's perspective whereas the bottom-up approach is considered to be commenced from the public institutions' perspective (Nijsen, 2008, p. 70).

Costopoulou, 2017; Stamatopoulos, Hadjidema, & Eleftheriou, 2017; Torriti, 2007, 2011).

The specific terms applied in the SCM are Administrative Burdens (ABs) and Information Obligations (IOs). ABs are the costs incurred by businesses when they comply in providing IOs due to the government's application of laws and regulations (EC, 2004, p. 8; IFC, 2010a, p. 2; Keyworth, 2006, p. 261).[35] Moreover, the SCM adopts several principles: (1) the social compliance costs approach: any benefit, income or reimbursement that arises due to complying with the legislation should be ignored;[36] (2) full compliance with all of the legislation: the sum of ABs is the aggregate of costs from taxpayers fully complying with the tax law; and (3) depreciation and sharing of costs are provided for: one-off costs should be amortised over the depreciation period and when an overlap occurs between two statutory regimes, the costs are shared equally between those regimes (EC, 2004, pp. 16-17).

To measure the burdens, the SCM applies the formula *Price x Quantity* (OECD, 2004b). *Price* constitutes labour costs (internal and external, measured in terms of the hourly rate) and prospective purchases whereas *quantity* represents the incidence of compliance activities annually (i.e. the frequency) multiplied by the taxpayers' population.

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[35] Similar to tax compliance burdens, IOs relate to data and information provision to either public authorities (e.g. annual tax returns, record-keeping documents) or third parties (e.g. invoices for VAT transactions, consignment notes for shipping goods) as the consequence of complying with the law (EC, 2004, pp. 8-9; OECD, 2004c, p. 8).

[36] Nijsen has argued that benefits which occur due to complying with the tax law are endogenous determinants of compliance costs (can be affected by the businesses) whereas the SCM is only interested in exogenous determinants or responsibilities imposed by government (Nijsen, 2008, p. 69).

As indicated above, another worldwide tax compliance burden project based on experts' assessment is the *Paying Taxes* series of studies, a component of the *Doing Business* project which have been published annually since 2004 by the WB group and PwC in (now) 190 countries (WB, 2018b). The project suggests three indicators to identify the tax burden: time in total hours to comply with specified tax obligations, the number of tax payments, and the percentage of the Total Tax and Contribution Rate (TTCR). The basic assumptions which underpin the tax burden identified in the reports are: taxpayers are limited taxable companies; they operate in the economy's largest business cities; they are purely domestically owned companies and have five owners and 60 employees; they undertake general industrial or trade activities; there are no cross-border transactions; and all contribution taxes (federal, state, and local) are included in the measurement, but no cross-border taxes (e.g. excise duties) are involved (WB, 2012, pp. 138-139). Each report then lists the overall ranking, from which in 2018, unsurprisingly as authorities with relatively simple tax systems and low tax regimes, Qatar, United Arab Emirates (UAE), Hong Kong SAR, Ireland, and Bahrain were the top five countries on the list (PwC, 2018, pp. 85-87).

Another approach to analysing tax compliance burdens is by identifying aspects of tax complexity and formulating a Complexity Index (G. Jones, Rice, Sherwood, & Whiting, 2013; Ulph, 2015; Whiting, Sherwood, & Jones, 2015). The UK, with the establishment of the Office of Tax Simplification (OTS) in 2010 (OTS, 2010), has developed three complexity indicators: (1) policy complexity, determined by reviewing the number of exemptions, reliefs, and Finance Acts with relevant changes; (2) legislative complexity,

determined by analysing the readability and the number of pages of legislation; and (3) operational complexity, found by checking the guidance and information required from taxpayers. The indicators then are graded on a scale of 1 (simple) to 5 (complex). The index is deemed helpful to identify the causes of complexity in the tax system (OTS, 2017, pp. 2-10) (and hence the cause of tax compliance costs), to formulate strategies for mitigating the tax system's complexity, and to evaluate the policies undertaken and improve proposed policies (Sherwood, Evans, & Tran-Nam, 2017).

Because this method is still in the process of development, some studies have provided suggestions to improve the method, for example, Evans et al (Sherwood et al., 2017; Tran-Nam & Evans, 2014) in the first systematic studies combining statistics and axiomatic perspectives in measuring tax complexity and the improvement of the Complexity Index, and Budak et al (Budak & James, 2018; Budak, James, & Sawyer, 2016; S. James, Sawyer, & Budak, 2016; Sawyer, 2013; Svetalekth, 2016) in the analysis of tax simplification measures that have been undertaken in various countries and the comparison with the OTS index.

Similarly, other various less well-established methods have been adopted in European countries (EC, 2013, pp. 35-60), such as Total Costs of Regulations (TCR) to business in Sweden, the Regulatory Check-up Model (RCM) in Switzerland, guidelines on the identification and presentation of compliance costs in legislative proposals by the Federal Government in Germany, the Cost driven Approach to Regulatory burden (CAR) (Bex, 2013; Netherlands, 2015) and Scanning Instrument Regulations of Other

Compliance Costs (SIROCCO) in the Netherlands, and the Total Cost to Serve (TCS) in the UK.

Summing up, each of the methods above which have been used – broadly or in more limited circumstances – to identify and measure tax compliance costs has plausible attributes. But all methods also have limitations (discussed in more detail in Chapter 4). There is no single method which has been shown to be superior to others, and Sandford's suggestion of combining several methods to generate optimal results and minimise the limitations of all the main research methods remains valid (Sandford et al., 1989, pp. 52-54).

Table 3-4 provides some examples of the data collection methods as applied in the various compliance cost studies.

Table 3-4: Tax Compliance Cost Studies, by Data Collection Method Applied

Method	Study
Survey/ interview	Blaufus et al., 2019; Eichfelder & Hechtner, 2018; Lignier et al., 2014; Schoonjans et al., 2011; Stark & Smulders, 2019
Time/ case study	Evans et al., 2002; Glover & Tran-Nam, 2005; Grainger, 2013; Seltzer, 1997; Tran-Nam & Glover, 2002a; Wallschutzky, 1995
Archival research	Andersen & Co, 1985; Sandford et al., 1981
Experiment	Mahangila, 2017; Woellner et al., 2001, 2005; Yesegat, 2009
Simulation/ modelling	Benzarti, 2020; Contos et al., 2012; DeLuca, Guyton, et al., 2007; DeLuca, Stilmar, et al., 2007; Wu & Tran-Nam, 2017
SCM	Atanassov et al., 2017; BRE, 2005; Cavallo et al., 2009; Ntaliani & Costopoulou, 2017; Stamatopoulos et al., 2017; Torriti, 2007

Complexity index	Budak et al., 2016; James et al., 2016; Sherwood et al., 2017; Svetalekth, 2016; Ulph, 2015; Whiting et al., 2015
VAT diagnostic tool	Highfield et al., 2019

With the various features of the literature pertaining to compliance costs reviewed above, the next section moves to detail the main findings suggested by that literature, identifying the major conclusions and key drivers of compliance costs.

What are the Main Findings of the Studies?

The differences in the design of the various studies makes it a challenging task to summarise the key findings from all the tax compliance costs literature. For example: (1) in analyses of personal income taxpayers' tax compliance costs, there have been differences in taxpayers covered, with some studies excluding self-employed taxpayers (Blažić, 2004b; Klun, 2004a) and others covering both self-employed and employee taxpayers (Blaufus et al., 2014; Contos et al., 2011; Guyton et al., 2003); (2) studies have varied in terms of definitional[37] and survey instrument design issues; (3) studies have also used different time valuation methods, with Pope's studies (Pope & Fayle, 1990b; Pope, Fayle, & Duncanson, 1990), for example, having higher costs of valuation of time than the studies by Tran-Nam and co-authors (Tran-Nam et al., 2000); and (4) studies have adopted differing assumptions as to the nature and role of tax administration, for example, as to whether the government shifts the tax

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[37] Some studies may apply the gross compliance costs approach whereas other studies may use the net compliance costs approach.

administrative burden to taxpayers (Eichfelder & Vaillancourt, 2014, p. 119). Nevertheless, despite the above difficulties, three major themes have emerged from the literature, namely that tax compliance costs are significant, regressive, and not significantly decreasing over time. Each feature is explained below in turn. Attention will then turn to findings as to the drivers of these costs.

First, a key finding is that compliance costs are significant specifically for the national taxes (PIT, CIT, VAT/GST) in both absolute monetary terms and relative to the tax revenue, administrative costs, or GDP (Evans & Tran-Nam, 2017, p. 219). Evans has suggested that tax compliance costs vary in the range of between 2 to 10 per cent of the tax revenue and between two to six times administrative costs, and are up to 2.5 per cent of GDP (Evans, 2003b, p. 71; 2008, p. 457).

A variety of studies confirm the absolute and relative significance of tax compliance costs. Research conducted in the USA (Contos et al., 2009, p. 56) measured the annual compliance costs of small business taxpayers and established they were USD 23.9 billion in total, with an average per firm of USD 1,075, and overall they comprised 1.73 per cent of the 2004 tax revenue. Another study in Germany (Blaufus et al., 2019, p. 952) identified that the total compliance burden of private households in Germany was between EUR 5.5 billion and 7.9 billion and constituted 2 to 2.9 per cent of the 2015 income tax revenue. In Australia, the compliance costs of SME business taxpayers have been estimated at AUD 18 billion (approximately 1.2 per cent of GDP), and to comprise an average AUD 11,000 per firm, and represent 14 per cent of the 2012 tax revenue income generated from the SME sector (Lignier et al., 2014, p. 247). Another

study has suggested an even higher burden suffered by corporate SMEs in Thailand, with compliance costs averaging THB 260,300 (USD 8,200) per firm, and representing 128 per cent of the 2010 tax revenue (Chunhachatrachai, 2013, pp. 191-192). Based upon evidence of this nature, it is safe to assume that the compliance costs burden is absolutely significant and relatively high compared to tax revenue collected by the respective countries, to GDP or to other measures.

In contrast, the compliance costs of excise duties have been found to be small (Allers, 1994, p. 178; Kuliš, 2004, p. 14; Sandford et al., 1989, p. 160; Smulders et al., 2012, p. 200).[38] Furthermore, mixed results have been reported in relation to the compliance costs of property tax: a study in Canada suggested the compliance costs of property tax were low (Vaillancourt et al., 2013, p. 52) whereas another study in the Czech Republic highlighted the opposite result (Pavel & Vítek, 2014, p. 511). Similarly, studies of the compliance costs of customs have also generated diverse results, as between the high burdens found in Croatia (Bronić, 2004, p. 15) and low costs found in South Africa (Smulders et al., 2012, p. 200).

Secondly, the literature has found that compliance costs are regressive. Initially identified by Bryden (1961), this feature has been repeatedly highlighted in the compliance costs literature, specifically when concerning the compliance costs of VAT/GST (Sandford, 1998, p. 131). Smaller businesses suffer disproportionately high compliance costs because they have limited economic resources to satisfy the tax

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[38] In contrast to the findings of the majority of studies, a substantially high compliance cost of excise duties has been reported in Tanzania (Shekidele, 1999).

requirements and to manage the high fixed costs embedded with tax administration such as the costs associated with learning a new tax law (Evans, 2008, p. 458). In contrast, larger enterprises are not so adversely affected by such costs because they have the flexibility to amortise the costs.

Evidence suggested by the study among 14 EU countries verified the regressive feature. Large businesses spent in compliance costs an average EUR 1.5 million or 2 per cent of the taxes paid and 0.02 per cent of turnover whereas their SME counterparts incurred an average EUR 0.2 million or 31 per cent of the taxes paid and 2.6 per cent of turnover (Cattoir & Koevoets, 2004, pp. 4-5). Furthermore, more recent studies (Ching, Kasipillai, & Sarker, 2017, p. 476; Eragbhe & Modugu, 2014, p. 83; Schoonjans et al., 2011, p. 613; Smulders, 2013, pp. 13-27; Yesegat et al., 2017, p. 91) have also confirmed small businesses have suffered disproportionately higher burdens as measured in terms of assets, turnover, and employees compared with larger enterprises.

Finally, it has been found that compliance costs do not appear to be substantially decreasing over time (KPMG, 2018, p. XVI). Studies in the USA, which have analysed the effect of regulatory costs to small businesses, have suggested that during the three year period 2009 to 2012 the federal tax compliance costs increased from USD 96 billion to USD 109 billion or rose 13 per cent (N. V. Crain & Crain, 2010, p. 29; W. M. Crain & Crain, 2014, p. 39). Similarly, other studies have confirmed that compliance costs are not decreasing (Evans et al., 2016, p. 26; KPMG, 2018, p. 137; Lignier et al., 2014, p. 247; Slemrod, 2006, pp. 5-6; Vaillancourt et al., 2013, p. 96).

Some studies (Evans & Tran-Nam, 2017, p. 221; J. C. Fleming, 2015, p. 232; Keating, 2014, p. 20) have further identified that compliance costs have failed to decrease over time despite various governments' efforts to simplify the tax system. However, evidence (Blaufus et al., 2019, p. 953; Blaufus & Hoffmann, 2019, p. 1; WB, 2018b, p. 6) has suggested some improvements in the tax administration that have reduced compliance burdens. These improvements include the ability to apply simplified record-keeping for tax purposes such as cash-based accounting (Bergner & Heckemeyer, 2017), and mature technology[39] such as e-filing,[40] pre-filled income tax returns, and computerised tax accounting systems (WB, 2018b).

More specifically in relation to this point, recent studies (Blaufus et al., 2019; Blaufus & Hoffmann, 2019) have suggested that the adoption of cash-based accounting methods has reduced the external compliance burdens of self-employed taxpayers whereas mature technology has reduced the implicit costs of self-preparers without self-employment income. A study in Germany (Blaufus & Hoffmann, 2019, p. 25) has argued that tax advisers would charge 30 per cent lower fees to customers who were able to use the cash-based accounting system compared with those who applied accrual accounting. Another study in Germany (Blaufus et al., 2019) also revealed that

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[39] As discussed earlier in relation to the conceptual issue of commencement and recurrent costs, in the early stages of introduction of the technologies mentioned, taxpayers still needed time to adjust with the systems. Thus, it seemed during the period, some studies (Evans & Tran-Nam, 2012; Hansford, Hasseldine, & Howorth, 2003; Klun, 2011; Yilmaz & Coolidge, 2013) reported that these technologies did not produce significant improvement. Nevertheless, in line with better adaptation to the systems, later studies showed that the technologies have reduced the time needed to comply with the tax law (Kochanova, Hasnain, & Larson, 2018; WB, 2018b).

[40] This refers to the availability of a facility provided by the revenue authority to enable taxpayers to lodge their tax returns online.

taxpayers who manage their tax return by themselves (those who have better tax knowledge, higher formal education, and only have employment income) have benefited most from the simplification of the German individual income taxation. In addition, the WB (WB, 2018b, p. 6) has argued that technology has reduced the time to comply with the tax law and decreased the number of tax payments.

Nevertheless, these recent findings do not meaningfully detract from the broad conclusion that tax compliance costs are not decreasing over time because the reductions achieved in these examples only relate to limited components of compliance costs, namely the implicit time to comply for those without self-employment income and the external costs for those using cash-based accounting.

Summing up, despite different design features, and focus on different specific taxpayer circumstances of the studies in the compliance costs literature, tax compliance costs are still considered to be significant in absolute and relative terms, disproportionately burdensome for smaller enterprises, and not decreasing substantially over time.

Following on from the above conclusions, this section now moves to set out the findings of the compliance costs literature as to the key themes and trends in relation to the principal drivers influencing tax compliance costs. To better organise this aspect of the literature analysis, the drivers will be explored by reference to internal and external factors.

The internal factors that the literature suggests drive taxpayer compliance costs may derive from taxpayer characteristics such as employment status, the existence of overseas activities, and business size. First, the literature indicates that self-employed taxpayers tend to suffer higher compliance costs than employee taxpayers (Blaufus et al., 2014; Blumenthal & Slemrod, 1992; Chattopadhyay & Das-Gupta, 2002; Guyton et al., 2003; Malmer, 1995; Pope & Fayle, 1990a; Sandford et al., 1989; Slemrod & Sorum, 1984; Vaillancourt, 1989, 2010). Secondly, it suggests that taxpayers with overseas earnings or activities tend to incur higher compliance costs (Becker & Fuest, 2012; Blumenthal & Slemrod, 1995, p. 52; Cattoir & Koevoets, 2004, p. 5; Solilova & Nerudova, 2018, p. 101; Verwaal & Cnossen, 2001, p. 110). Finally, business size is also noted in the literature as being influential in determining the magnitude of compliance burdens (DeLuca, Guyton, et al., 2007; Eichfelder & Schorn, 2012, p. 206; Evans et al., 1996; Hansford et al., 2003, p. 488; Sandford et al., 1989, p. 84; Vaillancourt et al., 2013).

In addition, other interesting features emerge from the findings as to the perceived internal compliance cost drivers. These features occur when the business taxpayer utilises tax software and hires an external tax adviser. Despite the view that using tax software might be associated with enhanced efficiency and a lower compliance burden, empirical evidence suggests that using such software is positively related to higher compliance costs (Eichfelder & Schorn, 2012, p. 213; Guyton et al., 2005, p. 446; Hansford et al., 2003, p. 487; K. D. Thomas, 2017, p. 1552). Moreover, while hiring a tax adviser may be deemed as costly (Erard, 1997b, p. 7), studies in Canada and South Africa have demonstrated that most small businesses would save substantially more

in costs when fully outsourcing their tax affairs rather than assigning the task to internal employees (Blaufus & Hoffmann, 2019, p. 26; Coolidge et al., 2009, p. 26; Vaillancourt & Barros, 2011, p. 218). Furthermore, research in Germany has suggested that small businesses hire external tax advisers to reduce their tax compliance burdens (Eichfelder & Schorn, 2009, p. 19) and a potential cost saving of between 14 per cent and 25 per cent can be achieved when businesses increase twofold the proportion of the outsourced tax compliance activities (Eichfelder & Schorn, 2012, p. 191). A similar suggestion has been proposed for employees (personal income taxpayers) in Germany who hire a tax adviser. Despite the fact that hiring a tax adviser arguably leads to higher costs, it can have a substantial negative correlation with estimated tax savings (Blaufus, Hechtner, & Möhlmann, 2017, p. 552).

A series of external factors, such as tax choices, the form of tax administration, changes to the tax system as a result of tax reform, and tax complexity, are also considered to be other major drivers of compliance costs.

First, the existence of choices in the tax system inevitably gives rise to tax compliance costs. An example of tax compliance costs increasing as a result of the availability of choice can be seen in the application of the CGT provisions in Australia. To estimate the CGT liability, a PIT may have the freedom to select one of several computational methods. This policy choice gives rise to high compliance costs because the taxpayer will most likely be seeking a tax adviser's advice to identify the minimum tax liability possible under the various alternatives. Another example is the (now discarded) proposal for a standard deduction for work-related expenses for personal income

taxpayers in Australia. This proposal would have allowed taxpayers to either select a standard deduction or choose to claim the actual expenses incurred. As a result, personal income taxpayers would have continued to hire tax advisers (or spend time themselves) to examine whether one of the options would have enabled them to claim more deductions than another. This outcome is also highlighted in a US study where the taxpayers had the option to choose the customised or the standardised deductions (Benzarti, 2015, 2017). Thus (and notwithstanding that it may lead to a reduced amount of tax payable), providing options in the tax policy proposal may give rise to higher tax compliance costs (Tran-Nam & Evans, 2011, p. 733). Summing up, in some circumstances, limiting the choices and selecting simplicity over the equity principle could help to mitigate the risk of high compliance costs (Evans, 2019, p. 19).

Secondly, the form or nature of the tax administration and how it operates may influence the tax compliance costs incurred in the interaction between the tax revenue authority and taxpayers. It has been suggested that when the tax revenue authority is approachable,[41] business taxpayers could reduce their compliance costs by 26 per cent (in Belgium) or 30 per cent (in Germany) (Eichfelder & Kegels, 2010, p. 20; 2014, p. 212; Eichfelder et al., 2011, p. 277). In contrast, compliance costs soar when there is a dispute with the tax revenue authority (Blaufus et al., 2019, p. 928). Not only does the dispute cause costs to rise heavily, but it also causes escalating levels of stress

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[41] Approachable refers to the tax revenue authority adopting behaviour that applies a taxpayer-oriented approach or being a taxpayer-friendly administration (Eichfelder & Kegels, 2010, 2014; Eichfelder et al., 2011; Gangl et al., 2013).

(Copp, 2001; Guglyuvatyy & Evans, 2015; Rosenzweig, 2007; Tran-Nam & Walpole, 2016; Waegenaere et al., 2007).[42]

Another relevant aspect of tax administration affecting compliance costs is the application of e-filing. Despite the suggestion that the availability of e-filing can substantially reduce implicit costs (Kochanova, Hasnain, & Larson, 2016, p. 14; Kochanova et al., 2018, p. 17), various empirical studies have suggested that the cost saving may not be as large as expected (Blaufus et al., 2019, p. 926; Eichfelder & Hechtner, 2018, pp. 787-788; Eichfelder & Schorn, 2009, p. 18; 2012, p. 213; Guyton et al., 2005, p. 446; Ibrahim, 2014, p. 525; KPMG, 2018, p. XVI; Vaillancourt et al., 2011, p. 61; Yilmaz & Coolidge, 2013, pp. 52-53).

Thirdly, it is logical to expect that major tax changes or tax reform will bring about substantial changes in the compliance costs incurred by taxpayers (Tran-Nam et al., 2016, p. 354). By introducing tax reform or periodic change in the tax law, the government requires taxpayers to allocate time and resources in adjusting to the changes (Evans, 2003a). Recent evidence found by Štager supports this notion. Scrutinising the changes in tax legislation among the EU countries, Štager has argued that tax compliance costs increase when frequent changes in tax legislation occur (Štager, 2018, p. 48; Štager, Čokelc, & Vengušt, 2017). Thus, tax law changes significantly drive levels of compliance costs and also cause increased uncertainty for

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[42] Kirchler et al. have described interactions between the tax revenue authority and taxpayers under the "slippery slope" framework (Kirchler, 2007; Kirchler, Hoelzl, & Wahl, 2008). This framework suggested that the government should combine power (in deterring tax evasion) and trust (in administering the tax administration fairly and benevolently) to maximise tax compliance (Gangl, Hofmann, & Kirchler, 2015).

taxpayers (KPMG, 2006a, p. 6), which is another potential source of increased compliance costs.

Finally, the literature confirms that complexity is definitely a key indicator and driver of compliance costs (Evans, 2008, p. 459). Because of the very significant impact of complexity, it is necessary to explain the indicators, types, and effects of tax complexity on taxpayers' compliance burdens in further detail.

Tax complexity can be identified by many indicators: for example, in the number of taxes at different government levels; the length of the tax law; the readability of the tax law; the number of taxpayers who seek professional tax advice; the level of tax litigation; and the amount and incidence of tax operating costs (Evans & Tran-Nam, 2017, pp. 210-211).

Scholars have developed various ideas related to the concept of tax complexity. Slemrod identified four aspects of tax complexity: predictability; enforceability; difficulty; and manipulability (Slemrod, 1989). Cooper has described seven criteria in the evaluation of tax complexity which are in principle similar to these elements (Tran-Nam & Evans, 2014, p. 346), namely: predictability, proportionality, consistency, coordination, and expression (in line with the predictability aspect); administration (comparable to enforceability); and compliance (analogous to difficulty) (G. S. Cooper, 1993, p. 424). Nevertheless, perhaps the perspective put forward by McCaffery, envisaging three types of complexity in the tax system, is more universal (McCaffery, 1990, pp. 1271-1272). The first of these types of complexity, technical complexity,

concerns the level of difficulty involved in understanding the context of the tax regulations. The second, structural complexity, relates to the difficulties in grasping and interpreting rules for economic transactions, so sometimes also affecting the uncertainty and manipulability of tax constitutions. The final type, compliance complexity, relates to the administrative requirements such as record-keeping and document-lodging duties that taxpayers must fulfil to comply with the tax laws.

Acknowledging the detrimental effect of complexity, some researchers investigating compliance costs have expressed the need for tax simplification (Abdul & Wang'ombe, 2018; Faridy et al., 2014; Keating, 2014; Yesegat et al., 2017). As an attempt to develop a simpler tax system (Tran-Nam, 1999b, p. 505), tax simplification has been strongly advocated based on two reasons. First, given that many recent studies (Evans et al., 2016; Tran-Nam et al., 2016; Tran-Nam et al., 2016) have shown that tax compliance costs are high, from a macro perspective, tax simplification could therefore save substantial economic resources (Pope, 1993, p. 69). Secondly, and in more specific terms, a simplified tax system would require less accounting and reporting documents and less difficulty for taxpayers to satisfy their tax requirements which in turn would lead to a reduction in compliance costs for taxpayers, and likewise for government, which could also reduce administrative costs by saving costs in processing and administrating fewer documents.

Despite the fact that simplicity is often incompatible with equity[43] (Surrey & Brannon, 1968, p. 915); Carnes & Cuccia, 1996, p. 54), simplification can be said to be necessary

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[43] A flat rate tax system may be simpler; however it goes against the equity principle (Donaldson, 2003, p.

when the tax law has any or all of the following factors: an excessive number of highly detailed rules, theoretical concepts and contradictory principles; it requires technical assistance to be fully understood; it has been subject to repeated legislative amendments, and a large number of institutions have accumulated statutory powers to enact binding rules under the system in which the law operates[44] (Donaldson, 2003, p. 738). For example, one study has revealed that high levels of complexity and uncertainty (due to the combination of income tax laws, hotel levy Act and infrastructure tax) imposed heavy burdens on the tourism sector in Zanzibar, a semi-autonomous region of Tanzania (Mahangila & Anderson, 2017, pp. 11-12). Conversely, another study in Canada (Plamondon & Zussman, 1998, p. 785) analysed the potential compliance costs saving (between CAD 171 to 285 million annually or 6.7 per cent of total compliance burden) for businesses after the various levels of government merged their federal, provincial, and territorial tax administrations into a single tax collection agency. In short, with a less complex tax system, both government and taxpayers reap the benefits: government can spend less of its budget in managing the tax administration, and the taxpayers can save resources in complying the tax laws.

Table 3-5 summarises some of the main findings of the various tax compliance cost studies discussed above, in terms of the characteristics of compliance costs and their drivers.

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739).

[44] For example, in the USA, Congress, the Treasury Department, the Internal Revenue Service, and the Courts can all impose binding tax rules.

Table 3-5: Tax Compliance Cost Studies, Main Findings as to Characteristics and Drivers

Characteristic	Study
Significant	Chunhachatrachai, 2013; Contos et al., 2009; Lignier et al., 2014
Regressive	Ching et al., 2017; Eragbhe & Modugu, 2014; Schoonjans et al., 2011; S. A. Smulders, 2013; Yesegat et al., 2017
Not decreasing	Evans et al., 2016, p. 26; KPMG, 2018, p. 137; Lignier et al., 2014, p. 247; Slemrod, 2006, pp. 5-6; Vaillancourt et al., 2013, p. 96

Driver	Study
Employment	Blaufus et al., 2014; Blumenthal & Slemrod, 1992; Chattopadhyay & Das-Gupta, 2002; Guyton et al., 2003; Malmer, 1995; Pope & Fayle, 1990a; Sandford et al., 1989; Slemrod & Sorum, 1984; Vaillancourt, 1989, 2010
Overseas activity	Becker & Fuest, 2012; Blumenthal & Slemrod, 1995; Cattoir & Koevoets, 2004; Solilova & Nerudova, 2018; Verwaal & Cnossen, 2001
Business size	DeLuca, Guyton, et al., 2007; Eichfelder & Schorn, 2012; Evans et al., 1996; Hansford et al., 2003; Sandford et al., 1989; Vaillancourt et al., 2013
Choice	Benzarti, 2015; Evans, 2019; Tran-Nam & Evans, 2011
Administration	Blaufus et al., 2019; Eichfelder & Kegels, 2010, 2014; Eichfelder et al., 2011; Gangl et al., 2015; Tran-Nam & Walpole, 2016
Tax change	Štager, 2018, p. 48; Štager et al., 2017
Complexity	Mahangila & Anderson, 2017; Plamondon & Zussman, 1998

In conclusion, this section has analysed the major findings that have emerged from the literature on tax compliance costs – that these costs are significant, regressive, and not decreasing over time. In addition, it has identified some of the key drivers of

those compliance costs. The thesis will next move to focus more closely on the taxpayer cohort that is the subject of this study, SMEs, by discussing in more detail the compliance cost profile of these taxpayers.

3.4. Tax Compliance Costs of SMEs

Of particular relevance to SMEs, the previous section has highlighted, inter alia, the regressive nature of tax compliance costs: the compliance burden is disproportionate to the business size (whether measured in terms of net assets or in terms of turnover) of small firms. In this context, this section will continue to review the literature with attention to the challenges faced by SMEs specifically – the principal subject matter of this thesis – and proposed actions that have been suggested to mitigate the burden.

Reflecting the fact that running a business is not an easy job, and that even starting one is a daunting task, studies have shown that most businesses have endured burdensome entry regulations and excessive costs which may discourage business start-ups (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002, p. 35; Djankov, Lieberman, Mukherjee, & Nenova, 2003, p. 68). Moreover, various constraints have also been found to hamper the growth of businesses, such as lack of management time and proficiency (Hessels & Parker, 2013), financial access (Beck & Demirguc-Kunt, 2013; Beck, Demirguc-Kunt, & Levine, 2005; Reddy, 2007; Rupeika-Apoga, 2014; Wang, 2016), and institutional and regulatory constraints (Rosengard & Prasetyantoko, 2011; Wysłocka & Verezubova, 2016; Xheneti & Bartlett, 2012).

In addition to the barriers faced by SMEs, various studies have been conducted to analyse how SMEs can thrive and achieve better performance. It has been argued that the success of SMEs depends to a significant extent on the quality of the management and the key persons (Child & Hsieh, 2014; Child et al., 2017; Wiklund & Shepherd, 2003). Furthermore, the key persons also rely very substantially on the tacit knowledge[45] in the process of development of a business (Koskinen & Vanharanta, 2002).

However, this tacit knowledge does not usually apply to tax matters. Small businesses possess inadequate knowledge in tax affairs, and are also confronted with limited availability of sources of taxation information (McKerchar, 1995). These factors are also exacerbated by tax complexity (Dirkis & Bondfield, 2004, pp. 7-8; J. Douglas & Pejoska, 2017, p. 9). As a result, it is not surprising that small businesses report having significant difficulty maintaining appropriate record-keeping for tax purposes (Evans et al., 2005; P. Lewis, Richardson, & Corliss, 2015; McKerchar, Hodgson, & Walpole, 2009) or having the tendency to need to contract external parties to assist with tax issues (McKerchar, Hodgson, & Walpole, 2006, p. 47). Furthermore, a study analysing the compliance burdens in Europe and South American countries has suggested that the burden to comply with the tax law is one of the factors that encourages businesses to move into the shadow economy rather than operating in the formal sector (Ceano-Vivas, Muñoz-Torres, & Lirio, 2014). Another study has suggested that some SMEs in

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[45] Tacit knowledge is the accumulated individual-level knowledge that is learned through everyday experience to solve practical and real-world problems (Hedlund et al., 2003, p. 117).

Kwazulu-Natal, South Africa, perceive that complex VAT registration procedures might restrict their business expansion (Clover & Darroch, 2005, p. 256). Therefore, there is a worldwide concern, and consensus, that compliance costs have substantial impacts on the small business sector (Chittenden, Foster, & Sloan, 2010, p. 75; Chittenden, Kauser, & Poutziouris, 2002, p. 69; 2003, p. 109).

To date, several studies have suggested measures that attempt to reduce or alleviate these compliance burdens. Some of the suggested measures include providing reimbursement for the compliance costs incurred (Bankman, 2005, p. 9); determining the optimal VAT/GST threshold to support small business (Brashares, Knittel, Silverstein, & Yuskavage, 2014); and simplifying income taxes and record-keeping requirements for small business (Gallagher & Jacobs, 2009; Ma, 2015). Each of these measures is now considered in more detail.

3.4.1. Reimbursement

In an assessment of the effectiveness of compliance cost reimbursement programs, the experience of Australia offers relevant insights. Prior to introducing its GST in 2000, Australia encouraged small businesses (those with annual turnover below AUD 10 million) to register in the GST system by providing them each with an AUD 200 voucher (Treasury, 2003). The voucher then could be redeemed at registered suppliers to help them purchase goods and services subject to GST. However, this practice was considered to be costly: roughly more than AUD 380 million[46] was spent on the

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[46] The voucher was called a Direct Assistance Certificate (DAC) and the Treasury of Australia reported that

voucher program. Moreover, while financial incentives are powerful instruments for motivating taxpayers, the measures could also have the opposite effect to that intended (Kamenica, 2012, p. 447) because they may cause contradictory incentives and lead to efficiency costs (Bankman, 2004, p. 26). In that sense, the contradictory incentives may discourage taxpayers to grow as the incentives motivate them to stay under the eligibility threshold. Moreover, a reimbursement program entails not only the reimbursement itself but also the costs to manage the program thus adding another layer of costs as well as the welfare loss (Bankman, 2004, pp. 17-18).

3.4.2. VAT/GST Registration Levels

As noted in Chapter 1, VAT/GST systems generally entail high compliance cost burdens.[47] Thus, it is important for the government to define the registration threshold so that it does not hinder small businesses' growth with these burdens unnecessarily. While the issue of providing reimbursement related to compliance costs, and the associated efficiency implications, may be considered relatively straightforward, the dilemma of establishing the optimal VAT/GST threshold is considered more complex (Kanbur & Keen, 2014). The complexity arises from the need to find the balance between two extremes: an excessively high threshold would undermine the fundamental objective of generating revenue whereas an unduly low threshold may exacerbate the tax administration problem and increase tax operating costs (Keen & Mintz, 2004, p. 559). Further complexity may arise as a result of attempts to mitigate

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more than 1.9 million DACs were distributed (Australia, 2001, p. 52).

[47] See Section 1.1 for discussion of these burdens.

the risk of any distortions created by striking such a balance, such as tax bunching[48] and the problem of the "missing middle".

In terms of tax bunching, studies have revealed that the setting of the VAT/GST threshold leads to a substantial response from small businesses (Gebresilasse & Sow, 2015; Harju, Matikka, & Rauhanen, 2016; Jarkko Harju, Tuomas Matikka, & Timo Rauhanen, 2019; L. Liu & Lockwood, 2015, 2016; Onji, 2009; Saputro, 2020). Those whose turnover actually exceeds the threshold may attempt to remain under the threshold to avoid the additional tax burdens and complexity faced by the group above the threshold (Nurfauzi, Nuryakin, & Putra, 2019, p. 154). For example, a study in Finland (Jarkko Harju et al., 2019, p. 154) has suggested that tax compliance costs are the key driver of the bunching behaviour of small businesses. Also in relation to the corresponding issue of the "missing middle", in which numerous small firms emerge, and some big firms, but very few medium-sized firms (Hsieh & Olken, 2014, p. 89; Tybout, 2000, p. 12), it has been suggested that one of the possible reasons for the phenomenon is the attempt by firms to stay below the threshold by reducing their economic activities thus causing inefficiently low levels of economic activity (Slemrod & Gillitzer, 2013, p. 23).

To mitigate the risks of tax bunching, various approaches have been posited. Evidence from Armenia suggests applying a sufficiently high threshold (so that the benefits of

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[48] Tax bunching refers to taxpayers' response to stay below any threshold (VAT/GST, marginal tax rate, tax incentive) to obtain the potential benefits of a lower burden, lower rate, or higher incentive (Almunia & Lopez-Rodriguez, 2018; Best, Brockmeyer, Kleven, Spinnewijn, & Waseem, 2015; Best & Kleven, 2018; Candela, 2013; Devereux, Liu, & Loretz, 2014; Johnson & Breunig, 2015; Kleven, 2016; Lardeux, 2017; le Maire & Schjerning, 2013; Mortenson & Whitten, 2016; Paetzold, 2018; Saez, 2010; Waseem, 2018).

registering with the tax system will outweigh the compliance costs) together with tax audit strategies targeted to those businesses which obtain the greatest benefit by remaining below the threshold or usually stay at the administrative notch (Asatryan & Peichl, 2017, p. 32). A study in Norway recommends providing intermediary policies to assist businesses during the period of transition from below to above the threshold, such as the elective VAT flat rate measures developed for small businesses in the UK (Zolotukhina, 2017, p. 42), while another study in Ethiopia (Gebresilasse & Sow, 2015, p. 10) proposes analysing the elasticities of taxable income at various levels of threshold. The elasticity then will be useful to estimate the magnitude of the tradeoff for various thresholds.

3.4.3. Simplification of Record-keeping

Finally, the simplification of record-keeping for tax purposes for small businesses has been raised implicitly and explicitly in the literature. Record-keeping is one of the most time-consuming activities undertaken by small businesses (Blaufus & Hoffmann, 2019, p. 26; DeLuca, Guyton, et al., 2007, p. 74; DeLuca, Stilmar, et al., 2007, p. 164; Evans et al., 2013, pp. 22-23; Marcuss et al., 2013, p. 850), and the difficulties faced by small businesses in maintaining proper records features prominently in the literature (Lai & Arifin, 2011, p. 22; Ma, 2015, p. 104; Smulders & Naidoo, 2013, p. 276). As a result, organisations such as the EC have suggested appropriate simplification measures including simplified tax accounting and presumptive taxation methods (EC, 2007a, p. 14), each detailed in turn below.

Simplified Tax Accounting

Simplified tax accounting has been regarded as an alternative to the conventional accrual-based accounting regimes (Bergner & Heckemeyer, 2017, p. 582). Although accrual-based accounting provides stability (for example, it reduces the matching problem between revenue/costs and cash flows) and better reflects economic performance (Dechow, 1994, p. 3), its application in the tax setting is costly (Goncharov & Jacob, 2014, p. 1158). Thus, simplified tax accounting has been proposed for SMEs to alleviate market failure and the regressive aspect of tax compliance costs affecting them due to their small size (OECD, 2015, p. 60). Various forms of simplified tax accounting have been developed (Bergner & Heckemeyer, 2017, p. 585), such as cash-based accounting using cash-in and cash-out to monitor and measure economic activity, and the use of specific lump-sum percentages of turnover to determine the net income before tax, as was discussed in Indonesia's case (i.e. the deemed net income method of taxation) in Section 2.4.

Presumptive Taxes

A particular form of record-keeping simplification is the use of a presumptive tax. This method of taxation is now considered in more detail to provide the platform for the comparison of the compliance costs burden arising under the presumptive and conventional small business tax regimes in Indonesia the focus of this thesis.

Presumptive taxes entail the use of indirect methods to estimate a taxpayer's liability as an alternative to the conventional methods based on the taxpayer's accounts (Thuronyi, 1996, p. 1) and apply simple indicators which are easier to measure than the actual tax bases (Ahmad & Stern, 1991, p. 276). They are built on the legal presumption that the actual income is more than the estimated amount from the indirect assessment (Thuronyi, 2005, p. 103).[49] As a result, the application of presumptive taxes is a compromise between fairness and simplicity (Haque, 2013, pp. 125-126).

Furthermore, presumptive taxes may be designed to apply on a rebuttable or non-rebuttable basis (Bird & Wallace, 2005, p. 145), where a rebuttable presumptive tax provides chances for taxpayers to challenge the established tax liability, thus potentially increasing dispute costs, while a non-rebuttable tax has a mandatory effect and mostly has been designed to impose a lower burden than the conventional tax does (Haque, 2013, p. 152). The practice of non-rebuttable presumptions has been applied in what is termed a minimum presumptive tax, when the government determines a minimum tax liability for the taxpayer; and on an exclusive basis, when the government imposes the tax liability based solely on a presumption. For example, the value of the land becomes the base of the presumptive tax on agricultural income instead of the income generated by the actual crop (Thuronyi, 2005, p. 106).

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[49] Einaudi (as quoted in (Tanzi & de Jantscher, 1987, p. 7), has argued that because the tax is levied on the average income rather than the real income, the taxpayer is encouraged to be more productive.

In the above context, Thuronyi has identified six objectives in applying presumptive taxes (1996, p. 2), namely: (1) to enhance the efficiency of the tax system, so as to achieve the optimal taxation by reducing the operating costs (Slemrod, 1990, p. 159; Slemrod & Yitzhaki, 2000, pp. 35-39); (2) to deter tax evasion or avoidance – a presumptive tax functions well when the bases of presumption are more difficult to hide than those establishing the basis for the tax based on conventional record-keeping; (3) to nurture an equitable distribution of the tax burden, which can be better achieved under the presumptive approach when conventional record-keeping is doubtful due to low compliance or administrative fraud; (4) to encourage taxpayers to apply prudent record-keeping practices, which is likely to be the case in the rebuttable presumptions case because the absence of record-keeping may cause taxpayers to incur additional tax burdens; (5) to encourage taxpayers to be more productive, given that some presumptions (particularly with the exclusive feature) will not involve more tax being imposed on taxpayers even if they earn more income (Sadka & Tanzi, 1992, p. 3), and (6) to meet other objectives, such as the presumptions operating as minimum taxes in terms of generating tax revenue and emphasising fairness – for example, presumptive minimum taxes have been applied by most developing economies where many enterprises run high-income businesses but report minuscule incomes and so taxpayers are ascribed minimum levels of income in specific tax years (Taube & Tadesse, 1996, pp. 20-21).

In broad terms, a presumptive tax regime can be a very crucial part of a tax system despite being considered a "second best" option and regarded as a deviation from the ideal of a conventional account-based tax system (Faulk, Martinez-Vazquez, &

Wallace, 2006, p. 1; Haque, 2013, p. 147). It has been proposed as a potential solution to encourage the participation of start-ups in the tax system and to motivate contributions of "Hard To Tax" (HTT)[50] groups in society to assist in tax revenue collection (Bird & Wallace, 2005, p. 137). The presumptive tax approach has been applied in many countries (Engelschalk & Loeprick, 2015; IFC, 2007; Weichenrieder, 2007), both developing and developed.

Nevertheless, despite the apparent advantages discussed above, a presumptive tax regime may also have some limitations. First, weak tax administration and poor design of the presumptive tax may cause inefficiency, more complexity, and higher compliance costs, as studies have found, for example, in the case of implementation of presumptive tax regimes in Kenya, Pakistan, Ukraine, and Zimbabwe (Dube & Casale, 2017, p. 47; Memon, 2013, p. 41; Ogembo, 2019, p. 26; Serbinenko, 2016, p. 74). Moreover, the presumptive approach does not necessarily improve the compliance behaviour of SMEs to any substantial extent (Engelschalk, 2005a, p. 275; Verberne & Arendsen, 2019, p. 21) or generate significant tax revenue (Abate, 2019, p. 90; Memon, 2010, p. 299). Therefore, some studies (Bird & Wallace, 2005; Engelschalk, 2005a; K. D. Thomas, 2013) have suggested measures designed to overcome such limitations.

More specifically, in light of the evidence that relying on the presumptive tax alone may not improve tax compliance, Engelschalk has argued for improvements in the

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[50] A part of the population that is more difficult to tax than others (Alm, Martinez-Vazquez, & Schneider, 2005)

capacity of the tax administration to detect any non-compliance by taxpayers (Engelschalk, 2005a, p. 309). Furthermore, to encourage taxpayers to develop effectively, it has been argued that tax administrations must ensure that the tax system provides an appropriate window of time within which taxpayers should begin to apply proper record-keeping and switch to the conventional tax regime (Bird & Wallace, 2005, p. 143). Finally, as it has been suggested that third-party reporting information is the key factor that enables developed countries collect their tax revenue (Kleven, Knudsen, Kreiner, Pedersen, & Saez, 2011; Kleven, Kreiner, & Saez, 2016),[51] the use of third-party reporting information especially relating to non-cash sales or electronic payments has been strongly encouraged (K. D. Thomas, 2013, pp. 124-125).

While the variety of methods and overlaps among the indicators used in presumptive tax systems makes it difficult to categorise the presumptive bases, some studies have attempted classifications (Bucci, 2019, pp. 5-7; Bulutoglu, 1995, p. 261; Iordachi & Tirlea, 2016; Taube & Tadesse, 1996), including, for example, that of Iordachi and Tirlea suggesting the three categories of lump-sum taxes (patent), taxes based on income capacity and taxes based on indicators (Iordachi & Tirlea, 2016, p. 13) and that of Taube and Tadesse proposing the three bases of standard assessments, estimated assessments and presumptive minimum taxes (Taube & Tadesse, 1996, p. 1). Tanzi and De Jantscher have also provided the following more comprehensive classification (Tanzi & de Jantscher, 1987, pp. 9-14): (1) presumptive regimes based on obvious signs of wealth (specific for personal wealth taxes); (2) presumptive regimes based

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[51] In contrast to developed economies, developing countries have limited capacity to collect the third-party reporting information. As a result, developing countries have suffered most from problems of the shadow economy (an area explained in greater detail later in this section) (Besley & Persson, 2014).

on the value of specific assets or on net wealth; (3) estimated assessment methods; and (4) presumptive regimes based on gross turnover. This classification will be used for the more detailed analysis below.

Presumptive Tax Regimes Based on Visible Signs of Wealth

Presumptive taxes based on visible signs of wealth have a long history. Such taxes were evident in the UK in the 16[th] century (Saleheen, 2012, p. 317) when the government imposed taxes on the basis of two such signs of perceived wealth or ability to pay, namely hearth and window taxes respectively in 1662 and 1696 (Oates & Schwab, 2015, pp. 165-166). In modern practice, the application of taxes of this kind has not run smoothly. Difficulties in specifying the type of wealth that should be taxed and issues encountered in court proceedings in relation to application of either book value or market value of the assets have hindered their implementation (Tanzi & de Jantscher, 1987, p. 12). Consequently, developing countries such as Bolivia, Colombia, Indonesia, and Sri Lanka have abolished such taxes (Bird, 1991, pp. 323-324), and similarly developed economies such as Canada, Australia, and New Zealand (Duff, 2005). Nevertheless, Piketty's recent study (Piketty, 2014) has reinvigorated an awareness of wealth inequality and emphasized the urgency of using wealth taxes, social security measures and other social transfers to mitigate the unfavourable consequences of greater inequality in the future (C. I. Jones, 2015; J. E. King, 2017; Rotberg & Steinberg, 2019; Weil, 2015).[52]

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[52] Piketty et al. have argued that developed economies have experienced consistently higher rates of capital returns than the economic growth rate (r > g), a situation that will lead to increasingly harsh wealth inequality in the long run (Piketty, 2015; Piketty & Saez, 2014; Piketty, Saez, & Stantcheva, 2014; Piketty &

Presumptive Tax Regimes Based on Specific Asset Values or Net Wealth

Another form of the tax is a presumptive tax based on the value of specific assets or the land tax. An early example is found in what is now Italy in the 17[th] century (Pashev, 2006, p. 400) when the Principality of Milan declared land values as the basis for a new tax instead of agricultural activities in 1760 (Sadka & Tanzi, 1992, p. 2). In modern times, most emerging countries have applied presumptive regimes based on assets more generally rather than just the land tax, and also agricultural income tax, and transport vehicle tax (Bird, 1974; Dube, 2014, p. 60; 2018, p. 731; Haque, 2013, pp. 132-135; Rajaraman, 1995, pp. 1111-1113; 2005, pp. 249-250). Due to the fact that the burdens of such taxes fall heavily on small business taxpayers, usually the application of such taxes is applied after certain exemption thresholds. Another variant applies the increase in net wealth approach by comparing the assets' value at the beginning and the end of the fiscal year. This is a useful means to establish a taxpayers' income when proper record-keeping is not available (Tanzi & de Jantscher, 1987, pp. 9-10). Indonesia and Colombia are among a variety of developing countries that have applied a presumptive regime based on net wealth. While the former applied it during the tax amnesty program in 2016 only, the latter has adopted it since 2002 (Londoño-Vélez & Ávila-Mahecha, 2018, p. 83).[53] It has been argued that the difficulty in establishing the ownership of equity shares and foreign currencies, and taxpayers' tendency to inflate their liabilities, have constrained the effectiveness of this form of presumption (Tanzi

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Zucman, 2014).

[53] Colombia enacted legislation on 28 December 2018 (Law 1943 – tax reform) that will abolish the presumptive tax based on net wealth after 2021 (EY, 2019, p. 2).

& de Jantscher, 1987, p. 10).

Estimated Assessment Regimes

Estimated assessment methods include the French *forfait*, the Israeli *tachsiv*, and the Italian *studi di settore* (Haque, 2013; Thuronyi, 1996). These will be highlighted in turn.

Forfait is a contract-based tax when an eligible taxpayer, where the annual turnover is below a certain limit, has agreed to pay tax on an estimated income. It applied various indicators such as sales, purchases, owned assets (e.g. cars), and hired employees to estimate the tax liability. Although the classical *forfait* system is not in use any longer (Haque, 2013, p. 142), Rajaraman has argued that it had been the most successful system of presumptive taxation of agricultural land in France and other francophone countries (Rajaraman, 1995, p. 1112). The application of *forfait* includes these steps: (1) a taxpayer provides information to the tax administration related to the previous year's business activities; (2) the tax administration estimates the derived income based on the information; (3) the taxpayer has options to accept the *forfait* result or rely instead on the regular record-keeping activity; (4) should the *forfait* be selected, the taxpayer applies *forfait* for two years (the previous and the current year), otherwise record-keeping is applied for three years (Thuronyi, 1996, p. 22).

Similarly, *tachsiv* is a presumptive tax based on an agreement between the tax administration and the respective business organisation (Pashev, 2006, p. 406). It is limited to eligible taxpayers (under the threshold), and applies various indicators (e.g.

in the case of a restaurant, by the location, food price, customers' seats). It is highly favoured by taxpayers because of its rebuttable feature: taxpayers would automatically select *tachsiv* when they realise their actual net income is higher than *tachsiv* estimated amount. While it was abolished in 1975, *tachsiv* is still used informally especially when the taxpayer fails to generate proper record-keeping documents (K. D. Thomas, 2013, p. 120). The difficulty in maintaining and updating the criteria for determining the liability is the major drawback of *tachsiv*, although it has been argued that it is more accurate compared to other presumptive tax regimes and gives rise to lower tax operating costs (Yitzhaki, 2007, pp. 315-323)

In contrast with *forfait* and *tachsiv* which are no longer operating, *studi di settore* has been applied in Italy since 1998 (Santoro, 2017, p. 795; Santoro & Fiorio, 2011, p. 104). Notoriously Italy has suffered one of the largest shadow economies[54] among EU countries (Murphy, 2012, pp. 11-13), and so has some compliance issues similar to those of developing countries, including a substantial percentage of SMEs many of which operate in that shadow economy. It has been argued, therefore, that the implementation of a system along the lines of the *studi di settore* system could be applied to manage similar issues in developing countries (Arachi & Santoro, 2007, p. 226).

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[54] The shadow economy is in many ways a blurry concept (J. J. Thomas, 1992). Other studies have described it as the informal, hidden, black, underground, gray, clandestine, illegal, or parallel economy (M. H. Fleming, Roman, & Farrell, 2000). Generally, it is defined as all economic activities that would generally be taxable were they reported to the tax authorities (Schneider & Enste, 2013).

Studi di settore or business sector analysis, works primarily as an audit selection mechanism (Santoro, 2008). The application of the system proceeds as follows. First, the tax authority invites various firm representatives to discuss the optimal turnover in their respective industries. It then applies statistical analyses of variable inputs (e.g. office area, hired employees, customer types, disbursed costs) for each specific industry. Finally, it establishes a benchmark turnover threshold for each industry. For the taxpayers' part, they understand all the variables and the threshold and utilise particular software to estimate their turnover. Therefore, when a taxpayer reports turnover below the presumed threshold, the taxpayer may be subject to a tax audit (Arachi & Santoro, 2007, p. 235).

Presumptive Tax Regimes Based Upon Turnover

Compared with other methods, a presumptive tax based on turnover is the simplest and most widely used. It is mostly applied to levy a lump sum minimum tax irrespective of the taxpayer's income and expenditure. Moreover, it has some advantages such as imposing the minimum possible compliance obligations (simple record-keeping), and being relatively straightforward and universally recognised by even a small business taxpayer. However, it also has a critical disadvantage in that turnover does not necessarily reflect the actual income of the taxpayer. A particular taxpayer may have not only high turnover, but also high expenses and as a result may be operating at a loss. Thus, when the presumptive tax is imposed on the taxpayer on this basis, it imposes an unfair burden on that taxpayer (Haque, 2013, pp. 135-138).

An alternative presumptive regime based on turnover is the patent system (Iordachi, 2016). Mostly administered by local governments, the patent system has been applied to micro and small businesses in emerging countries (Engelschalk, 2005b; IFC, 2007). Some countries (e.g. Albania, Hungary) have applied simply a specified amount for all micro businesses, whereas other countries (e.g. Bulgaria, Poland) have utilised detailed criteria of business activity and the amount of the patent fee has been determined on an industry by industry basis (Iordachi & Tirlea, 2016, p. 14).

To conclude, various studies have proposed measures to alleviate the regressive feature of compliance burdens that would hamper SMEs' growth. It is important to note that all the measures are intended to bring SMEs to the tax net, and are not meant to be incentives for them to stay small (Benedek et al., 2017). While presumptive taxation seems to be a practical measure, the implementation should be combined with other viable measures to encourage greater compliance behaviour as well as to reduce the compliance costs.

3.5. The Psychological Costs of Compliance

The previous section has explained various difficulties faced by SMEs especially related to complying with the tax law and efforts to reduce the burdens. This section discusses another critical issue in the literature related to tax compliance costs, namely the psychological costs of tax compliance.

At the outset, it can be noted that the psychological burdens issue is quite a complex one. It not only involves use of diverse terms (e.g. stress, distress, burnout, depression, worry, anxiety, hassle), but also the knowledge derived from various disciplines (e.g. neuroscience, biology, psychology, epidemiology, anthropology, and sociology). As a result, overlaps among the studies are common. To carry out the examination of psychological costs for the purposes of this thesis, it is necessary first to review the issue of psychological burdens in general terms, then the issue of specific burdens related to entrepreneurs, and finally psychological costs of taxpayers.

3.5.1. Psychological Burdens in General

The notion that unfavourable conditions and unfortunate life experiences cause disorder and health issues has long been discussed. It has been argued that psychological burdens have been analysed since the Roman Empire (D. B. King, 2009, p. 70). A medical doctor named Claudius Galenus (129–200AD) reported a patient who experienced various puzzling physical illnesses. However, during the examination, Galenus could not find any physical ailment causing the symptoms. After some observations, he suspected that the patient's condition was a result of an unconscious psychological disorder. Galenus' examination thus initiated the study of psychological health as related to changes in physical health (Moksnes & Espnes, 2015, p. 3).

Despite the variation in the concepts of psychological burdens and the terms by which they are described across the literature, a broad consensus has emerged that such

burdens are associated with stress.[55] Thus, it is pertinent to examine the literature of stress, the theories developed in this field, and how stress can be measured appropriately. There are at least four approaches in stress theory: the fight-or-flight response; the tend-and-befriend biobehavioural pattern; the conservation of resources perspective; and the cognitive-relational theory.

First, the fight-or-flight response has been considered as a bodily system reaction to a threat from the outside, especially in surviving and adapting in a high-risk environment. Inspired by Bernard's studies (Bernard, 1865, 1876, 1878) of *le milieu inte´rieur* (the internal environment),[56] and reinvigorated by Henderson and Haldane (Haldane, 1929; L. J. Henderson, 1927), the field saw a landmark evolution with Cannon's development of the concept of homeostasis to illustrate how stressors affect the body system (Cannon, 1915, 1932).[57] He argued when someone encountered a harmful situation, the emotional and physiological systems in the person's body would activate the Sympathetic Adrenal Medullary (SAM) axis, produce various hormones (e.g. adrenalin, epinephrine, etc), and generate a "fight-or-flight" response (Cannon, 1914). Then, while the individual might be able to handle the initial

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[55] Even though the terms "stress", "distress", and "disease" seem to be straightforward and distinctive, all three have experienced frequent meaning changes and are actually related to each other. While "stress" was initially used in the 15th century as a simple form of "distress", "disease" initially was referring to "dis-ease" or discomfort, a manifestation of distress (Rees, 1976).

[56] Claude Bernard was a French physiologist, famous for his immense contributions in medicine such as the identification of chemical compositions in the digestion system, the discovery of production and storage of glycogen, and the analyses of body heat and the nervous system (Bernard, 1843, 1849, 1858).

[57] Homeostasis derives from the Greek term *homeo* meaning similar. It refers to a relatively constant condition of the internal environment in responding to fluctuations in the external environment. However, while it may be able to alleviate a limited disturbance, the body system is vulnerable to huge changes (S. J. Cooper, 2008, p. 424).

stages and low-level of stressors well, lengthy exposure to unbearable stressors would break down the biological system.

Another researcher, Selye, subsequently adopted a similar approach to Cannon (Selye, 1955, 1975, 1976b). Selye introduced "strain" as the emotional and physiological response to stress, and developed the General Adaption Syndrome (GAS) based on the observations of strains (Selye, 1950a, 1950b, 1956). GAS involves three accumulative stages: the alarm stage, the resistance stage, and the exhaustion stage. Interestingly, Selye envisaged a dichotomy in the concept of stress and distinguished negative stress (distress) from positive stress (eustress), arguing that both give rise to a similar response (Selye, 1976a). Overall, the GAS theory comprises three main postulates: harm is the cumulative essence of the effects of stress; serious pathological consequences ensue when the effects outweigh one's capacity to cope; and there is an additive feature in stress as a result of the biological system responding similarly to different risks, so that the reaction to those threats then increases with prolonged exposure.

In contrast with the fight-or-flight response which is a more predominant feature of men's behaviour, the tend-and-befriend biobehavioural pattern has been proposed as a more relevant feature of women's responses to stress (S. E. Taylor et al., 2000, p. 412). Tending implies developing activities aimed at preserving the individual and offspring that increases safety and minimises distress whereas befriending refers to producing and maintaining social networks (S. E. Taylor, 2006, p. 275). The tend-and-befriend biobehavioural pattern contributes to the establishment of social groupings,

specifically related to female relations, for the greater exchange of resources and responsibilities.

Another stress viewpoint is the Conservation of Resources (COR) perspective (Hobfoll, 1989). It has been proposed to address the positive impacts of stress while most theories have a tendency to ignore the positive impacts (Moksnes & Espnes, 2015, p. 7). Resources refer to objects, individual characteristics, circumstances, or energies which are beneficial to accomplish various outcomes. Thus, stress happens when resources are missing or endangered. Furthermore, people will attempt to reduce the net loss of the resources when dealt with stressors and generate resource surpluses as precautions of future loss when not stressed (Hobfoll, 2001).

Finally, the cognitive-relational theory expands upon the process of cognitive appraisal when a stressful situation occurs (Lazarus & Launier, 1978). It also considers that the mediating role of the psychological process (between the environment and the individual's response) is more fundamental than the stressful experience itself. As a result, it is also famously known as the transactional theory (Lazarus & Folkman, 1987). Two critical aspects of this theory are coping (the capability to cope with a stressful situation), and appraisal (coping capability is related to the appraisal process). For example, when suffering a critical illness or experiencing unexpected job loss, an individual may say "I must attempt to think positively" or "I have the opportunity to pursue a job that I really enjoy" (Lazarus, 1999; Lazarus & Folkman, 1984; S. E. Taylor & Stanton, 2007).

The cognitive-relational theory has argued that an individual applies three stages of appraisal in analysing a stressful situation. First, the primary appraisal assesses whether a situation is irrelevant, benign (positive), or stressful. If this assessment identifies the situation as stressful, the secondary appraisal examines whether the individual's own capacities or resources are sufficient to manage the challenge, harm, or threat of the situation. Then the reappraisal process emerges as the final stage when a dynamic situation continuously changes and provides new information, which could lead to an assessment of either less stress or more stress. The more confident the individual is in their capacity to manage harms and threats, the greater the chance the individual will be challenged rather than intimidated (Folkman, Lazarus, Gruen, & DeLongis, 1986; Lazarus, 1993a, 1993b; Lazarus, DeLongis, Folkman, & Gruen, 1985; Lazarus & Folkman, 1986).

In the above context, cognitive-relational theory has transformed the concept of stress substantially. Previously stress was seen as only an attribute of a static situation (e.g. a dangerous situation), focused more on an individual for a certain period. In contrast, the modern concept of stress has expanded on an understanding of a more dynamic environment, so that stress is considered an evolving relationship between the environment and an individual, and covers a continuous set of transactions between the environment and the individual over time (S. Cohen, Kessler, & Gordon, 1995; Gunnar & Quevedo, 2007; Lazarus & Folkman, 1984; Weiner, 1992).

Following the above review of the various approaches in defining stress, it is necessary now to turn to an examination of a variety of stress measurement methods.

Generally, stress assessment can be analysed by two approaches: physiological measurement and psychological appraisal (Monroe, 2008, p. 36). The former heavily depends on researchers analysing tools and devices such as physiological markers (Dulleck et al., 2016) whereas the latter relies on respondents' self-reporting. Each of these is discussed in turn.

Physiological measurement is undertaken by observing physiological stress reactions. These reactions may take various forms, such as increases in eye pupil size, heart rate, blood pressure, and respiratory rate (Iorizzo, 1992, p. 62; Moksnes & Espnes, 2015, p. 8). For that reason, a physiological marker is needed in assessing such reactions. A major issue of this method is the difficulty to measure stress accurately due to the interactive and dynamic features of the stress itself. As a result, medical scientists have attempted to develop a more reliable method in assessing stress.

As a finding that has facilitated more advanced measurement, various studies have revealed that in a stressful situation, the body system responds by activating not only the SAM axis, but also the Hypothalamic Pituitary Adrenocortical (HPA) axis (Hellhammer, Wüst, & Kudielka, 2009; Knorr, Vinberg, Kessing, & Wetterslev, 2010; Michels et al., 2013; Östberg, Låftman, Modin, & Lindfors, 2018; Van Eck, Berkhof, Nicolson, & Sulon, 1996). While the former produces adrenalin, the latter excretes cortisol which is relatively more straightforward to measure by analysing saliva samples especially in the early morning, when the cortisol levels are elevated (Butler,

Klaus, Edwards, & Pennington, 2017; Clow, Hucklebridge, Stalder, Evans, & Thorn, 2010).

Another advanced approach involves analysis of the allostasis load.[58] Some of the parameters used in examining the allostasis load are: systolic and diastolic blood pressures; adrenalin and cortisol excretion in 12-hour urine samples; and the percentage of High-Density Lipoprotein (HDL) to total cholesterol levels (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997, p. 2260).

Nevertheless, despite being perceived as delivering more reliable assessments, applying the physiological approach is considered high-cost, not only in monetary terms (e.g. the cost of providing a physiological marker, involving saliva or urine tubes, and the analysing devices), but also in non-monetary terms (the preparation and implementation of measuring physiological features being time and labour intensive). Therefore, an alternative method, psychological appraisal, has been strongly suggested due to its advantages in terms of being reasonably inexpensive and relatively straightforward.

The psychological appraisal methods have become very numerous due to the different viewpoints involved in this field. Differences have emerged particularly in terms of

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[58] Allostasis load is a consequence of prolonged stress hormones in the body system (McEwen, 1998a) which has been argued to be a critical factor in various health problems such as post-traumatic stress disorder (PTSD), bipolar disorder, depressive illness, cardiovascular disease, and other systemic disorders (Epel et al., 2006; Grande, Magalhães, Kunz, Vieta, & Kapczinski, 2012; McEwen, 2000; Wingfield, 2005). Allostasis means stability through changes (Sterling, 2004, 2012). It is an enhanced concept of homeostasis to explain better broad bases of various morbidity (Sterling & Eyer, 1988). While homeostasis waits for faults then repairs the errors, allostasis applies previous cognisance, both inherent and learned, to circumvent faults and reduce them (McEwen, 1998b; McEwen & Stellar, 1993; Sterling, 2014).

whether studies have examined external challenges (environment appraisal), perceived coping resources, or any of various other subjects. Some of the approaches based on environment appraisal are the schedule of recent experiences (N. G. Hawkins, Davies, & Holmes, 1957), the social readjustment rating scale (Holmes & Rahe, 1967), the stressful live events assessment (Dohrenwend, 1973), the daily hassles assessment (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982), the perceived stress scale (S. Cohen, Kamarck, & Mermelstein, 1983), the Maslach burnout inventory (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1986), and the Kessler psychological distress scale (Kessler et al., 2002). Moreover, the perceived coping resources perspective approach has been adopted by several studies such as the job satisfaction assessment (Locke, 1969), the psychological general well-being index (Dupuy, 1984), the satisfaction with life scale (Diener, Emmons, Larsen, & Griffin, 1985), the World Health Organisation (WHO) five well-being index (WHO, 1998), the questionnaire of competence and control (Krampen, 1991), the generalised self-efficacy scale (Schwarzer & Jerusalem, 1995), and the job demands−resources theory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In addition, some methods have attempted to examine specific subjects such as the work-related stress assessment (Karasek, 1979), the teacher burnout scale (Seidman & Zager, 1986, 1991), and the adolescent stress questionnaire (D. G. Byrne, Davenport, & Mazanov, 2007).

The combination of both of the main approaches above, to some extent, has led to some measure of consensus. First, it appears that women have been found to suffer stress more than men have (S. Cohen & Janicki-Deverts, 2012; Hyde, Mezulis, & Abramson, 2008; Kuehner, 2003; Moksnes & Espnes, 2012, 2013). The disparity might

have occurred due to women tending to be more emotionally expressive and considering their socialised gender role to a greater extent. For example, women are more open in reporting psychological issues, and in a relationship, a woman tends to consider not only herself, but also her spouse and children as well (M. C. Davis, Matthews, & Twamley, 1999). Furthermore, people with higher socioeconomic status (SES) such as in education and income have been suggested to have greater coping ability than those with lower SES (Adler et al., 1994; Iregui-Bohórquez, Melo-Becerra, & Ramírez-Giraldo, 2015; Kok, 2016; Zajacova & Lawrence, 2018). Given that empirical evidence has revealed that some social conditions such as poverty, lower level of education, and unemployment have severe impacts on psychological burdens for people (Dooley, Fielding, & Levi, 1996; Lynch, Everson, Kaplan, Salonen, & Salonen, 1998), the government needs to mitigate those unfavourable conditions and foster better social life conditions through prudent public policy (Stiglitz & Rosenberg, 2015).

Summing up, the detrimental effects of stress have been empirically analysed. While stress is relatively unavoidable and the response to stress is therefore the more important issue, it is helpful to enhance self-capacity to adjust perceptions of control over the environment (Karasek, 1979; Spector, 1982). Furthermore, the findings as to usefulness of various medications to reduce stress have been inconclusive, so that it is beneficial to consider a more natural way of achieving this outcome such as through seeking solid social support, undertaking physical exercise, having regularly rest, and cultivating altruism (S. Cohen & Wills, 1985, p. 348; Selye, 1976a, p. 56).

3.5.2. Psychological Burdens of Managing Businesses

The previous section has explained the key considerations relating to psychological burdens in general. This section moves to an analysis of the relevant issues involved in relation to the psychological burdens on entrepreneurs.

Given their many distinctive roles (e.g. as proprietors, key persons in the business, breadwinners in the family), entrepreneurs have higher risks of suffering distress than employees (Andersson, 2008; Cardon & Patel, 2015). Various pressures, such as to sustain their business, provide financial support for family and employees, and decide the business's direction, may give rise to psychological burdens (Cocker, Martin, Scott, Venn, & Sanderson, 2013; Rauch, Wiklund, Lumpkin, & Frese, 2009). As a result, entrepreneurs tend to work excessively (Gorgievski, Bakker, & Schaufeli, 2010; Lechat & Torrès, 2016), and the combination of the other pressures and long intensive work hours eventually could cause burnout (Lee & Ashforth, 1996; van der Hulst, 2003).[59]

The prevalence of burnout of entrepreneurs has been analysed in some studies (Ben Tahar, 2014; Shepherd, Marchisio, Morrish, Deacon, & Miles, 2010; Tetrick, Slack, Da Silva, & Sinclair, 2000; Wincent & Örtqvist, 2009). Among various factors, job demands have been suggested as a main predictor of burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2000, p. 454; Lee & Ashforth, 1996, p. 129; Schaufeli & Bakker, 2004, p. 293). People with severe burnout have been found to have exposures substantially

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[59] Burnout has been described as the condition of physical, psychological, and mental exhaustion (Pines & Aronson, 1988; Schaufeli & Greenglass, 2001).

associated with higher job demands such as overload roles, high work pressures, emotional burdens, and poor working conditions (Alarcon, 2011, p. 562; Bakker, Demerouti, & Verbeke, 2004, p. 86). Job demands are described as various aspects (e.g. physical, social, or organisational) of the occupation which need continued physical or psychological efforts (Demerouti et al., 2001, p. 501). Some studies have introduced job demands as perceived stressors. For example, Shepherd et al have examined the extent to which perceived stressors such as role conflict, role ambiguity, and role overload are positively correlated with entrepreneurs' burnout (Shepherd et al., 2010, p. 76) whereas Tetrick et al have argued that the effect of perceived stressors on professional satisfaction are partially mediated by emotional exhaustion (Tetrick et al., 2000, p. 464).

In addition to job demands, particular events and factors have been suggested to cause particular effects in terms of entrepreneurs' burnout (Fernet, Torrès, Austin, & St-Pierre, 2016; Lechat & Torrès, 2017). Bankruptcy and financial problems have been listed as the two most severe event-based stressors (Lechat & Torrès, 2017, p. 553) whereas factors such as occupational loneliness and entrepreneurial orientation consequently have been suggested as mediators or moderators between job stressors and burnout in SMEs (Fernet et al., 2016, p. 48).[60]

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[60] A mediator (M) explains why or how a correlation occurs between an independent (X) and a dependent variable (Y) whereas a moderator (W) describes when or for whom particular effects happen (Montoya, 2018, p. 1). The mediation-moderation relationship is an application of conditional process analysis (Hayes, 2018).

Notwithstanding the negative physical effects, the psychological burdens on entrepreneurs have been seen as entailing some positive impacts (Cardon & Patel, 2015, pp. 402-403). Cardon and Patel have argued that stress has a positive financial effect which could be a reason why entrepreneurs tend to work excessively and thus put risks on their health. The notion has also been confirmed that income is a powerful motivation of entrepreneurs, stronger than risk and independence (E. J. Douglas & Shepherd, 2002, p. 88). Further, stress has also been argued as enhancing the entrepreneurs' capability in learning new things, making decisions, and solving problems (M. A. Davis, 2009; Foo, Uy, & Baron, 2009; Ganster, 2005).

To conclude, the psychological burdens of managing a business have both positive and negative effects. Nevertheless, for entrepreneurs it may be beneficial to have social support considering the risk of occupational loneliness and tendency to work independently (Tetrick et al., 2000, p. 473).

3.5.3. Psychological Burdens of Taxpayers

Psychological costs in the context of taxation have been mentioned consistently in both the popular media (Sommer, 2019; D. Taylor, 2018) and academic research (Dulleck et al., 2016; K. D. Thomas, 2015). Perhaps due to the fact that taxpayers do not receive direct benefits from government services at the same time as they pay tax (Rosenberg, 1996), they mostly perceive there to be psychological burdens associated with paying tax (Brockmann, Genschel, & Seelkopf, 2016, p. 385; Lamberton, De Neve, & Norton, 2014, p. 2).

Generally, age has been confirmed as a significant factor determining the levels of psychological burdens in this context. Studies have shown that psychological costs are mostly perceived by senior citizens and are prevalent among taxpayers above 55 years old (Lopes & Martins, 2013, p. 58; Sandford et al., 1989, p. 18). Furthermore, changes in the tax system also affect the perceived psychological burdens. For example, studies in Australia have compared the psychological burdens before and after introducing GST and tax simplification (Tran-Nam & Glover, 2002a; Woellner, Coleman, McKerchar, Walpole, & Zetler, 2007).

In recent decades, researchers have attempted to focus on the influence of certain tax compliance activities on psychological disturbance. For example, a study in Portugal has argued the complexity of the tax law imposes various levels of stress on taxpayers who have to understand and apply tax law and its administration (Lopes & Martins, 2013, p. 58). Moreover, two studies in New Zealand have suggested that perceived tax compliance (e.g. paperwork and cash outflow to comply with the tax law) and tax compliance activities (e.g. preparing and lodging returns such as those required for GST or PAYE) are associated with headaches and worries (Yong, 2011, p. 90) and are a source of stress for taxpayers (Alexander et al., 2005, p. 48). Another interesting finding was that in the USA, Redelmeier and Yarnell (2013, p. 13) have argued that the stress caused by tax deadlines may be positively related to a higher number of fatal accidents on the road.

Compared with opportunity costs, psychological costs have been considered to be more complex due to their intangible nature. A study in Bangladesh has proposed a unique method to measure such costs (Faridy et al., 2016, p. 187). This study analysed the average annual burden on taxpayers in the form of the consumption of medication to induce sleep, consumption of tobacco, and consultation fees paid to psychologists or psychiatrists to reduce the perceived stress in complying with VAT regulations.

For the analysis of the issue in this thesis, a mediation analysis by using SEM is proposed. The principal analysis and the justifications will be elaborated shortly in Chapter 4.

3.6. The Literature Gaps

As noted in Section 1.2, the purpose of this research is to examine the compliance costs of individual SMEs in Indonesia and to compare the extent of those costs as between the country's presumptive and the conventional tax regimes. A vast compliance costs literature has been produced and many researchers have analysed the subject from various perspectives (Eichfelder & Vaillancourt, 2014). Nevertheless, to the best of the author's knowledge, at least from a developing country perspective, there has been no study that has examined in detail (i.e. incorporating both opportunity and psychological cost components) the tax compliance costs of individual SMEs in Indonesia and compared the costs as between the two alternative tax regimes in that country.

Therefore, the central objective and research problem of the study can be stated as follows:

To what extent does the presumptive tax regime influence the tax compliance costs of individual SMEs in Indonesia?

To consider both opportunity and psychological aspects, the study needs to adopt a combination of two approaches to collecting and analysing data. The qualitative approach is beneficial not only to explore the psychological costs, but also to establish the survey instrument. Then, the quantitative approach is necessary to analyse the opportunity cost variables and the proposed analysis of the indirect effect of psychological costs.

Therefore, the study applies positivism as the research framework and adopts a mixed-methods approach. All relevant aspects of this research methodology will be presented in the next chapter.

3.7. Conclusion

This chapter has reviewed the concept of tax compliance costs in its larger context. It commenced by identifying tax administration costs (Section 3.2), revealing that administration costs have both an inverse and a direct relationship with tax compliance costs (Section 3.3). After explaining the composition of tax compliance costs (Section 3.3.1), the chapter then explored both some conceptual issues and one

technical issue related to the studies (Section 3.3.2), and developed a classification of the studies by reference to their subject, focus, geographical research, data collection method, and main findings (Section 3.3.3).

Secondly, efforts to reduce tax compliance costs were explained in Section 3.4. The section concluded that each of the efforts endeavouring to reduce tax compliance costs is not risk-free and should be exercised with caution so as to ensure that taxpayers are encouraged to grow larger. Moreover, it was shown that presumptive tax regimes have achieved greater prevalence due to the simplicity offered. Again, the application of such regimes should be carried out with due consideration to combining the regimes with effective measures to enhance taxpayers' compliance.

Finally, Section 3.5 examined the concept of psychological burdens in a systematic analysis moving from the general perspective to the specific considerations relevant to the tax compliance cost field. Analysing the pertinent literature, the study then suggested that an appropriate approach to take in this study in order to examine the psychological burdens perceived by taxpayers would be one based on indirect effect analysis.

Following on from the above foundations established for the thesis, the next chapter elaborates on the research design that has been adopted for this thesis, including the research framework, research approach, data collection strategies, data analysis approaches, and ethical considerations utilised in the study.

Chapter 4: **RESEARCH DESIGN**

4.1. Introduction

The preceding chapter reviewed the relevant literature and explored the broad range of findings in that literature related to tax compliance costs including those of individual SMEs. It then identified the gap in the literature that this study seeks to address, namely a close consideration of the tax compliance costs of individual SMEs in Indonesia and comparison of those costs as between the two alternative tax regimes in that country of the presumptive and conventional enterprise tax regimes. This chapter explains the research design which the thesis has adopted as useful to guide the achievement of these objectives of the study. In doing so, it develops the specific hypotheses that will be tested in this thesis.

This chapter is organised as follows. After this introduction, Sections 4.2 and 4.3 identify, respectively, the research framework (Creswell, 2003; Mertens, 2005) and the research approach (Lund, 2012; Williams, 2007) adopted in the study. To establish the research questions and develop appropriate hypotheses, two conceptual models are illustrated in Section 4.4. Following a description of the strategies and procedures related to the data collection (Kothari, 2004, pp. 7-10) in Section 4.5, an outline of the data analysis approaches is discussed in Section 4.6. After describing the ethical considerations in Section 4.7, conclusions are drawn in Section 4.8.

In the above context, it can be noted at the outset that research design can be broadly classified into three categories: exploratory, descriptive, and causal (Malhotra, 2010, p. 104). The more underexplored the topic, the more likely it is that the adopted design will be exploratory. In contrast, a causal research design should only be applied when appropriate evidence has been accumulated about the topic (Burns, Veeck, & Bush, 2017, p. 93). Moreover, causal research controls the predictors to establish the effect on the outcomes whereas descriptive research exercises non-manipulative variables (Bryman, 2016, pp. 44-56). For that reason, this study applies a descriptive research design and, as the data collection is only undertaken at one point in time, it is considered a cross-sectional study.[61]

4.2. Research Framework

Given that research is an ongoing process of critically reflecting and learning from previous research and that it has been argued that the substance of research lies in the process, not merely the outcome, it is important that a researcher identifies an appropriate research framework, which is useful to indicate the primary assumptions that guide the research process (McKerchar, 2010, p. 63).

Figure 4-1 highlights the role of the research framework in the process of making a contribution to the body of knowledge.

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[61] Another type of descriptive research design is the longitudinal study, adopted when the specific point of interest is repeated during a certain period (Burns et al., 2017, p. 99).

Figure 4-1: Research Design in Contributing to the Body of Knowledge

Research framework	→	Methodology (approach)	→	Method(s) (means)	→	Contribution to the body of knowledge
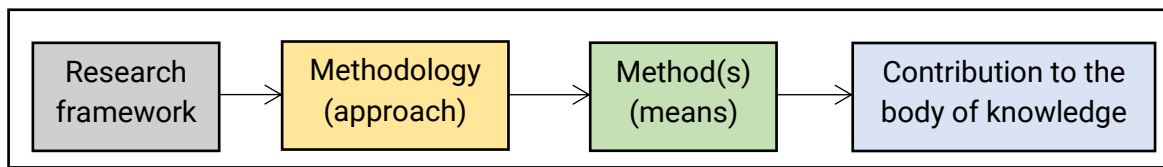
Source: adapted from "Design and conduct of research in tax, law and accounting" (McKerchar, 2010, p. 64).

Generally, in social science research a research framework can involve either positivism or interpretivism (Creswell & Clark, 2017; McKerchar, 2010; M. Saunders, Lewis, & Thornhill, 2016). Positivism typically applies deductive reasoning, verifies a theory, and adopts the quantitative approach whereas interpretivism usually employs inductive reasoning, constructs a theory, and utilises the qualitative approach (Creswell, 2014). Pragmatism lies somewhere between these two contrasting frameworks. It focuses on solutions to problems and generally uses all approaches (quantitative and qualitative or mixed-methods) to solve the issues (McKerchar, 2008; Patton, 1990; Tashakkori & Teddlie, 2010).

Positivism adopts realism and objectivism as its basic principles (Scotland, 2012, p. 10). First, it seeks a reality that prevails independently of the researcher (Pring, 2000b, p. 59). To derive knowledge, the researcher records observations (directly) or accumulates data, evidence, and information from the participants (indirectly). Secondly, it analyses what causes or what influences the outcomes through predictions and generalisations (Creswell, 2014). As a result, quantitative (numerical) data are often generated through analysis such as descriptive and inferential statistics. Finally, it emphasises reliability and validity to satisfy the objectives of the research. Reliability is concerned with the replicability of research whereas validity

highlights the integrity of the research findings (Bryman, 2016, p. 41; Kumar, 2014, pp. 212-213).

In contrast, interpretivism adopts relativism and subjectivism as its essential fundamentals (Scotland, 2012, p. 11). First, it explores reality which is mediated by one's senses. Knowledge is accumulated through interactions with objects or phenomena. Only when consciousness relates with objects (which are already meaningful) does reality emerge (Crotty, 1998, pp. 42-44). Moreover, it utilises qualitative (consisting of words) rather than quantitative (numerical) approaches in collecting and analysing data (Bryman, 2016, p. 374). Given that everyone may construct meaning in various differing ways (Crotty, 1998, p. 9), reality can only be established when there is an agreement of co-constructors (Pring, 2000a, p. 251). Interestingly, interpretivism emphasises similar criteria for good research, namely reliability and validity. The criteria are established when research generates rich and deep evidence, provides reliable and reasonable interpretations and others can apply and replicate the research process and findings (Cohen, Manion, & Morrison, 2007, p. 133-149; Richie & Lewis, 2003, p. 263-286).[62]

This study applies positivism as the basis for its research framework. This basis considers that the theories, concepts and ideas of tax compliance costs constitute a continuous process from which a better understanding of the field can be derived (Strübing, 2007, pp. 557-558). It also assumes that tax compliance costs are context-

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[62] Some argue that the criteria in qualitative research are not as necessary as those in quantitative research (see the discussion in (Bryman, Becker, & Sempik, 2008, p. 274; Mangioni & McKerchar, 2013, p. 179).

dependent (Morgan, 2014) or related to the dependent variables such as business size and selected tax regime. Consequently, research findings from the literature are applied as critical instruments of plan and action to generate practical outcomes to assess such costs (M. N. K. Saunders, Lewis, & Thornhill, 2019, p. 151). Therefore, the study recognises that flexible methods and approaches will be needed to satisfy the aim of the research (McKerchar, 2010).

4.3. Research Approach

The previous section has identified the positivistic research framework that has been adopted in this study. This section moves on to set out the reasoning for adoption of the chosen research approach for the thesis within this framework, namely the mixed-methods approach.

Table 4-1 reviews some characteristics that generally apply to the concepts of qualitative and quantitative research.

Table 4-1: The Differences Between Quantitative and Qualitative Research

Qualitative	Quantitative
Words	Numbers
Participant's point of view	Researcher's point of view
Researcher close	Researcher distant
Theory constructing (inductive)	Theory verifying (deductive)
Dynamic	Static
Unstructured	Structured
Contextual understanding	Generalisation

Rich, deep data	Hard, reliable data

Source: adapted from "Research social methods," (Bryman, 2016, p. 401).

This study applies the mixed-methods approach for various reasons. First, the approach derives the advantages of both qualitative and quantitative approaches as well as offsetting the limitations of each approach (Creswell & Clark, 2017). Moreover, it also enables the researcher to gain a more comprehensive understanding of an issue which is useful to facilitate an objective of solving a particular problem (Alley & Bentley, 2008, p. 127; Bryman, 2008, p. 91; Mangioni & McKerchar, 2013, p. 176). Nevertheless, it also has drawbacks. It needs more resources compared with research that applies just a single method (Komara, 2017, p. 43), and it does not always produce expected results (Teddlie & Tashakkori, 2009).

In specific terms, the study embraces an exploratory sequential mixed-methods approach. It is better illustrated as "qual $\rightarrow$ QUANT", where a qualitative phase precedes a quantitative phase (Creswell, 2014).[63] The qualitative phase serves as a complementary (or secondary) method to the quantitative phase (the primary method), as the responses from the participants in the preceding phase are analysed and applied to develop the measurement instrument in the latter phase (R. Cameron, 2009; Onwuegbuzie, Bustamante, & Nelson, 2010). Studies have shown that the "qual $\rightarrow$ QUAN" approach has the advantage of creating original ideas and developing existing knowledge (Greene, Caracelli, & Graham, 1989; Mbuagbaw et al., 2014).

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[63] Two other mixed-methods approaches are the convergent parallel and explanatory sequential mixed-methods approaches (Creswell, 2014). In the former case, a researcher collects both types of data at roughly the same time whereas in the latter, a researcher conducts a quantitative approach first then a qualitative approach.

4.4. Research Questions and Hypotheses Development

To analyse the tax compliance cost issues in this study comprehensively, the study examines various factors and components which underlie the costs. Figure 4-2 highlights the conceptual model of the study to illustrate the steps in the analysis.

Figure 4-2: Conceptual Model of the Study
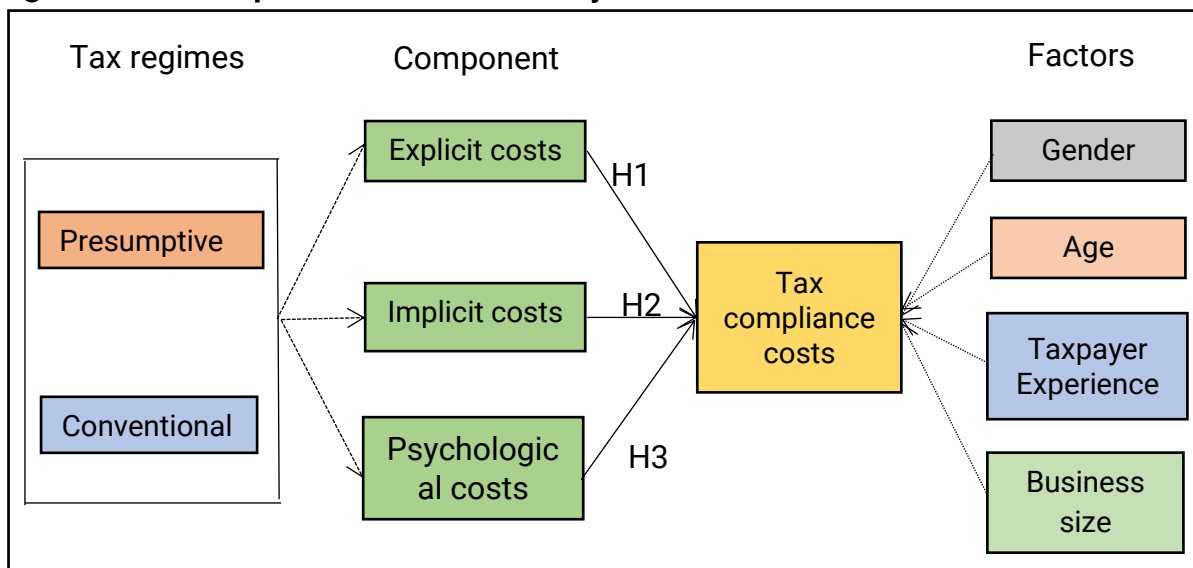
On the basis of this conceptual model, it is now possible to establish the research question and seven hypotheses related to the study.

4.4.1. Primary Research Questions

To achieve its objectives, the study proposes a series of primary research questions related to the incidence, magnitude, and drivers of the tax compliance costs incurred by individual SMEs in Indonesia, more particularly:

(1) to what extent do the tax compliance costs of individual SMEs in Indonesia differ as a result of those taxpayers being in the presumptive tax regime or the conventional tax regime? (**Primary Research Question 1**);

(2) what is the magnitude of the tax compliance costs of individual SMEs in Indonesia? (**Primary Research Question 2**);

(3) what are the main determinants or drivers of the tax compliance costs of individual SMEs in Indonesia? (**Primary Research Question 3**).

While the first and the third of these questions follow from the broad nature of the field addressed in the thesis, the second requires a little more explanation, as set out in the remainder of this section below along with discussion of the process of development of the specific hypotheses designed to provide an answer to each of the Research Questions.

The Influence of a Selected Tax Regime to the Tax Compliance Costs

As explained in previous chapters, tax compliance costs have three broad components and individual SMEs in Indonesia face dual tax regimes. Considering the

evidence, it is useful to address the second of these primary research questions in three complementary analyses. Those entail determining the extent to which the application of a selected tax regime (either the presumptive tax regime or the conventional tax regime) affects the explicit, implicit and psychological tax compliance costs of individual SMEs. Therefore, the hypotheses, respectively, are as follows:

(1) the presumptive tax regime leads to lower explicit tax compliance costs of individual SMEs compared to the conventional tax regime (**H1**);

(2) the presumptive tax regime leads to lower implicit tax compliance costs of individual SMEs compared to the conventional tax regime (**H2**); and

(3) the presumptive tax regime leads to lower psychological tax compliance costs of individual SMEs compared to the conventional tax regime (**H3**).

To generate more detailed analyses, the study also considers some control variables to detect the probability of spurious association.[64] According to the literature (Sections 3.3 to 3.5), these include gender, age, taxpayer experience, and business size (R. A. Baron, Franklin, & Hmieleski, 2016; Blaufus et al., 2014; Blaufus et al., 2019;

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[64] The establishment of control variables must be based on the following foundations: robust conceptual explanations of why the variables were selected and how the variables may affect the predicted outcomes as well as the hypothesised correlations among them, and robust evidence related the psychometric measurements (Aguinis & Vandenberg, 2014, pp. 586-587; Spector & Brannick, 2011, p. 302).

Eichfelder & Schorn, 2012; Lopes & Martins, 2013; Pollack, Vanepps, & Hayes, 2012; Vaillancourt et al., 2013).[65]

Hypotheses 1 to 3 therefore relate to the potentially significant differences in impact of the presumptive and conventional tax regimes that can apply to individual SMEs. The following section of this thesis moves on to describe the approach to hypothesis development in respect of the second under-explored aspect of tax compliance costs in Indonesia and elsewhere – the psychological costs of tax compliance.

Opportunity Costs and Psychological Costs

Estimating the association between opportunity costs and psychological costs, *a priori*, would appear to be justifiable to argue that the former might be capable of influencing the latter. Thus, it is reasonable to assume that every increase of opportunity costs will also increase the level of psychological burdens of individual SMEs in Indonesia. The hypothesis, therefore, is:

>   (4) opportunity costs are positively correlated with the psychological costs of individual SMEs in Indonesia (**H4**).

The Mediating Role of Tax Stressors

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[65] While gender has rarely been discussed in the context of explicit and implicit costs, it has been considered in great depth in the psychological literature (see the discussion in Section **3.5.1. Psychological Burdens in General**).

Tax stressors refer to those continuous physical or psychological efforts related to tax compliance which may cause cognitive and emotional disturbance to taxpayers. Just as the psychological burdens faced by entrepreneurs are derived from the demands of the role they adopt as businesspersons (see Section 3.5.2 for more details), the psychological tax compliance costs of taxpayers are also derived from the tasks imposed upon them by the tax law and its administration. Some of the tax stressors are maintaining record-keeping for tax purpose and undertaking administration obligations related to tax compliance.

It is therefore anticipated that opportunity costs give rise to tax stressors, which will eventually increase the psychological costs. Thus, opportunity costs also indirectly affect psychological compliance costs via the mediating variable, tax stressors. The study therefore proposes this mediating effect as a fifth hypothesis:

> (5) the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax stressors (**H5**).

The Mediating Role of Tax Disputes

The literature review, in Section 3.3.3, identified that the nature of the tax administration is one of the drivers of tax compliance costs. In estimating these costs, the study evaluates the interaction between the tax revenue authority and taxpayers (Braithwaite, 2003; Gangl et al., 2015). It also examines a further aspect of the tax administration in the form of tax disputes (Tran-Nam & Walpole, 2016).

In terms of tax disputes, Tran-Nam and Walpole (2016) have suggested that the existence of a tax dispute is associated with high tax compliance costs. Tax disputes may arise when taxpayers are audited or when an appeal or objection is lodged. This not only increases the opportunity costs, but also exacerbates the psychological burden (K. D. Thomas, 2015, p. 617), especially in terms of the psychological discomfort involved in the effort to seek justice in tax courts (Banoff & Lipton, 2004). Given that tax disputes are recognised as the antecedent of the interaction between the tax revenue authority and taxpayers (Tran-Nam & Walpole, 2016), there is a possibility that tax disputes mediate the relationship between opportunity costs and psychological costs.

Therefore, a final hypothesis is posited, based upon the assumption that a tax dispute may mediate the indirect effect of opportunity costs on psychological costs. This hypothesis is as follows:

(6) the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax disputes (**H6**).

Figure 4-3 summarises the hypotheses and introduces a proposed multi-mediator model to examine the correlation between tax stressors, opportunity costs, the particular tax regime, tax disputes, and psychological costs. Consistent with the analysis of opportunity costs, some variables (gender, age, taxpayers experience, and business size) are included in the proposed model.

Figure 4-3: Proposed Moderated Mediation Model
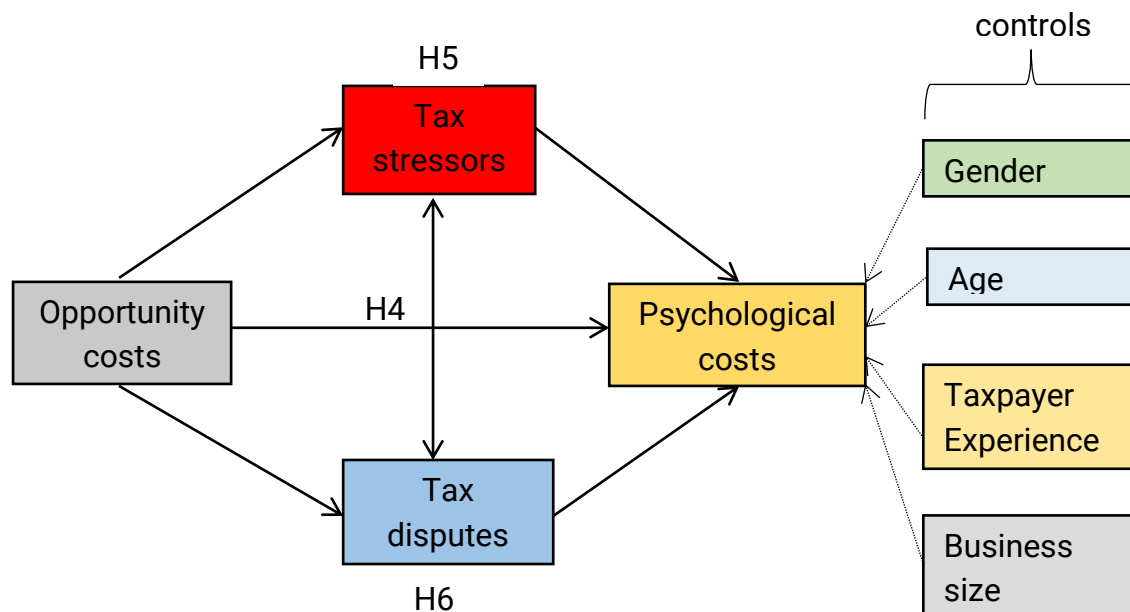
Source: adapted from "The psychological costs of owning and managing an SME: linking job stressors, occupational loneliness, entrepreneurial orientation, and burnout" (Fernet et al., 2016, p. 46), as discussed in Section 3.5.2.

4.4.2. Secondary Research Questions

The study has selected gender, age, taxpayer experience, and business size as control variables. The variables are therefore included in the secondary research questions to generate more robust analyses pertinent to the tax compliance costs of individual SMEs in Indonesia.

Table 4-2 lists a series of secondary questions that are prompted by the study.

Table 4-2: Secondary Research Questions

Secondary research questions (SQs)	Independent variable	Dependent variable

Influence of gender on tax compliance costs		
SQ1: Does gender affect tax compliance costs, and if so, how and to what extent?	Gender	Tax compliance costs
SQ1a: Does gender affect explicit tax compliance costs, and if so, how and to what extent?	Gender	Explicit costs
SQ1b: Does gender affect implicit tax compliance costs, and if so, how and to what extent?	Gender	Implicit costs
SQ1c: Does gender affect psychological tax compliance costs, and if so, how and to what extent?	Gender	Psychological costs
Influence of age on tax compliance costs		
SQ2: Does age affect tax compliance costs, and if so, how and to what extent?	Age	Tax compliance costs
SQ2a: Does age affect explicit tax compliance costs, and if so, how and to what extent?	Age	Explicit costs
SQ2b: Does age affect implicit tax compliance costs, and if so, how and to what extent?	Age	Implicit costs
SQ2c: Does age affect psychological tax compliance costs, and if so, how and to what extent?	Age	Psychological costs
Influence of business size on tax compliance costs		
SQ3: Does business size affect tax compliance costs, and if so, how and to what extent?	Business size	Tax compliance costs
SQ3a: Does business size affect explicit tax compliance costs, and if so, how and to what extent?	Business size	Explicit costs
SQ3b: Does business size affect implicit tax compliance costs, and if so, how and to what extent?	Business size	Implicit costs
SQ3c: Does business size affect psychological tax compliance costs, and if so, how and to what extent?	Business size	Psychological costs

Influence of taxpayer's experience on tax compliance costs		
SQ4: Does taxpayer's experience affect tax compliance costs, and if so, how and to what extent?	Taxpayer's experience	Tax compliance costs
SQ4a: Does taxpayer's experience affect explicit tax compliance costs, and if so, how and to what extent?	Taxpayer's experience	Explicit costs
SQ4b: Does taxpayer's experience affect implicit tax compliance costs, and if so, how and to what extent?	Taxpayer's experience	Implicit costs
SQ4c: Does taxpayer's experience affect psychological tax compliance costs, and if so, how and to what extent?	Taxpayer's experience	Psychological costs

4.4.3. Descriptive Research Questions

To provide a more detailed background related to the study, it is necessary to define some conceptual issues related to tax compliance costs. For that reason, a series of descriptive research questions are formulated to enable respondents (both tax advisers and taxpayers) to describe experiences and discover processes in satisfying the tax law and its administration. The questions generally seek to generate insights into particular activities, experiences, and processes that prevail within the context of complying with the tax law (Onwuegbuzie & Leech, 2006, p.482). Table 4-3 identifies a series of descriptive research questions that will also be adopted in the focus group discussions.

Table 4-3: Descriptive Research Questions

No.	Descriptive questions (DQ)

DQ1	How is an individual SMEs defined?
DQ2	What are the main differences between an individual SME who applies a presumptive tax regime and an individual SME who adopts a conventional tax regime?
DQ3	What do individual SMEs perceive about tax compliance costs?
DQ4	What does it mean for individual SMEs to comply with the tax law?
DQ5	What are tax compliance activities for individual SMEs?
DQ6	How do individual SMEs manage their tax compliance activities?
DQ7	What are the costs incurred while undertaking tax compliance activities?
DQ8	What do individual SMEs perceive the role of tax advisers to be in complying with the tax law?
DQ9	Are individual SMEs aware that after seven years of applying the presumptive tax, they must switch into the conventional tax?
DQ10	Are tax compliance costs a significant concern for individual SMEs? How do they generally feel about the costs?
DQ11	What factors generally make the costs incurred to comply with the tax law low or high for individual SMEs?
DQ12	What factors generally drive the costs incurred to comply with the tax law for individual SMEs?
DQ13	What factors generally make the costs incurred to comply with the tax law easy or stressful for individual SMEs?
DQ14	Do individual SMEs perceive psychological burdens when undertake tax compliance activities, and if so, how cumbersome are the burdens?
DQ15	If individual SMEs perceive that there are such burdens, in what way do they influence the tax compliance costs incurred?
DQ16	If individual SMEs do not perceive that there are such burdens, what prompts them to adopt that perception?

4.5. Data Collection Strategies

In order to address the primary research questions, the study has formulated six hypotheses together with a series of the secondary and descriptive research questions, all of which are related to those primary questions.

Having established this broad research approach or methodology, it is now necessary to consider the more specific aspects of the methods that will underpin this approach. The data collection strategy entails two parts and is outlined in the next section below.

4.5.1. Qualitative Phase

The strategy commences with a qualitative approach by conducting FGDs. The study has chosen FGDs to explore the complex issues involved in the study (tax compliance costs and the psychological burdens) qualitatively. Moreover, FGDs are not only beneficial to assess taxpayers' attitudes and opinions related to tax compliance costs, but are also deemed helpful to establish a clear understanding of the broader context of the compliance costs burden for individual SMEs in Indonesia (Carey & Asbury, 2016). Consequently, FGDs are considered useful in enhancing and developing the survey instrument in the next phase (Creswell & Clark, 2017; Morgan & Krueger, 1993; Sadan, 2014).

Focus groups have been acknowledged as a versatile data collection method through the dynamic interaction among the participants (J. Cameron, 2005, p. 157; Kitzinger, 1995, p. 299; Morgan, 2001, p. 142). To maximise the potential benefits, attentive planning prior to the execution of the focus group is necessary (Morgan, 1995, p. 516).

The planning entails some criteria that mostly appear and have been suggested as the features of ideal focus groups: inviting homogenous strangers as respondents; applying a relatively structured inquiries approach with an active role of the moderator; and organising six to ten respondents in a group (R. A. Krueger & Casey, 2002, pp. 4-5; Morgan, 1996a, pp. 142-146).[66] However, it may be relatively uncommon for all of these criteria to be satisfied in practice (Morgan, 1996b, p. 34).

The study prepared two FGDs: one session with tax advisers and another session with taxpayers. The participants of the FGDs were purposefully selected. Based on the experience (of taxpayers) or the expertise (of tax advisers), the participants were invited to attend FGDs. Taxpayers were expected to have been registered in the tax office administration for at least eight years whereas tax advisers who had been providing professional tax advice for a minimum of eight years were preferred. In recruiting potential respondents, the researcher had established communications with two main gatekeepers: the Indonesian tax consultants association in Surabaya and tax offices in Surabaya and Sidoarjo (both in East Java). Each of the gatekeepers was asked to invite six to ten potential respondents.

In designing the questions for the FGDs, the study applied a structured approach because the nature of the subject was relatively unfamiliar for the respondents (Morgan, 1995; Puchta & Potter, 1999). In contrast to a less structured approach which

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[66] In contrast with the ideal criteria that have been suggested, some scholars (Kitzinger, 1994; Liamputtong, 2011) have argued that different forms of standard group discussions are appropriate, such as discussions where respondents have known each other (non-strangers) and are from a heterogeneous background, and where there is more active interaction among respondents (a lesser role for the moderator). Thus, the best practice is not defined by rigid conditions but depends on the theoretical assumptions as to the nature and gaining of knowledge (epistemological assumptions) of the research itself (Freeman, 2006, p. 493).

contains more general questions and offers more flexibility, the more structured approach is considered more appropriate to generate more focused ideas during the discussions (Bennett, 2002; Morgan, 2001). Considering the selected approach, the questions raised for discussion in the FGDs were considered to be appropriate and indicative only. Therefore, a professional facilitator, who would be briefed in advance, was to direct the discussions to establish the information required to contribute to the refinement of the survey instrument.[67]

Sixteen open-ended questions were established to form the basis for the conduct of the FGDs. These questions were captured from the descriptive research questions and adopted the following structure: opening; introductory; transition; key; and ending questions (R. A. Krueger, 2002, p. 6; R. A. Krueger & Casey, 2002, p. 9).

Summing up, the data collection strategies adopted in the qualitative phase and the selection sampling are highlighted in Table 4-4.

Table 4-4: Data Collection Strategies in the Qualitative Phase

Approach – method	Respondents	Selection/ sampling
Qualitative – focus group discussion	• Tax advisers; • Taxpayers.	Non-probability sampling -purposive sampling.
Sampling design (qualitative)		
Target population	Tax advisers who have minimum experience eight years in providing tax advice for individual SMEs; and Individual SMEs who have been registered with taxpayer identification numbers for at least eight years.	

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[67] The facilitator would also be beneficial to establish the connection between the researcher and the respondents. In this sense, the researcher's position was that of an outsider to the study (Griffith, 1998; Labaree, 2002).

Sampling frame	Name list provided by the gatekeepers: the Indonesian tax consultant association and tax offices.
Sampling technique	Purposive sampling by experience and expertise.
Sample size	Six to ten respondents for each group.
Implementation	Allocate sample by purpose, apply telephone communication invitation.

Source: adapted from "The impact of perceptions of corruption upon intentional non-compliance behaviour of personal income taxpayers: an Indonesian perspective," (Rosid, 2017, pp. 132-133) and "Marketing research: an applied orientation," (Malhotra, 2010, p. 385).

4.5.2. Quantitative Phase

After the qualitative phase, the study proceeds to the quantitative approach which takes the form of a survey. The survey method has the advantage of establishing excellent standardisation, straightforward administration, deeper analyses, and contrasting differences (Burns et al., 2017, p. 172). Considering sensible reasons such as costs and resources, the study chooses a sample rather than a census survey. Despite being considered more feasible, sample surveys also pose some risks, including problems with sampling; coverage; non-response; and measurement errors (Groves, 1989). Each of these risks, together with measures designed to alleviate these risks, is now considered in more detail.

Strategies for Sampling Errors

Sampling errors can occur when the chosen sample does not represent the entire population (Dillman & Bowker, 2001, p. 54). It is more problematic when a survey applies non-probability sampling (Bryman, 2016, p. 174; Wald, Gray, & Eatough, 2018,

p. 127).[68] To mitigate the issue, this study utilised probability sampling in selecting the respondents. Specifically, the study adopted stratified sampling to generate a more representative sample for the population of individual SMEs in Indonesia, utilising a database source of individual SMEs from the DGT. Based on certain criteria (tax regime, business sector, and location), the researcher sought sample data of individual SMEs. The information sought was limited to email addresses only which were exclusively utilised to deliver the survey. This approach was also deemed useful to mitigate the risk of self-selection bias (Couper, Traugott, & Lamias, 2001), which may occur when unexpected respondents nominate themselves for a survey without the researcher being able to apply the selection criteria.

Another issue which can be a source of sampling errors is the sample size. Bryman has argued that this risk can be reduced by enlarging the random sample size (Bryman, 2016, p. 83). One statistical way to determine sample size is by establishing the confidence level used previously or widely known as the traditional statistical inference (Malhotra, 2010, p. 375).[69] Following the approach, this study selected the adequate response rates at 10 per cent, mirroring similar research (Lignier et al., 2014). Moreover, based upon a 95 per cent confidence level, a significance level (denoted as α) of five, and an estimated population of 2 million taxpayers (the population will be elaborated later in Chapter 6), it concluded that the sample size needed would be 385 (Collins, Onwuegbuzie, & Jiao, 2007; Qualtrics, 2020).

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[68] Non-probability sampling depends on criteria established by the researcher rather than probability to select sample components. Methods include convenience, purposive, quota, and snowball sampling. In contrast, probability sampling selects the sample units by a known chance. It includes simple random, systematic, cluster, and stratified sampling (Burns et al., 2017, pp. 241-256; Malhotra, 2010, pp. 376-381; Sekaran & Bougie, 2010, pp. 242-259).

[69] Sampath (Sampath, 2005) has provided guidance as to further approaches to estimating the sample size.

Another viable approach in sample size planning is based on power analysis (S. F. Anderson, Kelley, & Maxwell, 2017; J. Cohen & Cohen, 2014; J. Cohen, Cohen, West, & Aiken, 2013). The analysis has been considered useful not only to secure statistically significant results[70] but also to achieve precise parameter estimations (Kelley & Maxwell, 2003, p. 305; 2008, p. 171; Kelley, Maxwell, & Rausch, 2003, p. 260; Kelley & Rausch, 2006, p. 364). To run the analysis, this study selected an Effect Size (ES) of 0.5 (J. Cohen, 2013) and an α of five. It then concluded that 210 respondents would be necessary to obtain an estimated power of 95 per cent.

Figure 4-4 displays the estimation of the sample size planning.[71]

Figure 4-4: Power Analysis for Sample Size Planning
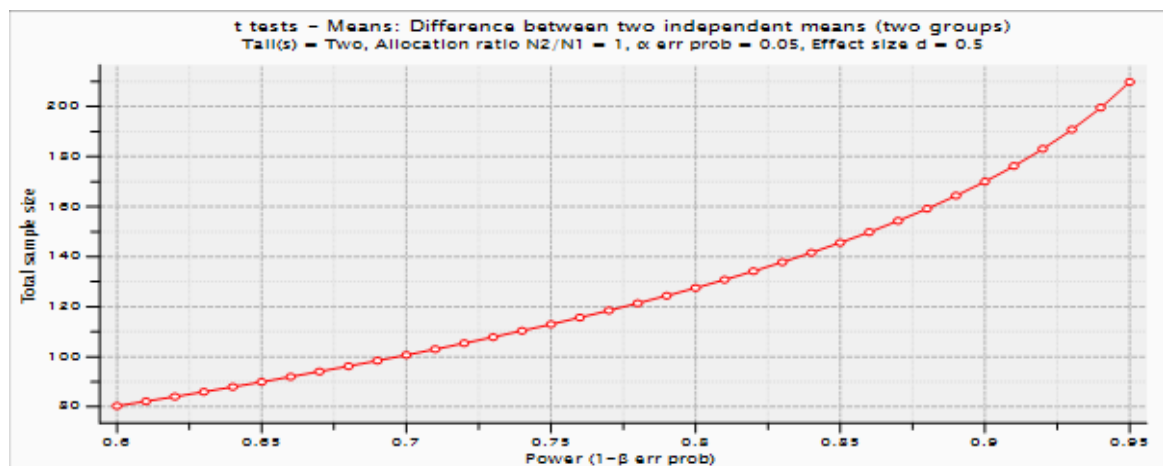
Source: adapted from "G*Power 3.1 manual" (HHU-Düsseldorf, 2017).

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[70] Power analysis has been argued for as a probability needed to derive a statistically significant result (J. Cohen, 1988, p. 1; MacCallum, Browne, & Sugawara, 1996, p. 144). It depends on four elements: α; ES; power; and sample size (Kabacoff, 2015, p. 248).
[71] The study uses G*Power, a versatile analysis program for various statistical tests (Faul, Erdfelder, Buchner, & Lang, 2009, p. 1149; Faul, Erdfelder, Lang, & Buchner, 2007, p. 175). It is available for free at www.gpower.hhu.de/en.html (Kline, 2016, p. 53).

Considering the difference in these estimated sample sizes (385 and 210) and careful reasoning, the study deemed 385 to be the required sample size. Despite only needing 385 respondents, this study distributed the electronic questionnaire to 10,000 taxpayers. To detail the tax compliance costs and capture the difference between the two alternative tax systems, the study proposed that half of the respondents (5,000) be users of the presumptive tax regime, and the rest (5,000) as taxpayers applying the conventional tax regime. This number was considered sufficient to ensure the validity of the response and satisfy the aims of the study.

Strategies for Coverage Errors

Similar to sampling errors, coverage errors may happen when the selected sample does not represent the frame population (Couper et al., 2001). To cover the culturally diverse population and vast geographical area of Indonesia, the study applied an electronic mail-based survey (email survey).[72] An email survey was preferred for practical reasons (Griffis, Goldsby, & Cooper, 2003; Ilieva, Baron, & Healey, 2002; Rea & Parker, 2014), particularly related to the speed of obtaining responses in an economical fashion. It also enables more advanced controls to prevent respondents being able to submit multiple responses (Wald et al., 2018, pp. 127-128). Nevertheless, adopting the email survey is not risk free. The method delivers lower response rates compared with the postal mail survey (Kaplowitz, Hadlock, & Levine, 2004). Moreover, it is biased towards respondents with better access to the internet and more computer

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[72] In general, data collection methods in surveys can be classified into three types: self-administered questionnaires or postal mail surveys; online social surveys, which include email and web surveys; and mixed-mode surveys (Bryman, 2016, pp. 220-233).

experience (Dillman & Bowker, 2001, p. 59). Consequently, those who have less access to internet such as people who are older and from lower SES backgrounds are prone to be excluded from a study in this form (Couper, 2000, 2008).

Strategies for Non-response Errors

Non-response errors refer to the possibility that the selected respondents may choose not to complete the survey (Groves, 2006; Groves & Peytcheva, 2008; Kreuter, 2013). This form of error may take a variety of different forms, including respondents refusing to participate completely, terminating the questionnaire session early, or providing incomplete responses (Couper et al., 2001).

To mitigate these issues, it is crucial to adopt and apply a meticulous questionnaire design (Dillman, 2007; Porter, 2004). This involves selecting a suitable population so that the targeted sample respondents have the capabilities necessary to respond effectively (e.g. basic computer knowledge). Moreover, format, content, and wording are crucial (Dillman, Smyth, & Christian, 2014). Regarding these aspects, designing an uncomplicated survey platform, managing survey length, acknowledging the importance of participants' responses, providing clear directions, and using brief, simple language are all helpful for respondents in their attempts to complete the survey (Burns et al., 2017, pp. 217-222; de Vaus, 2002, p. 97; Wald et al., 2018, pp. 129-131). In addition, maintaining well-administered survey processing is beneficial (Gehlbach & Brinkworth, 2011, p. 385), ensuring that care is taken not only prior to the survey distribution (in conducting the pilot survey, pre-notifying respondents, and

distributing the survey), but also after the distribution (such as providing enough time for respondents, monitoring survey responses, sending the reminder note, and providing survey feedback) (Rogelberg & Stanton, 2007, p. 197).

Another measure that is recommended by many researchers is the offering of material incentives,[73] which seems to have been found helpful in increasing the participation rate, especially for a lengthy questionnaire (Deutskens, De Ruyter, Wetzels, & Oosterveld, 2004, p. 32; P. Edwards et al., 2002, p. 4). Observing this advice, this study prepared 500 e-voucher gifts each valued at IDR 20,000 (AUD 2.08) for the respondents.

Strategies for Measurement Errors

Finally, measurement errors may arise as a result of aspects of the respondents' attitude, such as social desirability and cognitive processes (Bound, Brown, & Mathiowetz, 2001, pp. 3743-3748; Dillman & Bowker, 2001, p. 54). Social desirability may relate to the sensitive nature of the topics of the questions (Tourangeau, Groves, & Redline, 2010; Tourangeau & Yan, 2007) whereas cognitive processes relate to the difficulty recalling detailed information from long-term memory (Tourangeau, 2003; Tourangeau, Rips, & Rasinski, 2000).

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[73] Research has indicated that there are four possible reasons people will participate in a survey: curiosity (survey related reasons); self-knowledge (personal reasons); contribution to research (altruistic reasons); and material incentives (Porst & von Briel, 1995). Interestingly, a study in Germany found that material incentives were the lowest ranked reason while curiosity and contribution to research were the two most powerful motives (Bosnjak & Batinic, 2001, p. 108).

Because both issues relate to psychological characteristics of respondents (Krumpal, 2013), it is pertinent to analyse the process that occurs when a respondent attempts to complete a survey. Typically, it comprises four steps: interpreting questions; retrieving relevant information; applying the information to make judgments; and submitting responses (Tourangeau, 1984; Tourangeau & Rasinski, 1988). Consequently, when respondents consider the questions to be sensitive, they may exhibit a self-protective response by selecting socially desirable options or withholding true answers (Krumpal, Jann, Korndörfer, & Schmukle, 2018, p. 91). Similarly, when respondents find that questions need significant cognitive efforts without commensurate rewards, they may become frustrated and select responses without processing the questions (referred to as satisficing) (Krosnick, 1991). To make the situation worse, satisficing may take the form of various response styles.[74] While at least seven response styles have been identified (Baumgartner & Steenkamp, 2001, pp. 144-145),[75] the two most common are Acquiescence Response Style (ARS) and Extreme Response Style (ERS) – the tendency to agree with statements and the tendency to select the most extreme responses regardless of the contents (Kieruj & Moors, 2013; M. Liu, Conrad, & Lee, 2017; Wetzel, Lüdtke, Zettler, & Böhnke, 2016).

With regard to social desirability bias, it is important to ensure respondents' confidentiality and anonymity (Burns et al., 2017, p. 297). Some other measures that

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[74] Response styles or response biases have been defined as the respondents' tendencies to respond systematically on different bases than the intended measurement designs (Paulhus, 1991, p. 17).

[75] In addition to ARS and ERS, five other important response styles are Disacquiescence Response Style (DARS – the tendency to disagree), Net Acquiescence Response Style (NARS – the tendency to exhibit stronger acquiescence than disacquiescence), Non-Contingent Response Style (NCRS – the tendency to select the responses randomly), Mid-Point Response Style (MPRS – the tendency to select the middle response), and Response Range (RR – the tendency to select either a wide or narrow items around the mean response) (Van Vaerenbergh & Thomas, 2012).

may help to mitigate the effect are easing the impact of sensitive questions by emphasising that "most people do it" or "most people experience the same thing" (Raghubir & Menon, 1996; Sudman & Bradburn, 1982, p. 75; Tourangeau & Smith, 1996) and placing the more sensitive questions at or near the end of the surveys (Malhotra, 2010, p. 342). Moreover, some studies have applied unconventional techniques such as the Randomised Response Technique (RRT) and the Crosswise Model (CM).[76] The RRT enables respondents to select randomised questions by using a randomising device (Warner, 1965), and CM is an enhanced form of RRT including both sensitive and non-sensitive questions and providing respondents with two reply options: "yes" or "no" on both questions; or a contrast answer on both questions (Jann, Jerke, & Krumpal, 2012; Kundt, 2014). These approaches have been considered useful in tax compliance behaviour studies (Houston & Tran, 2001; Korndörfer, Krumpal, & Schmukle, 2014; Kundt, Misch, & Nerré, 2017).

In relation to the cognitive process issue, caution must be applied in designing a questionnaire, especially the construct development. This is crucial because the issue influences how respondents attend to surveys (Schwarz, 1999; Wetzel & Greiff, 2018). The application of construct development then considers some matters such as the selected options (agree-disagree or item-specific), the extent of the neutral response (placebo or plausible), and the number of responses (less or more options). Prior to

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[76] Some other techniques to address social desirability bias are the triangular model, the unmatched count technique, the nominative technique, the item sum technique, the item sum double-list technique (Coutts & Jann, 2011; Jerke, Johann, Rauhut, & Thomas, 2019; Krumpal, 2013; Krumpal et al., 2018; Trappmann, Krumpal, Kirchner, & Jann, 2013; Tsuchiya, Hirai, & Ono, 2007; Yu, Tian, & Tang, 2008).

considering these matters, it is necessary to examine the process of construct development in more detail.

Generally, construct development entails four steps: defining concepts from the theoretical framework; describing dimensions including developing scale purpose and length; establishing indicators by composing clear items; and measuring variables (de Vaus, 2014; DeVellis, 2016; Sarantakos, 2013). In the case of this thesis, the study needs to establish the concepts, dimensions, indicators, and measurements in analysing tax compliance costs systematically.

Concepts comprise the establishment of theory as well as the ideas around the conduct of research (Bryman, 2016, p. 151). While concepts may specify a rationale of certain aspects of the research, some concepts are not straightforwardly observable (e.g. in this case, psychological costs). Thus, to elaborate a measure of concepts, the distinct components of the concepts (or the dimensions) should be considered. After analysing the dimensions, indicators are developed and utilised to measure the concepts. Put it simply, indicators are beneficial to utilise in the case of concepts that are less directly measurable (Bryman, 2016, p. 152).

Indicators then can be categorised as either reflective (effect indicator) or formative (cause indicator) (Blalock, 1964, pp. 162-169). The former signifies a single dimension, identifies a concept (ξ) as a basis of measures ($\chi 1$-$\chi 3$), and is predicted to exhibit high correlation among the measures whereas the latter defines different dimensions of a concept (μ), considers measures ($\chi 1$-$\chi 3$) as causes of the concept,

and is not expected to display internal consistency (Bollen, 1984; Bollen & Lennox, 1991; Diamantopoulos & Siguaw, 2006; MacKenzie, Podsakoff, & Jarvis, 2005; Podsakoff, Shen, & Podsakoff, 2006). Figure 4-5 illustrates the contrast between the reflective indicator and the formative indicator.

Figure 4-5: Reflective and Formative Measurement Models
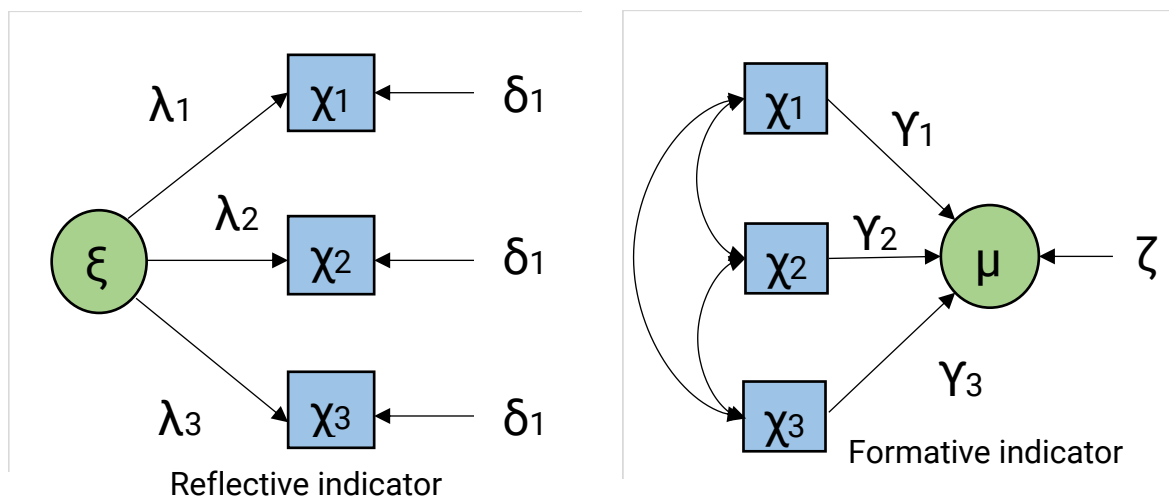
Source: adapted from "The fallacy of formative measurement" (J. R. Edwards, 2011, p. 372).

In the above context, this study applies reflective indicators due to the relevance of their features for the concepts involved. First, the measures are theoretically similar, and deleting any one of the items would not change the interpretation of the concept (Franke & Rigdon, 2008, p. 1229; Jarvis, MacKenzie, & Podsakoff, 2003, p. 201).[77] Secondly, high internal consistency is envisaged given that reflective measures are intended as substitute indicators of the same underlying concept (J. R. Edwards, 2003, 2011). Finally, reflective indicators incorporate measurement error given the potential

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[77] Reflective measures may demonstrate useful redundancy because the measures have similar meaning without depending on the same expressions (DeVellis, 2016).

to correct associations among latent variables (P. Cohen, Cohen, Teresi, Marchi, & Velez, 1990; DeShon, 1998; Diamantopoulos, 2006; Iacobucci, 2010).[78]

After establishing the indicators applied, the study moves on to the measurement practice. The analysis measurement utilises all three behavioural criteria: magnitude, frequency, and dichotomous (Fishbein & Ajzen, 2011, p. 34). Table 4-5 exhibits the measurement strategies adopted in this study.

Table 4-5: Measurement of the Tax Compliance Costs Strategies

Concept (Literature)	Dimension − Indicator	Measurement
Opportunity costs (Evans et al, 1996; Lignier et al, 2014; Sandford et al, 1989)	The sum of explicit, implicit resources spent on, perceived stress burdens, and managerial benefits in complying with the tax law: o explicit costs; o implicit costs; o perceived stress burdens; o perceived managerial benefits.	Magnitude Unipolar five-point scale
Tax stressors (Alexander et al, 2005; Lopes & Martins, 2013; Yong, 2011)	Perceived difficulty level of task demands by the tax law which may cause stress for taxpayers: o undertaking administration obligations related to tax compliance; o maintaining record-keeping for tax purpose; o determining taxable incomes, paying taxes; o preparing, lodging tax returns.	Magnitude Unipolar five-point scale

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[78] Due to some issues associated with using formative indicators, Kline has argued that reflective indicators are more appropriate in traditional SEM analysis (Kline, 2006). For more appropriate use of formative indicators, some scholars (Chin, 1998; Chin & Newsted, 1999; Hair, Ringle, & Sarstedt, 2011, 2012, 2013; Henseler & Chin, 2010; Kock, 2015, 2017; Nitzl, 2016) have suggested using Partial Least Squares (PLS).

Tax regimes	System of tax rates, rules, and scopes for certain taxpayers who qualify the criteria: ○ presumptive tax regime; ○ conventional tax regime.	Dichotomous
Tax disputes (Eichfelder & Kegels, 2014; Gangl et al, 2015; Tran-Nam & Walpole, 2016)	Perceived of interaction level between taxpayers and the tax revenue administration: ○ the general interaction; ○ prevalence of inquiries; ○ being audited or lodging an objection or appeal.	Mixed Unipolar five-point scale
Psychological costs (Cohen et al, 1983)	The prevalence of perceived stress when complying with the tax law: ○ were unable to control the tax matters; ○ confident about the ability to handle tax matters; ○ considered that tax matters were going under control; ○ overwhelmed by the level of difficulty in complying with the tax obligations.	Frequency Unipolar five-point scale

While the study applies all scale measurements,[79] interval scales are the critical instruments. For that reason, the study utilises unipolar five-point Likert-type scales (Likert, 1932; Likert, Roslow, & Murphy, 1934) with item-specific questions.[80] Compared with agree-disagree questions, item-specific questions are more straightforward and easier to understand mentally (Schwarz, 1999). The questions also emphasise the construct of interest and maintain the respondents' focus

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[79] Most measurements can be classified into four types: nominal, ordinal, interval, and ratio (Stevens, 1946, p. 678).

[80] While some authors (Allen & Seaman, 2007; Blaikie, 2003; Boone & Boone, 2012; Jamieson, 2004) have argued that Likert-type scales fundamentally measure ordinal data due to the fact that the distance between options is unknown, the study adopts the convention that the distance between options is equal and thus falls within the interval level of measurement (see the discussion in (Bryman & Cramer, 2011; Carifio & Perla, 2007; Harpe, 2015; Norman, 2010).

(Gehlbach, 2015, p. 893; Saris, Revilla, Krosnick, & Shaeffer, 2010, p. 74). Consequently, item-specific questions minimise cognitive efforts, mitigate the risk of ARS, and thus enhance data quality (Dillman et al., 2014; Krosnick, 1999; Tourangeau et al., 2000).

Another consideration in relation to the measurement scale is the existence of the neutral or undecided option (Chyung, Roberts, Swanson, & Hankinson, 2017; M. L. Edwards & Smith, 2014). Initially intended to circumvent false responses and minimise social desirability bias (R. L. Armstrong, 1987; Bishop, 1987; Garland, 1991; Kalton, Roberts, & Holt, 1980), the option tends to be misused as a "dumping ground" (Kulas & Stachowski, 2009, 2013; Kulas, Stachowski, & Haynes, 2008; Nadler, Weston, & Voyles, 2015). Some studies (Johns, 2005; Kieruj & Moors, 2010; Nowlis, Kahn, & Dhar, 2002) also have reported a high number of respondents who select the option despite it not being the actual response. Its inclusion has been considered to distort meaningful opinions (Krosnick et al., 2002), and as a result this study has chosen not to include the neutral or undecided option.

Regarding the optimal number of options (Cox, 1980), it has been argued that reliability and validity improve with more options (Lozano, Garcia-Cueto, & Muniz, 2008; Preston & Colman, 2000; Weijters, Cabooter, & Schillewaert, 2010; Weng, 2004). However, too many options (e.g. more than nine) tends to exacerbate cognitive burdens for respondents and thus would not enhance reliability (Artino, La Rochelle, Dezee, & Gehlbach, 2014, p. 468). Most studies suggest a range of between four and seven options (Eutsler & Lang, 2015; Lozano et al., 2008; Revilla, Saris, & Krosnick, 2014), and

this study applies a five-point scale due to the simplicity and sensitivity of the questions (Wakita, Ueshima, & Noguchi, 2012, p. 544).

Finally, the study adopts fully labelled options which are useful to enhance the interpretation meanings and mitigate the risk of ERS (Alwin & Krosnick, 1991, p. 139; Krosnick, 1999, p. 544; Weijters et al., 2010, p. 244; Weng, 2004, p. 970).

Summing up, Figure 4-6 illustrates the response options to questions related to psychological costs adopted in the study.

Figure 4-6: Response Options
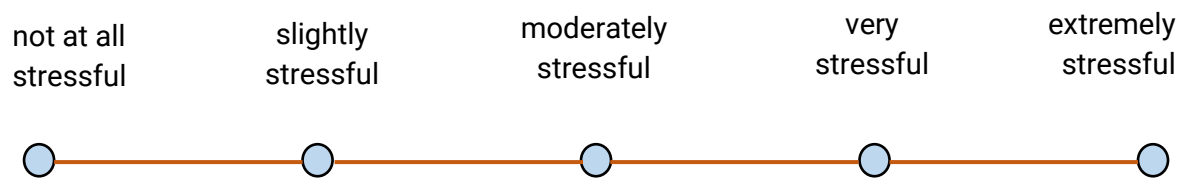
Source: adapted from "AM last page: avoiding four visual-design pitfalls in survey development" (Artino & Gehlbach, 2012, p. 1452).

To conclude, the data collection strategies adopted in the quantitative phase and the selection sampling are illustrated in Table 4-6. As the primary method, the quantitative approach has been designed to mitigate the known risks of sampling, coverage, non-response, and measurement errors. The first two errors relate to the representativeness of the sample whereas the other two emphasise the importance of questionnaire designs.

Table 4-6: Data Collection Strategies in the Quantitative Phase

Approach – method	Respondents	Selection/ sampling
Quantitative – email survey	• Taxpayers with presumptive tax; • Taxpayers with conventional tax.	Probability sampling – stratified sampling.
Sampling design (quantitative)		
Target population	Individual SMEs satisfying the criteria: above 18 years; generate income mainly from self-employment; and incurred costs to comply with the tax law during the period January – December 2019.	
Sampling frame	Email list provided by the DGT.	
Sampling technique	Stratified sampling by tax regime, business sector, and location.	
Sample size	10,000 individual SMEs.	
Implementation	Allocate the sample by strata, apply computerised email sending.	

Source: adapted from "The impact of perceptions of corruption upon intentional non-compliance behaviour of personal income taxpayers: an Indonesian perspective," (Rosid, 2017, pp. 132-133) and "Marketing research: an applied orientation," (Malhotra, 2010, p. 385).

4.6. Data Analysis Approaches

The previous section has detailed strategies to collect the data. This section moves on to the next strategy: the data analysis approaches. The approaches describe the procedures needed after data collection (Sarantakos, 2013) and are discussed briefly to outline the general organisation for the conduct of the research in the next chapter.

In the qualitative phase, the study applies thematic analysis to scrutinise the data from group discussions. Thematic analysis is a qualitative analytic tool to identify, analyse,

and report patterns and themes emerging from data in a highly detailed and systematic way (Braun & Clarke, 2006, p. 79). While reliability may be the concern of using the tool (Nowell, Norris, White, & Moules, 2017, p. 2), thematic analysis has been argued as a versatile method in summarising the complexities of ideas within the data (Braun & Clarke, 2012, p. 58; Guest, MacQueen, & Namey, 2012, p. 13).

Thematic analysis comprises six collective steps: familiarisation with the data; initiating preliminary codes; exploring for themes; scrutinising the themes; establishing the themes; and generating a report (Clarke & Braun, 2013). The descriptions of each step are illustrated in Table 4-7.

Table 4-7: Data Analysis Steps in the Qualitative Phase

Approach	Description
Familiarising with data	Transcribing, reading, and studying the data then constructing initial ideas.
Initiating preliminary code	Arranging interesting attributes of the data systematically and organising data to each code appropriately.
Exploring for themes	Classifying codes into potential themes, arranging all data pertinent to each potential theme.
Scrutinising the themes	Ensuring the themes fit to the coded quotations (step 1) and the complete data set (step 2), producing a thematic analysis chart.
Establishing the themes	Refining the features of each theme, and the complete analysis data, producing well-defined names for each theme.
Generating a report	Selecting clear, convincing quotation examples needed for satisfying the research question, generating an analysis report

Source: adapted from "Using thematic analysis in psychology" (Braun & Clarke, 2006, p. 87).

In the second phase, data collected from the survey will be analysed by using Jeffreys's Amazing Statistics Program (JASP) version 0.14 (Love et al., 2019). The evaluation also includes a structural equation analysis using Lavaan (Rosseel, 2021, 2022). SEM is a compilation of statistical techniques that enable examinations of various associations between predictors and outcomes (Ullman & Bentler, 2013, p. 661). It is widely used because of various advantages: it is robust for inferential objectives so as to be appropriate for hypothesis testing; it is powerful for assessing or correcting measurement error; it is capable of evaluating both observed and latent variables; and it is a feasible method for analysing correlations among an array of variables (B. M. Byrne, 2013, pp. 3-4). For those reasons, JASP and Lavaan are considered practical and effective to illustrate and analyse the conceptual models (Devlieger, Mayer, & Rosseel, 2016; Devlieger & Rosseel, 2017; Goss-Sampson, 2020; Navarro, Foxcroft, & Faulkenberry, 2019; Rosseel, 2012, 2014).

Generally, SEM analysis entails the following steps: data preparation; model specification; model identification; model estimation; model evaluation, model modification; and multiple group analysis (Schumacker & Lomax, 2012a; Ullman & Bentler, 2013). Besides the model specification which has been discussed in Section 4.4 and illustrated in Figures 4.2 and 4.3, each of these steps is elaborated briefly below.

Data preparation is important to ensure the data under analysis are free from various problems such as missing observations, early-late response bias, non-normality, and multicollinearity (Field, 2009; Hair, Black, Babin, & Anderson, 2014; Kline, 2011;

Schumacker & Lomax, 2016). It incorporates various measures to ensure the data analyses generate useful and meaningful results (Hair, Black, et al., 2014, p. 7). It commences with descriptive statistics, inferential statistics, and then the report and justifications of the matrix selected as appropriate[81] (Boomsma, 2000, p. 470; Schumacker & Lomax, 2012b, p. 210).

Model identification entails procedures to generate a unique result for every estimated parameter from the observed data (O'Brien, 1994, p. 137; Rigdon, 1995, p. 359). It is beneficial for gauging the psychometric measurement and confirming the model specification fits (Bollen & Long, 1993). Two minimum requirements are crucial prior to the identification: at least zero for the degrees of freedom and a (metric) scale assignment for every latent variable (Kline, 2011, p. 124).[82] Comparing the number of data[83] to the estimated parameter, three types of model identification can be distinguished: under-identified, just identified, and over-identified (B. M. Byrne, 2013; Hair, Gabriel, & Patel, 2014). Those models respectively occur when the data are less than, equal to, and more than the estimated parameter. For further SEM analysis, an over-identified model is compulsory (Blunch, 2013).

Model estimation refers to the application of a fitting function process to generate the theoretical covariance matrix and minimise the discrepancy between the estimated theoretical covariance matrix and the observed covariance matrix (Everitt & Hothorn,

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[81] Among various types of moment matrices, the two most widely used are the correlation matrix R and covariance matrix S (Bollen, 1989; Jöreskog & Sörbom, 2001).

[82] For more detailed identification requirements, Kenny et al have argued that five conditions must be sustained (Kenny, Kashy, & Bolger, 1998, pp. 253-254).

[83] Data refer to the variances and covariances in the sample covariance matrix (Suhr, 2006; Ullman & Bentler, 2013, p. 665).

2011, p. 202). Maximum Likelihood (ML) and Generalised Least Squares (GLS) are the two most common functions (Crockett, 2012, p. 34) used in the process.[84]

Following the model estimation, the study needs to ensure validity and reliability of the model (J. C. Anderson & Gerbing, 1991; Gerbing & Anderson, 1988). Validity is assessed through various measurements such as factor loadings, Average Variance Extracted (AVE), and the constructs' correlations whereas reliability is evaluated through various values such as Cronbach's Alpha, Construct Reliability (CR), and Variance Extracted (VE) values (J. C. Anderson & Gerbing, 1988; Bagozzi & Yi, 1988; Bandalos, 2019).

Model evaluation comprises various analyses to establish the general fit of the model and the substance of specific parameters of the model. It also involves evaluating how well the theoretical covariance matrix matches the covariance matrix of the observed variables (Everitt & Hothorn, 2011, p. 204). Consequently, the study applies multiple indices of fit such as absolute fit, comparative fit, and parsimonious fit (Blunch, 2013; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999; Iacobucci, 2010; Tabachnick & Fidell, 2013). Each of these indices is discussed briefly in turn.

The indices of absolute fit assess the structural model's ability to replicate the observed covariance matrix. Some of the indices used for the objective are the chi-

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[84] ML and GLS work best under multivariate normality. When the multivariate normality is not satisfied, some scholars have suggested alternative estimations, such as an Asymptotically Distribution-Free (ADF) estimator (Browne, 1984; Raykov & Widaman, 1995), the Yuan-Bentler test statistic (Yuan & Bentler, 1999), and the Satorra-Bentler test statistic (Satorra & Bentler, 2001).

square (χ^2), Goodness-of-Fit Index (GFI), Root-Mean-Square Error of Approximation (RMSEA), and Standardised Root Means Square Residual (SRMR) (Jöreskog & Sörbom, 1981, 2001; Steiger, 1990; Steiger & Lind, 1980). The indices of comparative fit then compare the proposed model fits to the other baseline models. Generally applied comparative fit indices include Comparative Fit Index (CFI), Normed Fit Index (NFI), and Relative Fit Index (RFI) (Bentler, 1990; Bentler & Bonett, 1980). Finally, the indices of parsimonious fit determine the effect of inserting additional parameters to the model. Parsimonious Goodness-of-Fit Index (PGFI), and Parsimonious Normed Fit Index (PNFI) are commonly used for this purpose (Marsh & Balla, 1994; Marsh, Balla, & McDonald, 1988; Marsh, Hau, Balla, & Grayson, 1998).

The model evaluation sometimes does not produce satisfactory results immediately, or it is found that more plausible models could be generated from the specific dataset (McDonald & Ho, 2002, p. 77). For that reason, model modification is required to improve the indices fit and to test the theoretical work (Ullman & Bentler, 2013, p. 674). Three principal methods are commonly used in model modification: the chi-square difference, Lagrange Multiplier (LM), and Wald test (Ullman, 2019; Yuan & Bentler, 2004). The chi-square difference compares not only the chi-square but also the degree of freedom between two nested models. The LM test evaluates whether adding parameters will improve a model whereas the Wald test assesses whether deleting parameters will enhance a model. For a better analysis process, MacCallum suggested combining the relevant parameters prior to removing unnecessary parameters, i.e. applying the LM test first then the Wald test (MacCallum, 1986, p.

114). After establishing a better model, it is necessary to validate it with a different sample (Crockett, 2012, p. 34).

The final step, multiple group analysis, evaluates and compares models among two or more groups (Jöreskog, 1971; Sörbom, 1974). Specifically, the study in this case analyses the hypothesis testing between two groups: the respondents who apply the presumptive tax and those who use the conventional tax. It also combines mediation and moderation in a single SEM approach (Sardeshmukh & Vandenberg, 2017).

To understand the analysis approach, it is beneficial to review mediation, moderation, and the combination process (Aguinis, Edwards, & Bradley, 2017; J. F. Dawson, 2014). Mediation occurs when the effect of a predictor on an outcome is transferred through a mediator variable whereas moderation occurs when the effect of a predictor on an outcome fluctuates along with the level of a moderator variable (R. M. Baron & Kenny, 1986; L. R. James & Brett, 1984).[85] More often, scholars combine mediation and moderation to provide for a more complex research design and more comprehensive data analysis (Hayes, 2015; Hayes & Rockwood, 2020).[86]

Among various methods to conduct moderated mediation analysis (MacKinnon, 2008; MacKinnon, Fritz, Williams, & Lockwood, 2007; MacKinnon, Lockwood, Hoffman, West,

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[85] Refer to n 60.

[86] Various scholars have suggested different terms to describe research combining moderation and mediation. Some of the terms used are mediated moderation (Morgan-Lopez & MacKinnon, 2006), moderated mediation (D. Muller, Judd, & Yzerbyt, 2005), conditional indirect effect (Preacher, Rucker, & Hayes, 2007), and conditional process analysis (Hayes & Preacher, 2013), and models integrating moderation and mediation (Holland, Shore, & Cortina, 2017). For simplicity, the study uses the term moderated mediation.

& Sheets, 2002), the study applies simultaneous mediation and moderation analyses in a single step (J. R. Edwards & Lambert, 2007; Preacher et al., 2007) due to enabling intercepts and standard errors computation and providing more robust standard error compared with other methods (Arunachalam, Ramaswami, Herrmann, & Walker, 2018, p. 752; Sardeshmukh & Vandenberg, 2017, p. 722).

For an illustration, Figure 4-7 demonstrates respectively: (i) a direct effect; (ii) a mediation; (iii) a moderation; and (iv) a moderated mediation.[87]

Figure 4-7: Graphic Illustration of Mediation and Moderation Models
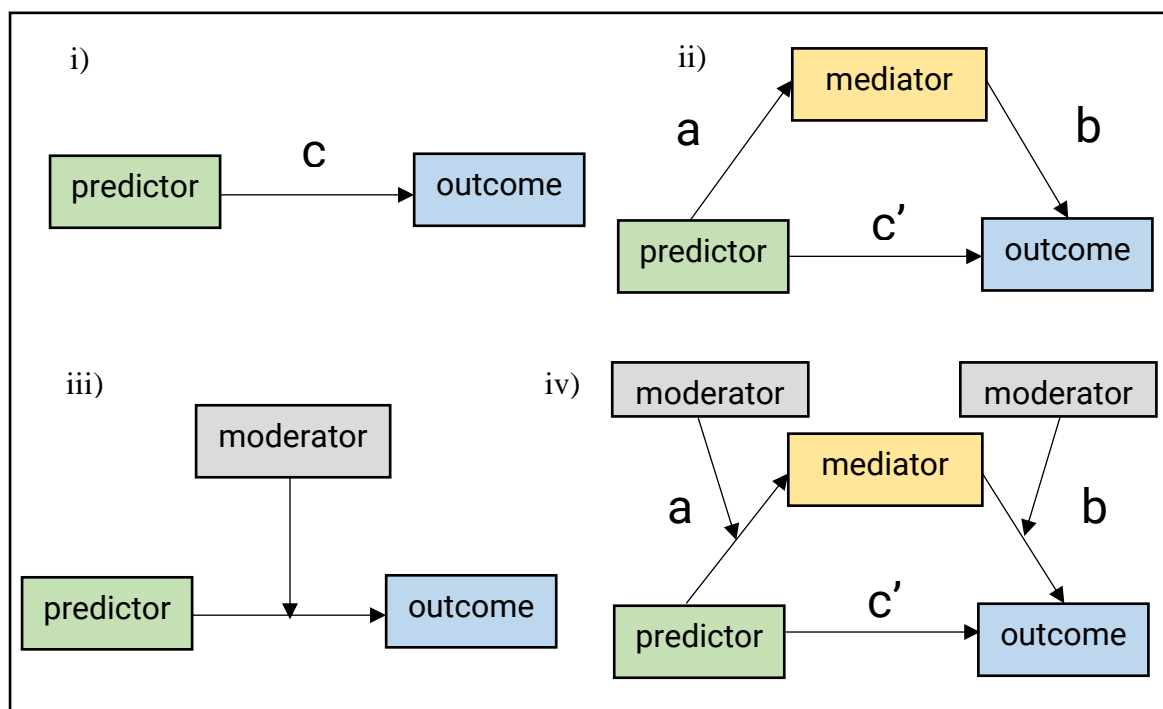
Source: adapted from "Improving our understanding of moderation and mediation in strategic management research" (Aguinis et al., 2017, p. 667).

To conclude, Table 4-8 summarises the analysis steps in the quantitative phase.

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[87] Moderated mediation may involve more than one mediator and/or moderator. When a mediator is moderated, the moderation may take place on the path a, b, c', and various combinations among them (Hayes, 2013, 2018). In the example, the moderation occurs on two paths: a and b.

Table 4-8: Data Analysis Approaches in the Quantitative Phase

Approach	Description
Data preparation	Ensuring the data are free from some issues such as: missing data, response bias, non-normality, and multicollinearity.
Model specification	Specifying a measurement and structural model, designing a path diagram to visually represent the hypothesised associations.
Model identification	Establishing the specified model is identified and able to produce a unique result and parameter estimations
Model estimation	Applying a fitting function procedure to generate the theoretical covariance matrix.
Model evaluation	Analysing multiple indices of fit (e.g. absolute, comparative, and parsimonious) to determine the theoretical model fits the sample data.
Model modification	Utilising model trimming or adding new parameters to improve the theoretical model's fit to the data.
Multiple group analysis	Developing good-fitting models in separate analyses for each group.

Source: adapted from "Reporting SEM research: guidelines and recommendations" (Schumacker & Lomax, 2012b, pp. 214-219).

After establishing data analysis approaches, the following section of this thesis moves on to consider the ethical considerations.

4.7. Ethical Considerations

Given the involvement of human participation in the study, appropriate ethics approval was required prior to its commencement.[88] Basically the ethics approval requires

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[88] Ethics approval is essential in the case of every research project: not only those involving human participation, but also those involving animals where their welfare must be considered (Goodwin, 2010, p.

adherence to eight principles of responsible conduct of research which comprise: honesty; rigour; transparency; fairness; respect; recognition; accountability; and promotion[89] (UNSW, 2019, pp. 2-3). To consider any possible ethical risks to the potential respondents,[90] the researcher applied to the UNSW Human Ethics committee for appropriate approval, which was granted on 2 September 2019 and valid for up to five years (see Appendix A: ETHICS APPROVAL DOCUMENTS).

One important aspect of ethics consideration is "voluntary informed consent" (Sieber, 2009, p. 111), which requires the provision to participants of all relevant information related to the study and the procedure of collecting the data. Such consent also involves protecting some people (including vulnerable groups) who may be unable to understand what the study entails (Brule & Eckstein, 2017). While the definition of vulnerability may be broad (Bracken-Roche, Bell, Macdonald, & Racine, 2017; Iltis, Wall, Lesandrini, Rangel, & Chibnall, 2009; Kipnis, 2001, 2004; Schroeder & Gefenas, 2009), some who may be considered vulnerable are people under 18 years old. Consequently, they are excluded from the study.

Finally, ethics approval also requires the maintenance of privacy, confidentiality, and anonymity of the respondents.[91] Therefore, data collected in the study are treated carefully. The data are stored in a secured place, applying protected data storage for

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40).

[89] Promotion refers to the responsibility to encourage a nurturing research culture and supportive environment (UNSW, 2019).

[90] Four possible ethical risks have been identified: mental harm; physical harm; stigmatisation and social impairment. Financial burdens due to costs associated with the participation must also be considered (Weisser-Lohmann, 2012, p. 160).

[91] Privacy considers the people involved, confidentiality relates to the data, and anonymity emphasises no identifiers (Sieber, 2009, p. 117).

both hardcopies and softcopies. While the FGDs and the survey are undertaken on a voluntary basis, the participants to both data collection approaches must sign a consent letter stating their voluntary willingness to participate in the study. Numeric codes (instead of full names) are applied to identify group discussion transcripts and survey analyses.

4.8. Conclusion

This chapter has explained the conceptual framework selected for the conduct of the research. In summary, it embraces positivism by applying a sequential exploratory mixed-methods (qual → QUANT) approach, as explained in Sections 4.2 and 4.3.

Section 4.4 set out the three primary research questions, seven hypotheses, four broad secondary research questions, and 16 descriptive questions developed for the study. A discussion of the various aspects of sample selection for both the FGDs and the survey method was provided in Section 4.5, identifying that two FGDs and an electronic survey of 10,000 participants (in order to elicit a minimum of 385 responses) were considered appropriate for the study.

Section 4.6 then outlined the approaches considered necessary to analyse the data collected in both the qualitative and quantitative phases. It described six steps in analysing the qualitative data and seven phases in scrutinising the quantitative data by using thematic analysis and SEM approach consecutively.

Finally, a description of the ethical considerations related to the study was elaborated in Section 4.7. This section discussed the principles relating to responsible conduct of research and mitigation of the ethical risks in conducting research. It also emphasised the importance of voluntary informed consent and recognised the need to ensure respondents' privacy, confidentiality, and anonymity.

Based upon this research design, the next chapter will explain how the qualitative component of the research project was operationalised and conducted.

Chapter 5: **FOCUS GROUPS CONDUCT AND ANALYSIS**

5.1. Introduction

The previous chapter detailed the research design developed for the study, establishing the framework, approach, research questions and hypotheses related to the research. It also provided the reasons for undertaking two sequential phases of research, one qualitative and the other quantitative, and explained the data collection strategies, data analysis approaches, and ethical considerations incorporated into the research design. The study now moves to a consideration of the implementation of the qualitative phase of the research, highlighting the conduct of the focus groups, together with an analysis of their outcomes.

This chapter is set out as follows. First, after this introduction, Section 5.2 details the process through which the focus group discussions were organised in the qualitative phase. Three main elements are covered: the background to the focus groups; details of the participants in the discussions; and procedures undertaken during the discussions.

The analysis of the focus group outcomes is next set out in Section 5.3. Five themes emerged from the analysis: the role of tax compliance in considering tax compliance costs; the preference for a specific tax regime in connection to the costs; the magnitude of the costs; the management of the burdens; and factors influencing the costs.

Following the discussion of these five themes, the implications for survey development are considered in Section 5.4 and the chapter concludes in Section 5.5.

5.2. Discussion Groups Organisation

5.2.1. Background

Two focus group discussions were conducted: one involving tax advisers and the other involving small business taxpayers, constituting a total of nine individuals. The discussions were conducted in Surabaya, the researcher's home town. To conduct the focus groups, the researcher sought support and assistance from Petra Christian University, a private university in the suburban of Surabaya. The assistance included providing a supportive environment for the discussions, and furnishing the important role of facilitator (Bhattacharya, 2008; R. A. Krueger, 2002).

The recruitment of potential respondents for the two focus groups required further support. For the first (tax adviser) group, the researcher asked the Indonesian tax consultants association in Surabaya to support the study, through acting effectively as a gatekeeper. A general invitation letter was sent to this gatekeeper, which then invited six to ten tax advisers with a minimum of eight years' tax consulting experience each to participate in the study. While the invitation letter did not include specific gender quotas, the gatekeeper recruited two female participants to join the discussion, together with four male participants.

For the second focus group, the researcher required small business taxpayers with roughly eight years' experience (as a taxpayer) to join the group discussion. Identifying potential recruits proved difficult and various sources were tried. Tax offices were among the first channels approached because of their better data access related to taxpayers. For that reason, the researcher invited potential respondents whose affairs were administered by two tax offices in Sidoarjo and by one tax office in Surabaya. In addition, the researcher utilised four other channels: a business centre management office in Surabaya; the association of micro, small, and medium enterprises in East Java; tax advisers who had attended the first discussion; and a business club meeting in Surabaya. From those channels, five potential small business respondents confirmed they would attend the second focus group (although only three actually attended).

The difficulties in recruiting business taxpayers for the second focus group may have been due to various factors. First, most individual SMEs were busy people and it was a challenging task to match the discussion schedule with their schedules. In addition, most individual SMEs manage their business by themselves so that it is difficult for them to leave their business premises for non-business affairs.[92] Finally, the perceived image of talking about tax in a formal discussion seemed very daunting for them.

5.2.2. Participants

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[92] This was explained by a potential respondent during a telephone invitation.

The first focus group discussion with tax advisers was held in January 2020 and attended by six people. They had all completed an undergraduate degree and had an average of 17 years' experience in tax consultations. The second focus group was organised in the following month and was attended by only three people: one female and two male participants.[93] Despite the limited number, the second discussion was still highly useful because of the quality of the respondents. All three had been running businesses for more than 15 years and were able to express their opinions related to the topic quite well. It has previously been noted that smaller groups may be an advantage as the respondents tend to share and contribute more insightful information on the topic (Morgan, 1998).[94] Moreover, the breakdown of the type of respondent was also satisfactory as one taxpayer applied the conventional and the other two the presumptive tax regime. Table 5-1 summarises the profile of respondents in both sessions.

Table 5-1: Demographic Characteristics of Focus Group Respondents

Group	Participant code	Gender	Working experience (years)
Tax adviser	TA1ZA	Female	20
Tax adviser	TA2AY	Male	17
Tax adviser	TA3WD	Female	27
Tax adviser	TA4TP	Male	15
Tax adviser	TA5LR	Male	16
Tax adviser	TA6FV	Male	11

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[93] There were two no-show respondents; prior research has noted that it is almost impossible to control for the risk of no-show participants (S. Wilkinson, 1998, p. 188). It was later revealed that they had been unable to attend due to their circumstances being unexpectedly hectic.

[94] It is important to note that the theoretical saturation point (the condition when the data collection process cannot produce new insights) (Bowen, 2008; Corbin & Strauss, 2014) was not the main concern due to the objectives of the discussions being to develop and enhance the survey instrument (Nassar-McMillan, Wyer, Oliver-Hoyo, & Ryder-Burge, 2010).

Taxpayer	TP1MS	Female	34
Taxpayer	TP2LB	Male	22
Taxpayer	TP3HK	Male	18

Source: group discussion data set.

5.2.3. Procedures

Prior to the discussions, all participants received the Participant Information Statement and Consent Form (PISCF). This provided comprehensive information (e.g. purpose, procedure, audio recorded session, etc.) related to the research, and also informed participants how to provide their consent and how to withdraw from the study. After the participants had confirmed their willingness to participate and had signed the appropriate consent, the discussions began.

To organise the discussions properly, some protocols were prepared. The protocols entailed four steps: presenting a welcoming remark; highlighting the general topic; informing the basic rules of conduct; and raising the discussion questions (see Appendix B: FOCUS GROUP DISCUSSION PROTOCOLS for full details of the protocols).

First, the researcher expressed appreciation for the respondents' effort to attend the discussion sessions in the welcoming remark. Generous support from Petra Christian University to host the discussions and prepare the personnel was also acknowledged. The facilitator's credentials were also highlighted in this phase.

The researcher then introduced the topic of the discussion and provided general information related to tax compliance costs. Emphasis was placed on the learning process for the study and the significant role of the participants in sharing their rich experience and practical knowledge related to the topic.

Participants were then encouraged to express their opinions regarding, in the first focus group, their experience in providing tax advice or, in the second focus group, in complying with the tax law as individual SMEs. They were also informed that the discussion sessions were being audio recorded to ensure all important data was captured.[95] Despite the recording of sessions, complete confidentiality was also assured in the report of the discussions. After explaining the procedures, the researcher introduced the facilitator to lead the discussion sessions.

In managing the discussions, the facilitator raised five different types of questions: opening; introductory; transition; key; and ending questions.[96] These variations were helpful to focus the discussions from general to specific aspects. The facilitator had a crucial role in motivating all the participants engaged with the discussions. For that reason, two suggestions were considered: applying pauses and asking effective questions. The former was helpful to encourage participants to provide greater elaboration in the discussions whereas the latter was beneficial to stimulate more active discussions. Effective questions for the most part took an open-ended form; for example, what did the discussant think of the costs or the requirements; where did the

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[95] The recordings were prepared using a Philips DVT4100 and a general digital voice recorder.
[96] See Table 4-4: Data Collection Strategies in the Qualitative Phase in Section 4.5.1.

discussant obtain tax information and what did they like best about their role. Another type of effective question was the "think back" question, such as "think back to the last time you lodged your tax return".

In contrast, every attempt was made to avoid ineffective questions. Examples of such questions are questions that can be replied to with a "yes" or "no" (dichotomous questions) and questions that can be answered with one word. In addition, "why" questions that were perceived as demanding and having the potential to make people feel defensive (R. A. Krueger, 2002, p. 6) were avoided. It was considered better to ask about attributes (characteristics or features of the topic) and influences (things that prompt or cause action). For example, "what prompted you to hire a tax adviser?"

The discussions each took roughly one and a half hour to complete. At the end, all participants were acknowledged and received a small token of appreciation. For both sessions, the following cash entitlements were arranged in accordance with Petra Christian University protocols: the facilitator received IDR 1,400,000 (AUD 145.42), and each of the co-facilitators received IDR 300,000 (AUD 31.16). Each of the focus group respondents received a gift voucher valued at IDR 100,000 (AUD 10.38).

Table 5-2 highlights the selected procedures during the discussion sessions.

Table 5-2: Procedures during the Discussion Sessions

Step	Procedures
Welcoming remark	Appreciation expressed to the respondents for attending the discussion; acknowledgement of host and support; highlighting of the credentials of the facilitator.

Overview of the topic	Introduction of the topic; explanation of general information; emphasis of the respondents' knowledge and expertise in contributing the study.
Ground rules	Expectation of different opinions during discussions; securing of approval for audio-recorded sessions; confirmation of confidentiality for the reports.
Discussions	Raising of five sequential types of questions; involving of all respondents in the discussions; application of pauses; and use of effective questions.

Source: group discussion data set.

5.3. Discussion Group Analysis

All relevant information from the focus groups was then collated, coded, and analysed. At least four approaches have been identified as being appropriate for analysing qualitative data (Bryman, 2016, pp. 570-593).[97] For the purposes of this study, thematic analysis was chosen primarily because of its flexibility (Alhojailan, 2012, p. 41; Javadi & Zarea, 2016, p. 35).

It has been noted that it is important for the researcher to generate his or her own transcription (Hydén & Bülow, 2003). Although this process was time consuming, it was beneficial for this study. Not only could the researcher familiarise himself with the data, but it also enabled him to generate the preliminary codes (Boyatzis, 1998; Kowal & O'Connell, 2014).[98] To ensure that the transcription corresponded with the

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[97] The approaches include analytic induction, grounded theory, narrative analysis, and thematic analysis.
[98] See Table 4-7: Data Analysis Steps in the Qualitative Phase. To briefly restate the conclusions reached there, those steps are familiarisation with the data, initiation of preliminary codes, exploration for themes; scrutiny for the themes; establishment of the themes; and generation of the report (Braun & Clarke, 2006,

information expressed by the participants during the discussions, the transcripts were sent to the respective participants who were asked for confirmation that the transcript was accurate.

Further, to establish any appropriate generalisations for the purposes of analysis (Maxwell & Chmiel, 2014), the transcribed data were carefully examined to seek to discover any emerging patterns. Every point expressed by the participants which indicated similar concepts to another participant observation was duly noted (Nag, Corley, & Gioia, 2007, p. 828; Saldaña, 2011, p. 95). Those similar ideas during the discussions then were coded[99] and colour-marked based on the contextual information (Attride-Stirling, 2001, p. 388). After coding all the ideas and identifying their correlations, those codes were organised in accordance with the appropriate themes (Saldaña, 2013, pp. 17-22; Yin, 2015, pp. 196-199).

Table 5-3 provides examples of the coding process in analysing the discussion sessions.

Table 5-3: Examples of Coding Process in Analysing the Discussion Sessions

Statement	Code[100]	Themes
"The presumptive tax is simple. I do not want to be bothered by administrative issues. It enables agility in running my businesses."	Providing simplicity Enabling agility	Pre – Hi Pre – Hi

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2013).

[99] Corbin and Strauss have argued that analysing qualitative data involves three coding processes: labelling a code to highlight an idea in open coding; systematically organising all ideas in axial coding; and collectively refining and integrating all the ideas in selective coding (Corbin & Strauss, 1990, pp. 12-14; 2014, pp. 220-310).

[100] Charmaz has suggested the use of gerunds when assigning codes due to the helpful tendency of such classification in transforming actions into topics (Charmaz, 2014, p. 120).

"I use book-keeping (the conventional tax) because (I am) thinking of maximising the business outputs."	Inspiring creativity Maximising outputs	Con − Hi Con − Hi
"It is important to record systematically the gross revenue, that is why I bought a specific software to assist me manage my business accurately."	Recording income Buying software	Mng − Hi Mng − Hi

Source: group discussion data set.

After all the assigned codes had been organised, five main themes emerged: (1) perceptions on the role of tax compliance in running businesses for individual SMEs; (2) preference for a particular tax regime; (3) details of tax compliance activities and the associated costs; (4) management of tax compliance costs; and (5) factors driving the tax compliance costs. Two of the five themes (the tax regime preference and details of tax compliance costs) were then broken down into five sub-themes before being evaluated further, whereas the other three themes were directly analysed into two bipolar codes (high and low). The tax regime preference comprises two sub-themes (presumptive tax and conventional tax) while tax compliance costs include three sub-themes: explicit; implicit; and psychological. The combination of direct pre-existing codes (three main themes each consisting of two bipolar codes) and indirect pre-existing codes (five sub-themes each consisting of two bipolar codes) generated five sub-themes and 16 pre-existing codes.

Again, the researcher reviewed all the data systematically to validate all the assigned codes and ensure they were properly identified. The process involved searching for correlations among those attributes so that they fitted into the themes. In a recursive process the researcher iteratively checked among the five themes to ensure all

attributes were coded properly (Dacin, Munir, & Tracey, 2010, pp. 1400-1401).[101] For example, comments on the taxpayers' preference to use a specific tax regime, due to the differing contexts in which such comments were made as to the use of the taxpayer's resources, were allocated into both the tax regime preference and management of tax compliance costs code categories.[102]

Table 5-4 summarises the details of themes, sub-themes, pre-existing codes, and number of assigned codes in both sessions (see Appendix D: DATA OF FOCUS GROUP DISCUSSIONS for full details of the assigned codes)

Table 5-4: Theme, Sub-theme, Corresponding Question, and Assigned Code

Theme/ variable	Sub-theme	Pre-existing code	Corresponding question(s)																Assigned code(s)
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
The role of tax compliance in running business		rol_hi	3	6	4	5	4	3	4	3	2	2	3	2	3	2	1	3	50
		rol_lo	9	6	8	7	6	7	4	3	5	2	2	5	5	1	1	4	75
Tax regimes	Presumptive tax	pre_hi	0	2	0	1	1	1	2	1	0	1	0	1	0	1	0	0	11
		pre_lo	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	4
	Conventional tax	con_hi	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	4
		con_lo	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Tax compliance costs	Explicit costs	exp_hi	3	1	2	2	4	3	3	5	2	2	3	2	2	2	2	3	41
		exp_lo	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	3
	Implicit costs	imp_hi	1	2	2	1	1	1	2	1	2	3	1	2	0	2	0	0	21
		imp_lo	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
	Psychological costs	psy_hi	1	2	2	3	2	2	2	3	2	1	2	1	1	2	1	2	29
		psy_lo	1	1	2	1	2	2	2	1	2	1	1	1	1	2	1	0	21
The management of tax compliance costs		mng_hi	2	4	3	2	3	3	2	3	3	2	3	2	2	2	2	3	41
		mng_lo	0	2	0	1	1	0	0	1	0	0	0	1	0	1	0	0	7
The drivers of tax compliance costs		dri_hi	0	0	1	2	2	1	1	1	0	1	0	1	0	1	0	0	11
		dri_lo	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL			20	26	24	26	28	24	24	23	23	16	16	18	15	16	8	15	322

Source: adapted from the group discussion.

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[101] Some Qualitative Data Analysis Software (QDAS) such as ATLAS.ti (Friese, 2019) and NVivo (Bazeley & Jackson, 2013) can be helpful for the process. Nevertheless, the study applied Microsoft Excel (Bree & Gallagher, 2016; Meyer & Avery, 2009) for the analysis for simplicity reasons.

[102] The situation where several codes are generated from the one paragraph of text is argued as involving "code co-occurrence" (Guest & McLellan, 2003, p. 191; Namey, Guest, Thairu, & Johnson, 2008, p. 145).

In the above context, one potential way that the date could be evaluated was for the Effect Size (ES) to be analysed (Borenstein, 2009; B. Thompson, 2007).[103] An ES has been argued as representing the level to which a phenomenon exists (J. Cohen, 1988, p. 9; 1992a, p. 156; 1992b, p. 98), and is considered useful to show the magnitude of an effect quantitatively (Fritz, Morris, & Richler, 2012, p. 2; Kelley & Preacher, 2012, p. 137). As a measure that has been regarded as crucial in establishing robust statistical analyses, the American Psychological Association (APA) has recommended inclusion of ESs (along with Confidence Intervals (CIs)) for primary results in psychological journals (APA, 2020, p. 92; L. Wilkinson & Statistical, 1999, p. 599).

While there are various ways to estimate ES (Ferguson, 2009, p. 533; H. M. Turner & Bernard, 2006, p. 45; Vacha-Haase & Thompson, 2004, p. 474), a simple group difference, such as subtraction (Π_1-Π_2) or division (Π_1/Π_2), could be used to assess the magnitude of an effect (Durlak, 2009, p. 918; Fleiss & Berlin, 2009, p. 238). The practice of using this original measurement scale has been recommended whenever feasible (APA, 2020, p. 93). The study, therefore, selected the operation of division (or the rate ratio) to estimate ESs.[104]

The 322 assigned codes in Table 5-4 were converted into a forest plot diagram by utilising Microsoft Excel (Derzon & Alford, 2013, p. 4; Neyeloff, Fuchs, & Moreira, 2012, pp. 3-4). A forest plot displays an estimation of the overall outcomes visually and is

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[103] See the narrative on power analysis, at n 70 above.
[104] For more comprehensive ideas related to analyses of ES (such as Glass's Δ, Cohen's d, Hedges's g, odds ratio, etc), see, e.g., (Cumming, 2012; Ellis, 2010; Kline, 2013; Lakens, 2013, 2014, 2017).

useful to compare variations between research results[105] (Cuzick, 2005, p. 1308; S. Lewis & Clarke, 2001, p. 1479; Li, Zeng, Tian, Levine, & Thabane, 2020, p. 89). In the plot, each theme (Y-axis) was illustrated with its ES (X-axis) and both CIs (high and low) and then arranged systematically so that the largest ES was placed at the top (Catlin, 2017; Fernández-Castilla et al., 2020, p. 302).

Table 5-5 and Figure 5-1 respectively highlight the conversion and interpretative evidence developed from the themes and sub-themes.

Table 5-5: Descriptive Data Analysis of Assigned Code

Theme	Low	High	ES	Std. Error	CI low	CI high
(1)	(2)	(3)	(4) = (2) / (3)	(5) = (4) / √ (4) * (3)	(6) = (4) − (5)	(7) = (4) + (5)
compliance role	75	50	1.50	0.17	1.33	1.67
Presumptive	4	11	0.36	0.18	0.18	0.55
Conventional	1	4	0.25	0.25	-	0.50
explicit costs	3	41	0.07	0.04	0.03	0.12
implicit costs	2	21	0.10	0.07	0.03	0.16
psychological costs	21	29	0.72	0.16	0.57	0.88
Management	7	41	0.17	0.06	0.11	0.24
Driver	1	11	0.09	0.09	-	0.18

Source: group discussion data set.

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[105] Given this informative feature, forest plots are helpful to conduct meta-analyses (Alavi et al., 2020; H. Cooper, Hedges, & Valentine, 2009; H. Cooper, Patall, & Lindsay, 2015). Meta analysis is an extensive attempt to systematically analyse and integrate research findings from numerous literature sources which have a similar research focus (Glass, 1976, p. 3; Hedges & Olkin, 1985, p. 10).

Figure 5-1: Forest Plots of the Coded Data
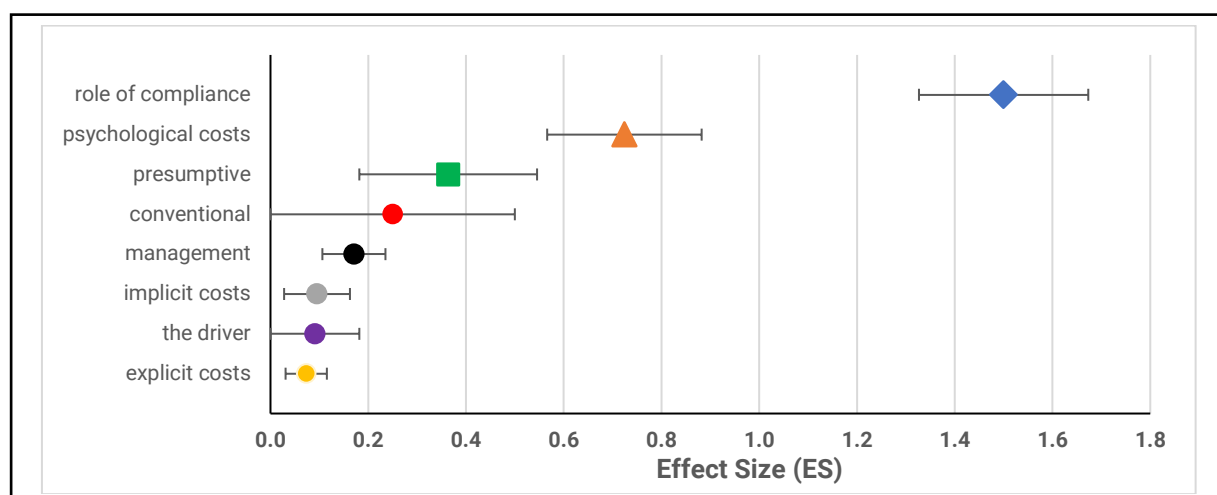
Source: adapted from the group discussion.

Figure 5-1 highlights some interesting points. First, with participants encouraged to freely express their opinions around the structured inquiries, the topic of compliance dominated the discussion sessions (38 per cent) even though it was not the primary research interest and its ES was the highest among other themes. Secondly, psychological costs were measured to have more influential effects (ES = 0.7) and were estimated to be higher compared to implicit costs (0.1) and explicit costs (0.07). This prompted substantial survey enhancements which will be described shortly. Finally, despite limited ESs of the presumptive tax (0.36) and the conventional tax (0.25), the researcher also found some of the discussions helpful to plan for management of the collection of data from prospective respondents in the quantitative phase.[106] The results in Figure 5-1 are now elaborated upon in more detail.

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[106] It is noteworthy that the literature has emphasised the importance of CIs and carrying out a careful interpretation of this data (Cumming, 2012; Cumming & Finch, 2005; Finch & Cumming, 2009). The study, however, has not comprehensively considered these results in the current phase and focused more on the necessary improvements for the next phase.

5.3.1. The Role of Tax Compliance in Running Businesses

The first theme describes two important findings related to the general profile of individual SMEs in Indonesia. First, perhaps obviously, individual SMEs were distinguished to an exceptional degree by the following characteristics: goal-driven, industrious, opportunist, and tenacious related to their business management. Their work on routine activities also occupied so much of their time that they tended to overlook other issues, perceived to be trivial, such as record-keeping. Consequently, the obligation of record-keeping for taxation was considered daunting for them, especially those less educated individual SMEs.

This was reflected in the following statements made by participants in respect to the business taxpayer characteristics:

o   Individual taxpayers have weaknesses in record-keeping. All they know is how to sell and how many products are coming in. Most of them are not even aware whether they gain profit or loss. – (ID: TA2AY/male);

o   To me, turnover is [what] really matter[s]. – (ID: TP2LB/male);

o   Their (individual SMEs) daily life concern is only work. There are days they do not even have the time for their meals. They are overloaded with work let alone record keeping. – (ID: TA5LR/male).

Secondly, the majority of individual SMEs have only a limited awareness of tax compliance. It seems from the discussion that the biggest motivation to comply is tax enforcement. In conjunction with the first finding, individual SMEs have mixed views

related to their tax compliance obligations. The better their educational background, the better understanding they had of their compliance obligations. Conversely, those with less educated backgrounds tended to underestimate the tax compliance obligations with the standard response of "I do not know" despite repeatedly being advised by tax advisers. To make it worse, these types of individual SMEs were easily influenced by "bad" peers. For instance, among some business taxpayers, tax compliance was not considered astute.

This was highlighted in the following statements made by participants:

o There are two types (of individual SMEs). It is easier to explain things to the younger generation than to the older one. Those over 50 years old close themselves [off] from receiving any knowledge (tax advice). When audited and subjected to punishment, they would come up with the argument "I do not know, I do not understand". – (ID: TA3WD/female);

o Frankly, I am not willing (to pay taxes) as I noticed some unscrupulous individuals spending (the tax payments) on lavish lifestyle with the tax payments I made. Then I realised if we ourselves do not start to comply, who else (will)? – (ID: TP3HK/male);

o They start to comply (tax) when they think they will get caught. – (ID: TA1ZA/female);

o For as long as the business is running well, paying taxes is obligatory and a must. It is a big risk for not complying. When caught, all the hard work will vanish. Therefore, it is better to pay the insignificant amount of tax rather than cheating (tax). – (ID: TP2LB/male);

- o They often have a discussion (about tax). Anyone paying bigger taxes is mocked as foolish. Assuming that paying taxes is stupid. – (ID: TA2AY/male).

5.3.2. Tax Regime Preference

The second theme identified two crucial factors related to tax regime preference: economic/ financial considerations and flexibility. The economic factor was the most important consideration. For example, it was the underlying reason for choosing the presumptive tax regime. Despite being perceived as low at 0.5 per cent of turnover, the presumptive tax rate generally accounts for 4 to 6 per cent of the gross profit of the business. Consequently, for retail taxpayers whose most optimistic gross profit was 2 per cent, the presumptive tax was not viable for them. In contrast, for businesses in the service sector, the presumptive tax seemed more attractive than the conventional tax. For them, the presumptive tax provided not only simplicity, but also lowered the effective tax rate.

The second factor was flexibility. Some business taxpayers preferred the presumptive tax because it enabled them to run businesses with simple tax management. The simplicity of the presumptive tax was also confirmed by tax advisers. Conversely, however, some other business taxpayers considered that the conventional tax could maximise business management outputs.

This was evidenced in the following statements made by participants:

o   For those retail distributors, they (some of) have been quoted (the price) by the manufacturer. A margin of 2 per cent is the most optimistic gain they may get. The 0.5 per cent on average equals to 4 to 6 per cent of gross profit. Clearly, it is not profitable for (businesses operating in) trading whereas it may be beneficial for (those who render) services. – (ID: TA5LR/male);

o   The presumptive tax is simple. I do not want to be bothered by administrative issues. It enables agility in running my businesses. – (ID: TP3HK/male);

o   (The tax compliance costs) for those using the presumptive tax obviously would be much lower because there is no need to maintain book-keeping. The consultation fee would also be lower. Meeting with the consultant just once a year when preparing the annual tax return. – (ID: TA1ZA/female);

o   I use book-keeping (the conventional tax) because (I am) thinking of maximising the business output. – (ID: TP1MS/female).

5.3.3. The Significance of Tax Compliance Costs

The third theme considered the general view of tax compliance costs for business taxpayers. Somewhat surprisingly, it seemed that tax compliance costs were not considered significant for business taxpayers. This was suggested in the following statements made by participants:

o   By applying a system and employees can manage the tax matters, the costs become insignificant. – (ID: TP1MS/female);

o   Is it significant? I think, the costs are significant when it threatens my business. For as long as the business is running well and paying tax is affordable (the

costs) are not significant. It's just the same ordinary expenses. – (ID: TP3HK/male).

Perhaps those views can be attributed to both the high degree of working experience and formal education of participants. Therefore, it was determined that the influence of tax experience and education on tax compliance costs would be tested empirically in the quantitative phase analysis.

5.3.4. The Management of Tax Compliance Costs

The fourth theme highlights a very important feature in the operations of business taxpayers. Business taxpayers are exceptionally innovative and motivated. To focus more on progressing their businesses, they usually need assistance with tax matters. For that reason, most business taxpayers hire tax advisers to help them manage their tax affairs. In respect of routine tax compliance activities, they might also be assisted either by employees or unpaid helpers. This was suggested in the following statements made by participants:

o   I would rather delegate the tax matter to the someone who can handle it. (I) can focus on the business or seek other business opportunity. – (ID: TP1MS/female);

o   In respect of time, individual SMEs would be better off with hiring tax advisers. (To understand the tax) they must read the tax rules, not to mention any latest tax updates. (By hiring tax advisers) they can be more focused in managing their businesses. – (ID: TA1ZA/female);

o   Tax adviser assists me in understanding the tax rules, provides guidance to expand my business in accordance to the tax law. – (ID: TP3HK/male).

Another aspect of the management of tax compliance costs is the issue of tax bunching related to the threshold of the VAT. Some individual SMEs preferred to stay below the threshold for the economic reasons. It seems that the costs or administrative inconvenience associated with the VAT motivated such behaviour.[107] As a result, taxpayers preferred to conceal their actual turnover when the turnover exceed IDR 4.8 billion. This was revealed in the following statements made by participants:

o   (Business) With annual turnover IDR 4.8 billion (on average) generate profit of IDR 80-90 million. (If) they turn into VAT enterprises, the profit would be diminished by the VAT compliance costs and may even become negative. That's the dilemma: they want to comply but (the compliance) is high costs. Consequently, they do not report the annual turnover and stay below IDR 4.8 billion. – (ID: TA2AY/male);

o   My (business) turnover is above IDR 4.8 billion. I do not want the hassles (of VAT). For that reason, I split my business by establishing a new business entity. This is legal and my (tax) adviser recommended it. – (ID: TP3HK/male).

This behaviour is also observed in a recent study (Saputro, 2020) that examined the bunching behaviour of small taxpayers in responding to the presumptive tax regime,

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[107] A need to be competitive in the market could be another reason. Levying VAT would make their products or services more expensive.

which commenced in 2013, as well as to the VAT threshold expansion. The study revealed that, given the significance of compliance costs associated with the VAT, small taxpayers attempted to stay below the new VAT threshold. Hence, it is necessary to simultaneously combine tax and non-tax incentive strategies to tackle this bunching issue (Saputro, 2020, p. 27). Another possible solution to tackle this issue is to provide tax breaks to the taxpayers with taxable outputs near the threshold or reduce the tax liability on taxpayers that have tended to limit their outputs to the threshold level (Dharmapala, Slemrod, & Wilson, 2011, p. 1043).

5.3.5. Factors Driving Tax Compliance Costs

The final theme considered the importance of the general interaction between the tax office and taxpayers. When this went well, the taxpayers incurred fewer tax compliance costs, especially psychological costs. It emerged from the discussion and a comparison of participants' current experience with the tax administration with that in the past that the tax administration reform has progressed well. The tax office in the past had a bad image as a result of there being some corrupt tax officers. It is now viewed more positively thank to its modernisation efforts. This was revealed in the following statements made by participants:

o Tax is no longer frightening because (the administration) is transparent. – (ID: TP1MS/female);

o (Previously) unscrupulous persons were intimidating and causing discomfort. (it caused) stress due to the assumption that tax was complicated and difficult.

Realising that taxes must be duly paid, I am no longer afraid and no more stress. – (ID: TP3HK/male).

However, it was noted that psychological costs may also increase when the tax office undertakes inquiries into any aspect of the tax administrative obligations of the taxpayers. Some individual SMEs confirmed that they have suffered uneasy experiences when receiving notices from the tax office. From the perspective of the tax office, the practice is considered necessary to ensure taxpayers' compliance, for instance, for the tax office to remind taxpayers to submit tax payments due or to lodge tax returns. However, a caveat in this context is that the tax office should not misuse the practice, as it has been reported that some of the inquiries were not necessary. Thus, tax notices should be issued with caution as overuse of this practice may lead to greater detrimental effects than gains.

This was reflected in the following statements made by participants:

o   They were terrified on receiving any letters from the DGT. Even to open (the letter), they don't dare. When we asked what the letter was about, they sometimes replied do not know and presented the unopened envelope. – (ID: TA2AY/male);

o   Tax adviser also helped me on receiving "love letters" from the tax office. It was so official that we as commoners would feel terrified. – (ID: TP3HK/male);

o   One of the performance indicators of the tax officer is the number of tax notices issued. There is a tendency that the DGT focuses on issuing as many tax notices [as possible] while (mostly) the contents are inaccurate. It brings hassles

especially when the tax officer is only after the quantity of the tax notices. – (ID: TA2AY/male).

To improve the quality of any tax notices that are issued by the tax authority, some initiatives may be worth implementation, including but not limited to: conducting capacity building (for example, skills development) training for tax officers ; linking tax databases with the national database so that tax officers can verify any information before issuing any tax notices; and re-formulating a key performance indicator for tax officers which places greater emphasis on the quality of the issued tax notices (using verified data and confirmed by the taxpayers).

Another driver of tax compliance costs that was confirmed in the focus groups is the existence of a tax dispute. Generally, when tax was managed properly, the tax compliance costs could be considered insignificant. In contrast, when it was not managed well, the consequences would be significant when taxpayers were audited. While tax compliance costs were generally manageable, serious negligence would increase the tax compliance costs and could be very troublesome for taxpayers. Thus, proper tax management should be maintained to avoid any such major problem. This was suggested in the following statements made by participants:

o   Their tax compliance costs increased when they were audited. – (ID: TA3WD/female);

o   I have a fellow businessman. When the tax office audited (his business), his house was sold to pay his tax liabilities. That is why, we better comply (with the tax law). – (ID: TP1MS/female).

5.4. Implications for Survey Development

As a result of the focus discussions, various points related to tax compliance costs emerged in relation to individual SMEs in Indonesia as set out below. First, the owners of SMEs were perceived to be industrious and considered their businesses as their primary interests. To administer their tax matters, they tended to choose the most cost-effective tax regime and would then rather delegate compliance with it to someone else with expertise (or tax advisers).

Secondly, tax compliance costs seemed to be affected to a substantial extent by some other matters,[108] including, to name a few, education, experience, and tax inquiries issued by the tax office. The results suggested that the more experienced and the higher the education level of individual SMEs, the less significant were their perceived tax compliance costs. Conversely, the greater the number of tax inquiries, the more substantial were the perceived costs, particularly the psychological costs. For that reason, it was considered that questions addressing these three factors (education, business experience, and level of revenue authority inquiries) should be included in the final survey instruments.[109]

Finally, considering the tendency of individual SMEs to hire tax advisers (see Section 5.3.4. The Management of Tax Compliance Costs), it seemed worthwhile to examine

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[108] In addition to the factors described in the literature: see Table 3-5: Tax Compliance Cost Studies, Main Findings as to Characteristics and Drivers.

[109] See Appendix D: Q8 (education); Q17 and Q62 (experience); Q52, Q58, Q59 and Q60 (tax inquiries).

further the role of tax advisers,[110] especially in alleviating psychological tax compliance costs.

5.5. Conclusion

This chapter has detailed the conduct of the qualitative phase of the study. Section 5.2 described the organisation of the focus group discussion process, involving nine respondents who participated in two group discussions, while Section 5.3 provided analysis of the outcomes of the focus group discussions. Utilising Microsoft Excel, the researcher analysed the transcribed data by applying a theoretical thematic approach which generated five main themes: (1) role of tax compliance; (2) tax regime preference; (3) significance of tax compliance costs; (4) management of tax compliance costs; (5) drivers of tax compliance costs. After those themes had been established, Section 5.4 highlighted the implications of the findings for survey development.

On the above basis the study moves in the next chapter to set out in detail the development and conduct of the main survey, and to present the findings from an inferential analysis of the data derived from the process.

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[110] See Appendix D: Q31 (tax adviser).

Chapter 6: **SURVEY CONDUCT**

6.1. Introduction

The previous chapter detailed the qualitative phase of the research, including the conduct of the focus group interviews and analysis of the outcomes. Based on the background to the subject which was identified, it demonstrated that five themes emerged from the analysis. It also indicated the manner in which the qualitative phase led to enhancements of the survey instrument. After the conduct of the focus groups and analysis of results, the second component of the selected mixed-methods design of the study is the quantitative phase.

In this context, this chapter provides information about the conduct of this quantitative phase of the research. Section 6.2 considers the selection of the sample for the survey distribution – which is based on two criteria: submission of tax payments and lodging of tax returns. Following the sample selection, the design of the questionnaire is explained in Section 6.3. It provides details about the four parts of the questionnaire: recruitment filter; Participant Information Statement and Consent Form (PISCF); respondents' characteristics; and tax compliance costs inquiries. Section 6.4 then evaluates the pilot testing. It discusses the technical issues that arose; length of time required to complete the survey; and internal reliability of the survey instruments. These findings of the pilot testing proved to be helpful in enhancing the administration of the main survey, which is discussed in Section 6.5. This section provides details of the four elements of the conduct of the survey: the finalisation of the questionnaire;

timing of the survey; survey distribution; and response rate. Section 6.6 summarises the key points from the chapter.

6.2. Sample Selection

The key element of the quantitative phase of the study was the conduct of a survey. The current section considers the population of potential participants in the survey which, as mentioned in Chapter 4, needed to cover individual SMEs in Indonesia in 2019. To identify this population, two criteria were considered: regular tax payments and annual tax returns.

For the first criterion, the study evaluated the number of individual SMEs who submitted monthly tax payments during the period 2013 to 2019.[111] It also distinguished two types of tax payment stipulated by the government related to the individual SMEs. Taxpayers in the presumptive tax regime submit monthly tax payments by using one particular tax payment code ("411128 420") whereas individual SMEs adhering to the conventional tax regime select an alternative tax payment code ("411125 100") (DGT, 2015d). Bearing this difference in mind, the total of individual SMEs who submitted tax payments regularly exceeded 1.9 million taxpayers in 2019. Thus almost all (97 per cent) were presumptive taxpayers while the remaining 3 per cent applied the conventional tax regime.

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[111] The presumptive tax was launched in 2013 (Indonesia, 2013): see n 3.

Table 6-1 highlights the increasing number of individual SMEs who applied the presumptive tax regime as well as the decreasing number of taxpayers who used the conventional tax regime over the period 2013 to 2019.

Table 6-1: The Distribution of Individual SMEs Submitting Routine Tax Payments, Indonesia, 2013−2019

Year	Conventional	Presumptive	Conventional (%)	Presumptive (%)
2013	367,065	147,018	71	29
2014	201,777	350,273	37	63
2015	101,316	541,350	16	84
2016	83,917	769,367	10	90
2017	79,468	1,139,132	7	93
2018	65,700	1,489,656	4	96
2019	58,825	1,869,868	3	97

Source: based on author's calculations of the DGT's internal data made available to the author.

After considering tax payments, the study also analysed the number of individual SMEs who lodged annual tax returns during the period 2014 to 2018. Generally, the number of individual SMEs who lodged annual tax returns has increased steadily, not only in absolute terms but also by percentage of registered taxpayers, over those five years. As an illustration, there were 0.6 million individual SMEs who lodged annual tax returns in 2013 (about 23 per cent of 2.7 million registered individual SMEs). There was then a threefold increase by 2018, as 1.8 million individual SMEs (about 74 per cent of 2.4 million registered individual SMEs) lodged their tax returns.[112]

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[112] There was a discrepancy (around 0.3 million) between the number of individual SMEs who submitted routine tax payments and those who lodged 2018 tax returns. The difference may come from the fact that

Figure 6-1 highlights the increasing number of individual SMEs who lodged annual tax returns during the period 2014 to 2018. This Figure clearly demonstrates that the increase in tax lodgement of individual SMES in Indonesia is entirely due to a much higher rate of taxpayer participation in the lodgement process. This may have been brought about by the availability of the presumptive tax regime to eligible taxpayers.

Figure 6-1: Number of Individual SMEs Lodging Annual Tax Returns, Indonesia, 2014−2018
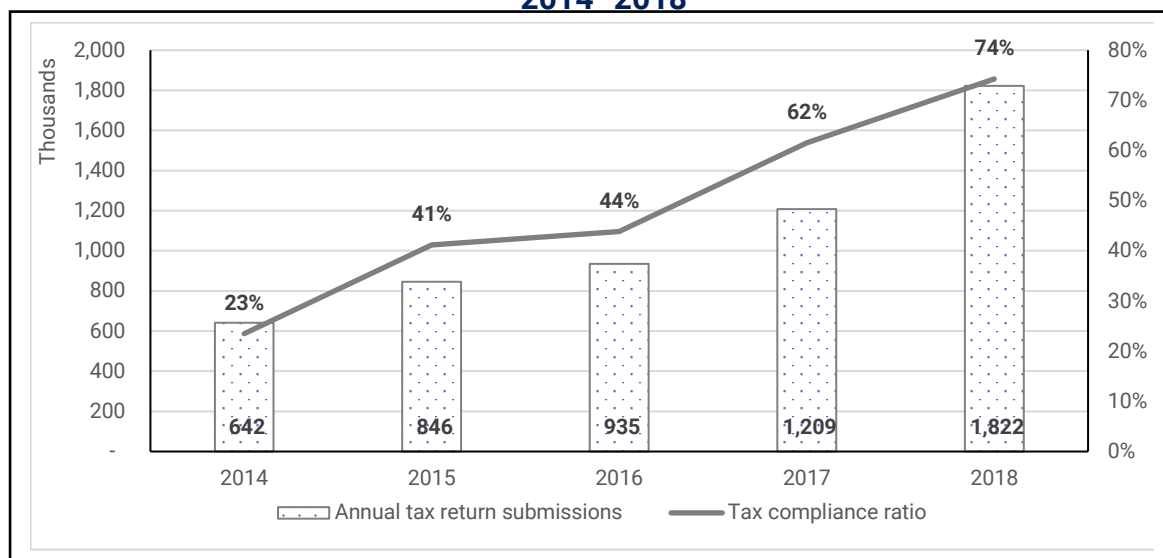
Source: adapted from the DGT Annual Report for year 2018 (DGT, 2019a, p. 192).

Evaluating both criteria, it is safe to assume that the population under study comprises roughly 2 million individual SMEs. In view of this high number of individual SMEs and the vast geographical scale of Indonesia, it was necessary to limit the scope of the potential participants. For that reason, the study focused on the tax payment contributions as the key indicator to determine the sample population. Based on that

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some taxpayers who applied the conventional tax regime would not have submitted tax payments when their previous annual tax returns reported net losses.

criterion, individual SMEs in four provinces (Jakarta, West Java, Central Java, and East Java) were deemed sufficient to provide an appropriate sample. Regular tax payments submitted by individual SMEs in those provinces have contributed consistently more than half of the total number of individual SMEs in Indonesia during the period 2013 to 2019.

Figure 6-2 illustrates the total tax revenue (in billions IDR) collected from conventional and presumptive taxpayer individual SMEs in the four provinces under study during the period from 2013 to 2019.

Figure 6-2: Tax Revenues (in billions IDR) Collected from Individual SMEs in Jakarta, West Java, Central Java, and East Java, 2013–2019
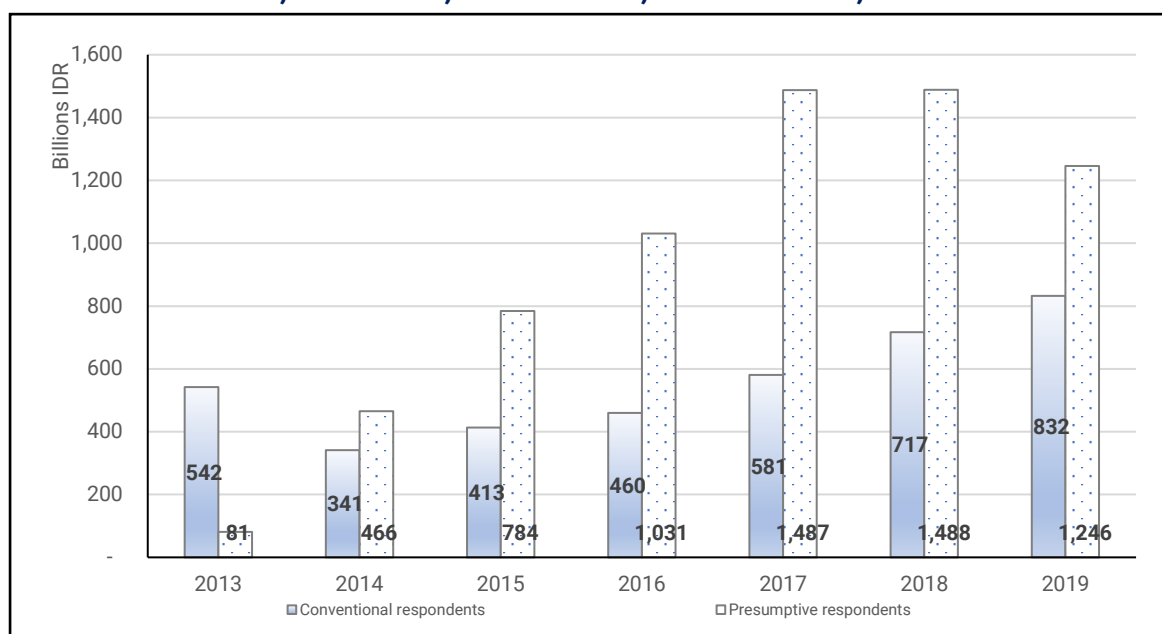
Source: based on author's calculations of the DGT's internal data made available to the author.

Figure 6-3 depicts the annual tax contribution of individual SMEs in the four provinces as a percentage of that of all individual SMEs in Indonesia during the period from 2013 to 2019.

Figure 6-3: Contribution of Jakarta, West Java, Central Java, and East Java to National Tax Revenue Collected from Individual SMEs, 2013–2019
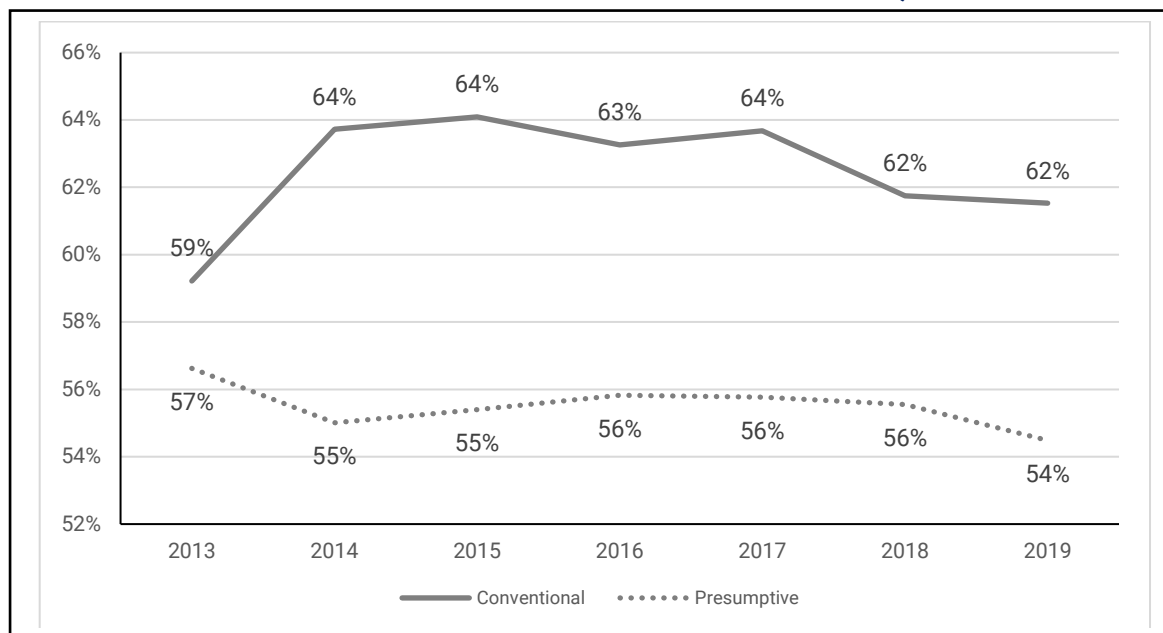
Source: based on author's calculations of the DGT's internal data made available to the author.

In addition to the business location (four provinces), two other criteria were identified for further selection of the participants: it was determined that it was appropriate to ensure an equal number of taxpayers in both tax regimes;[113] and that there should be representation from diverse business sectors.

6.3. Questionnaire Design

The questionnaire survey was implemented as an e-survey by using the Research Electronic Data Capture (REDCap) application (Harris et al., 2009).[114] This application

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[113] In contrast to the skewed composition of the individual SME population in Indonesia (see Table 6-1: The Distribution of Individual SMEs Submitting Routine Tax Payments, Indonesia, 2013–2019), the study applies disproportionate stratified random sampling.

[114] REDCap is a web-based application developed by Paul Harris at Vanderbilt University in 2004 to secure research data by utilising practical electronic forms (Patridge & Bardyn, 2018; Wright, 2016).

provides security and accessibility in designing and administering online surveys and databases. It also facilitates advance features (e.g. auto validation, fields calculation, and branching or skip logic activation) and enables customised queries for generating reports.[115] As a result of its practicality and usefulness 3,207 organisations in 128 countries have reportedly used the application (Harris et al., 2019, p. 2).

The survey contained four sections (see Appendix C**:** SURVEY QUESTIONNAIRE for full details of the survey instrument). The first section (Items 1 to 4) acted as a filter for the recruitment of participants and defined four important criteria to be satisfied by the respondents. These criteria were related to age (must be above 18), main source of income (must be generated primarily from self-employment), business legal structure (must be in the form of a sole proprietorship), and annual turnover (must be below certain thresholds). It may be recalled from Chapter 2 (Section 2.4.2) that individual SMEs who apply the presumptive tax regime in Indonesia must have an annual turnover below IDR 4.8 billion.

Respondents who satisfied all four criteria then moved to the PISCF which provided complete information pertinent to the research. At the end of the PISCF, the respondent was required to enter the city in which his/her business was located and the date (Items 5 and 6 respectively).[116] Implicit consent was then assumed when the respondent clicked on to the next page.

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[115] It is important to distinguish two aspects of a questionnaire: content design (structure and wording of questions) and technical design for an e-survey. Both have been discussed in Section 4.5.2, Data Collection Strategies in Quantitative Phase, in terms of Non-response Errors and Measurement Errors respectively.

[116] The city (instead of name) was required to ensure the anonymity principle. Meanwhile, despite being automatically captured by the e-survey, a date was required as part of the consent form requirement.

The third section contained ten items that were organised into two sub-sections: the respondent characteristics and business features. Questions related to the respondent included gender, highest education level, and book-keeping knowledge (Items 7, 8, and 9 respectively). The business sub-section explored the business main activity, average number of employees, existence of annual financial statements, main use of the financial statement, type of book-keeping system, whether employees were hired to operate the book-keeping system, and if so, the total cost of hiring those employees (Items 10 to 16 respectively).[117]

The final section included questions related to the business tax characteristics and compliance costs. Given the specific inquiries, the section incorporated eight groups of questions. The first group of questions related to the general tax characteristics of the business such as how long the business had been registered with a tax identification number, how the business submitted tax payments, and how the business lodged tax returns (Items 17, 18, and 19 respectively).

The next group of questions was concerned with time spent on various tax compliance activities by business owners, unpaid helpers, and paid employees. Items 20 to 25 sought information about the total number of hours spent per month on learning the tax law, recording information needed for tax, determining taxable income and paying

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[117] To obtain richer responses, the questionnaire applied a branching logic application which enabled the subsequent question to be based on the response to a particular current question. For example, in the case of the question of whether the respondent hired any employee to operate the book-keeping system, should the respondent have selected the option "no", the survey would proceed to the next topic. Conversely, when "yes" was selected, an additional question (related to the topic) was prompted: what were the costs for hiring the employee?

tax liabilities, preparing and lodging tax returns, dealing with the DGT, and dealing with a tax adviser, respectively. Items 26 to 28 asked the respondent to allocate the percentage of total time spent on all tax compliance activities by business owners, helpers, and employees consecutively. Item 29 then sought the respondent's evaluation of the total time spent on all tax compliance activities by all categories of personnel.

The third group of questions in the final section focused on external tax advice. Items 30, 31, and 32 respectively inquired about whether an external tax adviser was hired, why such tax advice was obtained, and the cost of such advice.

The fourth group of questions (Items 33 to 38) were concerned with the prevalence of tax disputes, tax objections, and tax appeals. The questions initially checked whether the business was involved in such an activity and, if it was, how much were the additional costs to the business as a result.

The next group of questions (Items 39 to 45) aimed at investigating the potential managerial benefits of tax compliance to the business. Item 46 then sought to quantify the monetary value of those managerial benefits.

The sixth group of questions (Items 47 to 56) explored the potential of tax stressors associated with tax compliance activities. Some activities included in the inquiries were maintaining record-keeping for tax purposes and lodging tax returns. Following

the inquiries, Item 57 sought to quantify in monetary terms the burden of those stressors.

The second last group of questions (Items 57 to 61) sought information about the general interaction between the respondent's business and the DGT. It then explored the business's perception of tax system complexity (Item 62) and whether the respondent was aware of the expiry of the presumptive tax regime after a certain period of applying that tax regime (Item 63).

The final group of questions (Items 64 to 73) focused on the possible psychological burden of tax compliance activities. For example, the questions sought information about whether the respondent experienced nervousness or stress because of the tax matters and the extent to which they were overwhelmed by the level of difficulty in complying with their tax obligations.

In summary, the survey instrument comprised a total of 73 items: 4 (first section) + 2 (PISCF) + 10 (third section) + 57 (final section). Most of the questions provided five answer options on a Likert scale.[118] The exceptions were binary (yes or no) questions, and some questions related to the respondent characteristics and business features such as gender, education level, book-keeping knowledge, and business main activity. Finally, all the questions required a single response as no multiple responses were allowed.

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[118] Refer to Figure 4-6: Response Options.

For the purposes of the discussion of the further analyses, the construction of the key dependent variables under study, namely explicit, implicit, and psychological costs of tax compliance, needs to be considered. The definitions of these variables and how they are constructed from the collected data are summarised in Table 6-2.

Table 6-2: Constructs of Explicit, Implicit and Psychological Costs of Tax Compliance

Component	Definition	Items in the Questionnaire	Range of Value**
Implicit costs	Time costs of business owners, paid employees* and unpaid helpers	Q29	1 to 5
Explicit costs	Tax adviser costs (excluding tax auditing, objection, and appeal) +	Q32	1 to 5
	Tax adviser costs when dealing with tax auditing +	Q34	1 to 5
	Tax adviser costs when lodging tax objections +	Q36	1 to 5
	Tax adviser cost when submitting tax appeals	Q38	1 to 5
Gross tax compliance costs (Monetary opportunity costs)	Implicit costs + Explicit costs	Q29 + Q32 + Q34 + Q36 + Q38	
Net tax compliance costs	Gross tax compliance costs +	Q29 + Q32 + Q34 + Q36 + Q38 +	
	Estimated compensatory payment for tax stressors -	Q56 -	1 to 5
	Recognised value of managerial benefits	Q46	1 to 5
Psychological costs***	Incidence of perceived psychological burdens when dealing with tax affairs	Q64 + Q65 + Q66 + Q67 + Q68 + Q69 + Q70 + Q71 + Q72 + Q73	1 to 5****

Source: Survey questionnaire.
Notes:
* Strictly speaking, time costs of paid employees are explicit costs. However, for ease of data collection, payments to employees were included in time costs. Thus, the definition of implicit costs in this study was somewhat broader than purely implicit costs.

** Excluding psychological costs, the range of value options of the implicit, explicit, gross tax compliance, and net tax compliance costs are: 1 (0 to IDR 50 mil), 2 (above IDR 50 mil to 100 mil), 3 (above IDR 100 mil to 150 mil), 4 (above IDR 150 mil to 200 mil), 5 (above IDR 200 mil).
*** Reverse-order points for Q67, Q68, Q70 and Q71 to mitigate response biases (see n 74).
**** 1 (never), 2 (almost never), 3 (sometimes), 4 (fairly often), 5 (very often).

Note that, unlike many previous empirical studies of tax compliance costs, the author decided to use the range value approach instead of seeking precise numerical values. This was intended to make the questionnaire more user-friendly in order to maximise the response rate. Further, the author believes it is more accurate to offer the respondents a range of values to choose from, rather than asking them to provide a specific value for each relevant question.

6.4. Pilot Testing

Following the sample selection and questionnaire design, the study moved to the quantitative phase in the form of administration of the survey. Despite the relative advantages and risk mitigations that are associated with surveys (see Section 4.5, Data Collection Strategies), the survey approach largely depends on self-reporting (Mitchell & Jolley, 2012, p. 263) and requires inputs and advice to establish content validity (M. Saunders et al., 2016, p. 473). For that reason, pilot testing is usually recommended (Bell & Waters, 2014, p. 167). Such pilot testing is also very useful to measure the completion time, ensure clarity, and enable necessary improvements to the main survey instruments to be made (de Vaus, 2014, p. 114).

Ideally pilot testing would be undertaken on similar respondents (in this case, business taxpayers) to those who would be responding to the main survey (Bell, 2005, p. 147).

It was not feasible, however, to organise a pilot with business taxpayers because of the pandemic Coronavirus Disease 2019 (COVID-19) outbreak situation (WHO, 2020a). Hence, as a necessary alternative, colleagues, and acquaintances of the author were invited to participate in the pilot survey by email. Most of the pilot survey respondents were tax officers, and the remainder were individual SMEs. The former group were asked to respond as if they were managing their own businesses whereas the latter were not provided with any hint of the context in order to check the clarity of the survey.

From 66 emailed invitations, 52 persons (79 per cent) responded to the invitations and agreed to participate in the pilot. Four eligibility requirements (age, self-employment, sole traders, and annual turnover) were highlighted in advance to ensure the respondents satisfied all the inclusion criteria. A total of 18 respondents were unable to meet the criteria. After checking for eligibility, the respondents were asked to tick the boxes providing their consents (four boxes) to participate.[119] Despite the need for the consents being clearly stated twice in the questionnaire, a further 13 respondents failed to tick all four boxes to proceed to the main survey.[120] Consequently, the pilot testing generated only 21 usable responses. Despite producing less than the ideal number of 30 participants (Perneger, Courvoisier, Hudelson, & Gayet-Ageron, 2015) the pilot proved more than adequate in detecting that there were no major issues of concern with the survey instrument.

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[119] The multiple consents template was suggested by the UNSW Human Ethics Coordinator.

[120] Due to the large number (almost 20 per cent) of ineligible responses because of failure to provide appropriate consent, the study subsequently revised the PISCF form design to move from an explicit consent to an implied consent. The former was specified by ticking the consent box whereas the latter was suggested by clicking on to the next page.

Table 6-3 highlights the pilot survey distribution process.

Table 6-3: Pilot Testing Survey Distribution

Respondent	Presumptive	Conventional	Total
Sample	31	35	66
Responded	30	22	52
Non-eligible	9	9	18
Unchecked consent	6	7	13
Usable response	**15**	**6**	**21**

Source: pilot test data set.

As part of the pilot survey process, the author collected information related to the time needed to complete the survey. It varied from 5 to 20 minutes (average time 9.3 minutes and standard deviation = 2.8). In addition, the respondents were encouraged to provide feedback on questions they perceived to be ambiguous or in need of revision. Based on their feedback, no content revision was necessary and only minor grammatical revisions were applied to the questionnaire. It is important to note, however, that all the participants in the pilot survey had completed university degrees and so had little difficulty in comprehending the contents of the survey instruments.

To measure the internal reliability of the scales applied in the pilot survey, Cronbach's alpha scores were calculated (Cronbach, 1951; Cronbach & Shavelson, 2004). This test is more straightforward than other reliability tests (e.g. split-half technique, Kuder–Richardson 20, test-retest) and can be calculated by using any spreadsheet software (Mondal & Mondal, 2017). While drawbacks to Cronbach's alpha have been

suggested by some scholars (Cho & Kim, 2015; Dunn, Baguley, & Brunsden, 2014; Revelle & Zinbarg, 2009; Sijtsma, 2009), the coefficient is still a robust reliability indicator when certain conditions are fulfilled (Raykov, 2019; Raykov & Marcoulides, 2019).[121]

Ideally, Cronbach's alpha values should be greater than 0.80 (Nunnally & Bernstein, 1994) but not exceeding 0.90 because this may indicate unnecessary redundancy (Streiner, 2003, p. 103; Tavakol & Dennick, 2011, p. 54). Table 6-4 lists the output of the measurement construct. Despite being entirely plausible, the Cronbach's alpha needs to be interpreted cautiously (Cortina, 1993; Schmitt, 1996) because various factors (e.g. outliers and non-normality) may affect the value (Y. Liu, Wu, & Zumbo, 2010; Sheng & Sheng, 2012). Moreover, removing items based on their results on Cronbach's alpha requires more complex approaches (Yang & Green, 2011, p. 389). Nevertheless, for simplicity in the pilot testing, the research did not conduct additional statistical tests and the author was satisfied with the internal reliability of the pilot testing data.

Table 6-4: Cronbach's Alpha Scores of Pilot Data

Measured construct	Number of indicators	Cronbach's alpha
Tax stressors	10	0.99
Tax dispute	8	0.93
Psychological costs	10	0.99

Source: pilot test data set.

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[121] Raykov and co-authors have argued that Cronbach's alpha is reliable when the average construct loading is above 0.7 and the component loading deviations are between the range of 0.2 to 2.2 by using a latent variable modelling software application (Raykov & Marcoulides, 2015, p. 152; Raykov, West, & Traynor, 2015, p. 436).

The study now considers the administration of the main survey in the next section.

6.5. Main Survey Administration

This section considers four critical aspects of the main survey: questionnaire finalisation; timing of the survey; survey distribution; and response rate. Each of these aspects will be discussed in turn.

6.5.1. Questionnaire Finalisation

The author selected sample respondents from four provinces. To contact chosen participants, the author sought support from the DGT to supply random lists of individual SMEs' email addresses. Nine tax offices in six cities (Jakarta, Cirebon, Semarang, Kudus, Pekalongan, and Sidoarjo) across four provinces agreed to assist the study. To ensure a better balance between respondents in both tax regimes, the survey was distributed on a phased basis. For the first cohort, the study delivered survey invitations (see Appendix E: SURVEY INVITATIONS) to 9,786 email addresses on 20 July 2020. The respondents consisted of a slightly greater number of presumptive taxpayers (5,011) than conventional taxpayers (4,775).[122]

Table 6-5 summarises the absolute and relative distribution of the first cohort of survey invitations by taxpayer type and province.

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[122] The study sent survey invitations to 11,061 email addresses. However, 1,275 emails were undelivered.

Table 6-5: Distribution of Survey Invitations by Taxpayer Type and Province

Taxpayer type Province	Conventional	Presumptive	Total
Jakarta	1,489 (15%)	1,193 (12%)	2,682 (27%)
West Java	490 (5%)	993 (10%)	1,483 (15%)
Central Java	1,868 (19%)	1,693 (17%)	3,561 (36%)
East Java	928 (9%)	1,132 (12%)	2,060 (21%)
Total	4,775 (49%)	5,011 (51%)	9,786 (100%)

Source: pilot test data set.

Figure 6-4 highlights the geographical spread of the initial survey invitations in the six cities of the four provinces.

Figure 6-4: Geographical Spread of the Initial Survey Invitations in Jakarta, Cirebon, Pekalongan, Semarang, Kudus, and Sidoarjo

Source: survey data set. Note: Cirebon is in West Java whereas Pekalongan, Semarang, and Kudus belong to Central Java, and Sidoarjo is in East Java.

6.5.2. Timing of Survey

The timing of survey administration is crucial because it affects the respondents' ability to recall matters from memory in responding to surveys (Brace, 2018, p. 20; MacKenzie & Podsakoff, 2012, p. 562). For that reason, it has been argued that tax compliance cost research should be conducted in line with the submission of annual tax returns (Tran-Nam, 1999a, p. 165). In the case of Indonesia this would suggest that the ideal timing would be some time shortly after the 31 December year end, with returns normally due to be submitted by 31 March.

However, it was not possible to conduct the survey at this ideal time in the case of this study as a result of the COVID-19 pandemic situation. More particularly, the DGT extended the deadline for the 2019 annual tax returns submission for individual SMEs to 30 April 2020 (from 31 March 2020). Consequently, receipt of the list of sample respondents from the DGT was delayed until July 2020.[123] The initial distribution of survey forms commenced on 20 July 2020, and for reasons explained below, the survey remained open until 20 October 2020 (three months later).

6.5.3. Survey Distribution

Despite an initial distribution of questionnaires to nearly 10,000 business taxpayers, the survey received limited responses during the first week (36 responses). To

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[123] The criteria for the sample respondents sought from the DGT included individual SMEs submitting monthly tax payments and lodging annual tax returns for the fiscal year 2019.

increase the response rate, the author sent six reminders to this first cohort during the period 20 July to 6 August (effectively two reminders a week). Perhaps unsurprisingly, this over-enthusiastic effort led to criticism from one recipient. On 10 August 2020, a complaint was received by the complaint contact officer in Indonesia about the frequent emails the taxpayer received related to the study. Valuing the feedback, the author (through the contact officer) expressed sincere apologies for the inconvenience caused and stopped sending further reminders to his first cohort. At this point only 62 responses had been received from the initial cohort.

The author subsequently attempted to boost the response rate with a series of further initiatives: additional invitations to individual SMEs using data from tax offices; recruitment of potential respondents through working and social connections; contact with "gatekeepers" such as tax advisers, educational institutions, and small business associations; distribution of survey links to potential respondents who were listed in a business directory list; and the promotion of the survey through one of the DGT's social media outlets (Facebook). The outcomes of these five attempts to bolster the initially poor response rate are each now dealt with in turn.

The first initiative was made possible as a result of the excellent support of the DGT. Initially, roughly 10,000 potential respondents had been considered sufficient to generate an acceptable minimum number of responses for the purposes of the study (an estimate of just 385).[124] Nonetheless, the process did not go as well as expected. The author therefore invited a second cohort of DGT-provided respondents to

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[124] Refer to the discussion in Section 4.5.2 on Strategies for Sampling Errors in Chapter 4.

participate on 10 August 2020, comprising more than 1,800 presumptive taxpayers. This was followed by invitations to a third cohort of respondents on 2 September 2020, when a further 1,550 taxpayers were invited to participate in the survey. Most of this third cohort (roughly 1,400 taxpayers) were using the presumptive tax regime whereas the remainder (around 150 respondents) were applying the conventional tax regime.

Once again, however, the results were disappointing, as shown in Table 6-6.

Table 6-6: Distribution of Email-based Survey Invitations and Collected Responses

Date	Day	Cumulative Total Invitations Sent	Total Useable Responses Received	Average Response/ day
20/07/2020	One	9,786	3	3.00
10/08/2020	22	11,586	62	2.82
02/09/2020	30	13,136	84	1.87
20/09/2020	45	15,215	116	1.84

Source: survey data set

In a further effort to increase participation, the author also circulated survey invitations to social and work connections. Those who completed the survey were also asked to distribute the survey invitation on a snowballing or cascading basis, to other contacts. Prior to distributing the survey invitations, the author confirmed that potential respondents satisfied appropriate criteria, including the tax regime preference (those who completed the survey were asked to circulate a new survey link to their colleagues who used the same tax regime). Similar to the first initiative, the invitations were sent as unique survey links.[125]

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[125] A unique survey link allows only one respondent. It applies the principle of one link, one respondent.

Several "gatekeepers" were also asked for their assistance in distributing the survey, including representatives from educational institutions, tax advisers, and small business associations. Specifically, some lecturers in Petra Christian University and the students who assisted the study during the focus group discussions were contacted to help circulate the survey invitation. Further, the author also contacted various tax advisers to distribute the survey. One tax adviser proved very helpful by providing a list of individual SMEs who might be potential respondents, all of whom were subsequently invited. Small business associations and a business management centre in Surabaya were also asked to deliver the survey to their listed members and tenants.

Another potential basis for inviting potential respondents participate in the survey was the group of businesses identified through a business directory list. For that purpose, the author used a publicly available website link (https://www.alamatelpon.com/). This website provided contact details (such as email addresses or WhatsApp numbers) which were used for the survey distribution. A drawback of this initiative, however, was the inability to identify the tax regime used by the potential respondents. Hence, unique survey links were sent randomly to potential respondents based on the discussion related to the tax regime preference.[126]

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[126] See Section 5.3.2, Tax Regime Preference.

Finally, and in addition to the email-based survey above, a web-based survey was launched via the DGT's social media network.[127] After an appropriate approval, the web-based survey appeared on the DGT's official Facebook page with effect from 13 August 2020. In contrast to the email-based survey, the web-based survey had three distinguishing characteristics. In the first place, it incorporated a single survey that accommodated respondents from both tax regimes.[128] Secondly, it generated a survey link for more than one potential respondent.[129] Finally, it did not provide an option for respondents who completed the survey to receive an IDR 20,000 electronic gift voucher.

Table 6-7 summarises the contrasts between the email-based survey and the web-based survey.

Table 6-7: Differences Between the Email-based Survey and the Web-based Survey

Differences	Email-based	Web-based
Number of surveys	Two types of survey: one for respondents who use the presumptive tax, the other for those who apply the conventional tax.	A general survey that accommodates taxpayers from both tax regimes.
Survey invitation	Distributes a unique survey link for each respondent.	Provides a general survey link to all respondents.
Incentive	Available.	Not available.

Source: survey data set.

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[127] https://www.facebook.com/DitjenPajakRI.

[128] To identify the taxpayer's tax regime, the survey added a yes/no inquiry as to whether a respondent used the final tax regime.

[129] A general survey link enables more than one respondent to participate in the survey.

6.5.4. Response Rate

The study distributed 17,283 survey invitations in total, but 12 per cent of those were undelivered. From 15,215 delivered emails, only 3 per cent (491 respondents) responded to the survey. Among those who responded, more than half (265 respondents) did not complete the survey and 94 respondents did not satisfy the inclusion criteria. As a result, the email-based survey produced 126 usable responses and generated a net response rate of 0.83 per cent (126/15,215). For the web-based survey, the numbers of responses, incomplete responses, ineligible responses, and useable responses were 28, 20, 2, and 6, respectively. The information is summarised in Table 6-8.

Table 6-8: **Responses to the Email-based and Web-based Surveys**

	Email-based	Web-based	Total
Send out sample	15,215	-	15,215
Responses	491	28	519
Incomplete	271	20	291
Ineligible	94	2	96
Usable Response	126	6	132

Source: survey data set.

The final sample was thus the combination of 126 responses from the email-based survey distribution and six responses from the web-based survey distribution. The final sample consists of 79 presumptive tax regime respondents and 53 conventional tax regime respondents.

Figure 6-5 illustrates how the final sample size was arrived at in a step-by-step fashion.

Figure 6-5: Responses of the Survey During the Period 20 July to 20 October 2020
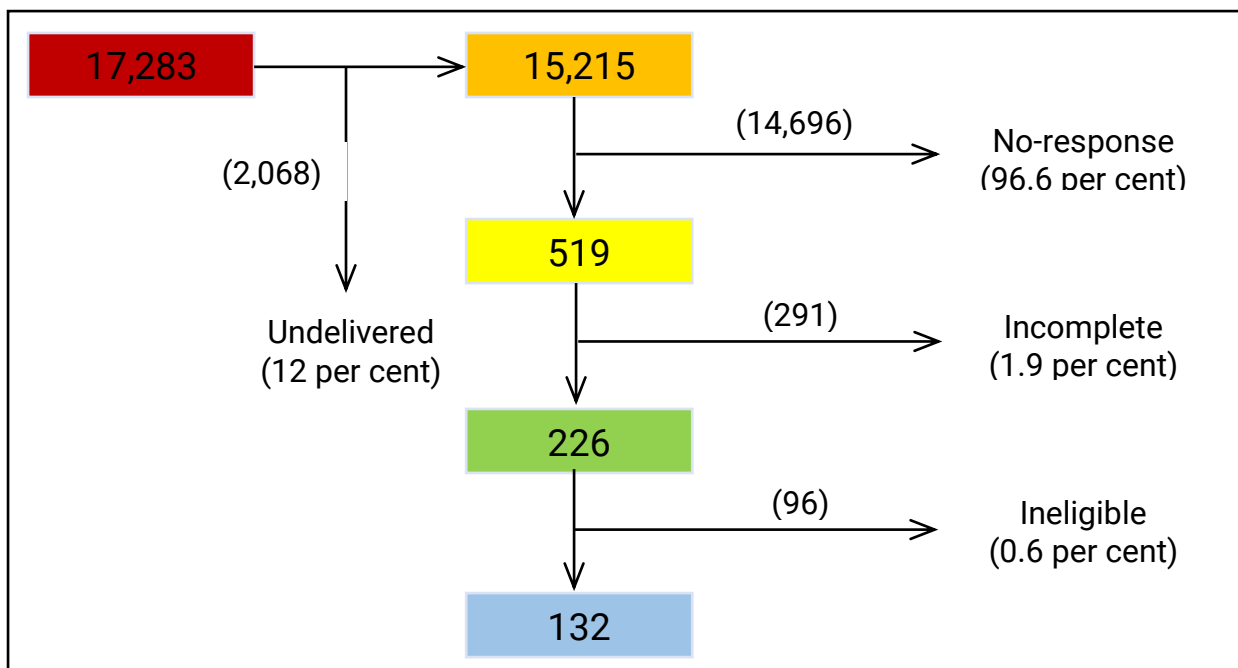
Source: Survey data set.

Figure 6-6 illustrates the progress of the number of useable responses by conventional and presumptive taxpayers to the survey during the survey distribution period from 20 July to 20 October 2020 (the x-axis). It is also apparent from the Figure that the usable responses increased moderately during the initial period from 20 July to 30 September before stagnating during the remaining period.

Figure 6-6: Cumulative Useable Responses by Taxpayer Type Timeline
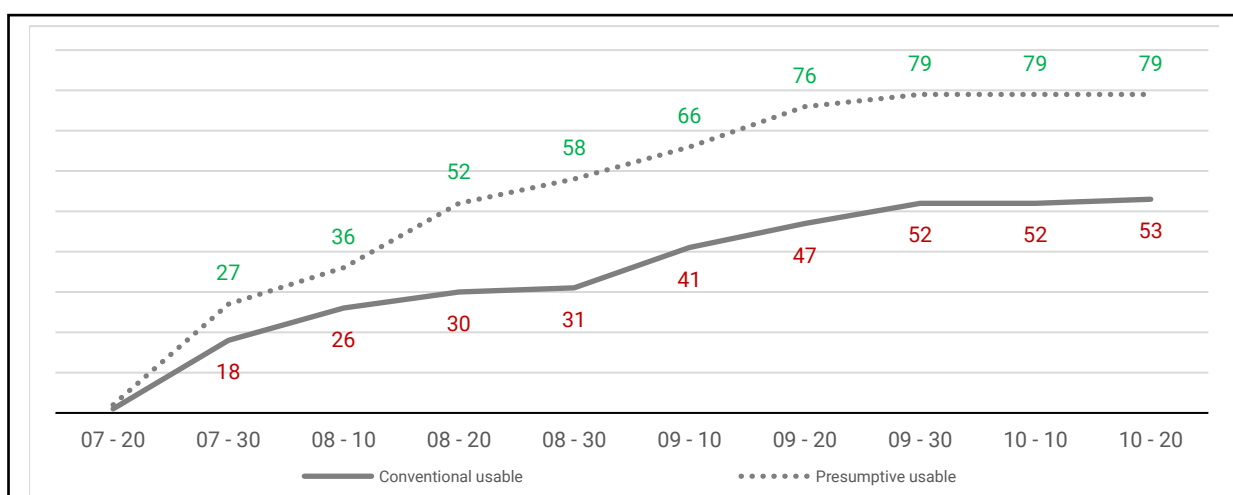
Source: survey data set.

While the response rate is low, the collected responses are nevertheless considered useful for the study. First, the size of the final sample is sufficiently large to conduct valid statistical analyses not only for all taxpayers (132) but also for each taxpayer group (79 for presumptive taxpayers and 53 conventional taxpayers). Secondly, as will be demonstrated later, the sample data possess many desirable properties. They represent a wide cross section of Indonesia's individual SMEs. They do not suffer from non-response bias, and they are also internally consistent. Further, the effect size and power tests (J. Cohen, 1988), first discussed in Chapter 4, indicate that the sample data can be employed to shed light into the various hypotheses formulated in that chapter.

Among various factors which may have caused the low response rate, the COVID-19 pandemic situation was clearly the most serious factor. At a time when both personal and business survival was paramount (Apedo-Amah et al., 2020; Rosita, 2020; WHO, 2020b), participation in an academic exercise would not have been a high priority for potential respondents.

Another factor would be that the questionnaires had many questions covering a wide range of issues. The questionnaire was also designed to require respondents to answer each and every inquiry. Once the respondent was unable or unwilling to answer any particular question, he/she would not be able to proceed any further. This

represents a trade-off between minimising missing data and ensuring an adequate response rate.

6.6. Conclusion

This chapter has detailed how the survey was conducted for the quantitative phase of the study and the four consecutive steps taken in the survey process, namely sample selection, questionnaire design, pilot survey testing and administration of the main survey. Section 6.2 explained the criteria for sample selection for the study. After highlighting the importance of the REDCap application in designing the questionnaire in Section 6.3, the pilot survey testing was explained in Section 6.4. The pilot process confirmed three matters, namely that the survey instrument was trouble-free, that it took a reasonable estimated time to complete, and that there was robust internal reliability in the responses, which was promising for further analysis.

Section 6.5 narrated the conduct of the main survey, namely the questionnaire finalisation, timing of the survey, survey distribution and response rate. Specifically, Section 6.5.1 described the gradual phasing of the survey invitations to potential respondents in the four provinces in Indonesia that had been selected for study. Section 6.5.2 explained the timing of the survey during the period from July to October 2020 and the reasoning used in adoption of this survey timing, while Section 6.5.3 described the efforts that were made during the three-months survey distribution period to increase the participation rate of the survey. Section 6.5.4 explained the

response rate that was achieved after considering all the survey invitations, which reached a rate of 0.9 per cent.

Having considered the issues and problems surrounding the survey distribution, the study now turns in the next chapter to a consideration of the analysis of the survey responses.

Chapter 7: **SURVEY ANALYSIS**

7.1. Introduction

The previous chapter detailed the conduct of the survey. It initially explained the sample selection, questionnaire design, and pilot testing of the survey. After satisfactory results had been achieved in the testing phase, the chapter reported on the administration of the survey in terms of the following elements of that process: questionnaire finalisation, timing of the survey, survey distribution, and response rate. The study now moves on to the analysis of the collected data.

To gain deeper understanding of the tax compliance costs of individual SMEs in Indonesia, the survey analysis focuses on six critical components. After this introduction, Section 7.2 discusses three initial analyses by reference to data checking, descriptive analysis, and summary statistics of key dependent variables. The remaining three components, which are described in Sections 7.3 to 7.5, relate to the findings from an independent samples t-test, results of analysis of multiple mediators, and answers to secondary research questions.

More specifically, Section 7.2.1 explains a series of pertinent analyses in relation to data checking to mitigate the risk of missing data, non-response bias and outliers, and assess internal reliability. Following confirmation that the risks do not undermine further data analyses, Section 7.2.2 provides descriptive analysis in reference to three characteristics, namely demographic, business, and tax compliance characteristics.

After identifying any similarity or dissimilarity between the two groups of taxpayers in those three characteristics, Section 7.2.3 then reports the summary statistics of key dependent variables of tax compliance costs.

Sections 7.3 and 7.4 then consider the answers to six primary hypotheses of the study. The first three of the hypotheses (which predict that the presumptive tax regime leads to lower costs of explicit, implicit, and net compliance costs) are dealt with in Section 7.3 by conducting an independent samples t-test and regression analysis. Section 7.4 examines the further three hypotheses (which anticipate the indirect effect of opportunity costs on psychological costs through the mediators of tax stressors and tax disputes) by performing SEM analysis.

Thereafter, Section 7.5 turns to developing answers to the secondary research questions. The objectives of the research questions, which explore the potential drivers of tax compliance costs of individual SMEs in Indonesia, are achieved through a series of analyses involving Spearman rank correlation, Kruskal-Wallis' test, and multiple regression analysis. This chapter then concludes in Section 7.6.

7.2. Main Survey Analysis

7.2.1. Data Checking

This section discusses the initial preparation and scrutiny of the collected data (see Appendix F: DATA OF SURVEY RESPONSES) used in the study.[130] It examines some risks associated with missing data and late response bias, and issues related to potential violation of the parametric assumptions identified through performance of relevant statistical analyses (outliers, non-linearity, heteroscedasticity, extreme collinearity, and non-normality of residuals). A further test of internal reliability was also performed. The study, however, did not conduct the test of representativeness[131] (Kahneman & Frederick, 2002, 2005; Kahneman & Tversky, 1972) due to the highly distinctive feature of respondents.[132]

Missing Data

The first risk to be considered is missing data, which is a common issue related to data collection. However, this was mitigated in advance for this study by the careful design of the REDCap survey, under which respondents were alerted to complete any missing response before proceeding to the next topic. Hence, the survey did not have any missing data and the treatment of missing data (Baraldi & Enders, 2010, 2013; Enders, 2010) was not necessary.

Non-response Bias

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[130] See Table 4-8: Data Analysis Approaches in the Quantitative Phase for the complete procedures.
[131] An assessment to compare the composition of respondents in the study and that in the research population, e.g. by city population or age groups.
[132] See Section 6.2, Sample Selection.

One of the potential risks in conducting a survey is the possibility of non-response bias (J. S. Armstrong & Overton, 1977, p. 396). Such bias occurs when data collected from those who have responded may be significantly different from those who have not responded (Berg, 2005, p. 3; Lavrakas, 2008, p. 531). It is therefore necessary to classify systematically the characteristics of both respondents and non-respondents to mitigate the bias (K. E. Green, 1991, p. 268).

A possible way to estimate any bias is by comparing the attributes of early and late respondents, a procedure known as the continuum of resistance model (Lin & Schaeffer, 1995; Voogt, Saris, & Niemoller, 1998) or wave analysis. The theory in the model suggests that the respondents' resistance to respond to a survey varies linearly, so that the later respondents to the survey can be taken as representative of non-respondents because they are the nearest to non-respondents on the resistance line (Halbesleben & Whitman, 2013, p. 923). To distinguish early and late respondents, Vink and Boomsma (2008, p. 165) suggested setting 30 days as a threshold: those who respond to a survey within the first 30 days are considered early whereas those who complete it after the threshold are deemed late responders.

Thus, for the purposes of this study, early respondents were those who completed their responses during the period 20 July to 18 August 2020 whereas late respondents were those who responded to the survey after 18 August 2020.

To run the analysis, the study selected three key questions: a question about book-keeping knowledge (Q9), a tax stressor question related to maintaining record-keeping

for tax purpose (Q48), and a psychological burden question relating to nervousness and stress as a result of dealing with tax matters (Q66).[133] Those three questions were chosen because of the sensitivity of the inquiries.

The χ^2 and p-values of the responses to those three questions were calculated by using Microsoft Excel (Quirk & Rhiney, 2016). Table 7-1 summarises the results of the analysis and highlights no significant difference (p-value $\geq$ 0.05) between early and late respondents for each of the three questions under study. Hence, it is concluded that there is no non-response bias in the sample data.

Table 7-1: Non-response Bias Test Results

Indicator	Early		Late	
	χ^2	p-value	χ^2	p-value
Book-keeping knowledge*	2.67	0.45	3.62	0.30
Maintaining record-keeping for tax purpose**	3.07	0.55	4.17	0.38
Nervous and stressed because of tax matters**	2.52	0.64	3.42	0.49

Source: Survey data set.
Note: see Appendix G: NON-RESPONSE BIAS TEST for the calculation details.
* This question has four possible answers. The critical χ^2 value at 5% level of significance and three degrees of freedom is 7.81.
** These questions have five possible answers each. The critical χ^2 value at 5% level of significance and four degrees of freedom is 9.49.

Outliers

An outlier is typically observed as a data point that is located far from other values in a random sample (V. J. Hodge & Austin, 2004, p. 85; H. Liu, Shah, & Jiang, 2004, p. 1635). Outliers have such unusual values that they can be considered "suspicious",

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[133] See Appendix C: SURVEY QUESTIONNAIRE for details of the questions.

"doubtful", "contaminated", and even "fringeliers" (Dixon, 1950, p. 488; D. M. Hawkins, 1980, p. 1; Wainer, 1976, p. 286). Among various approaches to detect an outlier (Pek & MacCallum, 2011; Simar, 2003; Wilson, 1993), the study uses the boxplots method, for reasons of practicality and effectiveness (R. Dawson, 2011; Tukey, 1975).

It was apparent from the results, set out in Appendix H: BOXPLOTS, that some extreme values were noticed especially in the data of explicit and opportunity costs. While the study has considered the potential negative effects of the outliers (McClelland, 2000; Zimmerman, 1994, 1995), the researcher has chosen to retain the data for two reasons. First, it appears likely that the outliers detected in the data were caused by inherent variability.[134] Thus, the study opts to include the original data to ensure the representativeness of the population included in the analyses (Orr, Sackett, & Dubois, 1991; Osborne & Overbay, 2004). Secondly, further complex approaches associated with either removing or revising the outliers (Osborne, 2013, p. 165; Tabachnick & Fidell, 2013, pp. 76-77) seemed not to be justified when weighed against the benefits of retaining the data.

Internal Reliability

The study next examined the internal consistency of the sample data, especially the key data on respondents' perception. Table 7-2 displays the results of the Cronbach's

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[134] Two major factors may cause outliers: possible errors and inherent variability (Anscombe, 1960). As the study has implemented some measures to mitigate the likelihood of the former (see the discussion on Strategies for Measurement Errors in Section 4.5.2), the study argues that the latter are the cause of the extreme values.

Alpha scores in the further analysis involving three variables: tax stressors, tax dispute and psychological costs. For example, the variable of tax stressors consists of 10 indicators (sub-questions), and the Cronbach's alpha for the 10 factors of a value for tax stressors is 93 per cent. Since all the Cronbach's alpha values are greater than 70 per cent (Hair, Black, et al., 2014, p. 123; Taber, 2018, p. 1293), it may be concluded that the sample data are internally reliable.

Table 7-2: Cronbach's Alpha Scores

Measured construct	Number of indicators	Questions	Cronbach's Alpha
Tax stressors	10	sum (Q47:Q55)	0.93
Tax disputes	4	(Q33/Q35/Q37) + Q58 + Q59 + Q60	0.79
Psychological costs	10	sum (Q64:Q73), reverse-order points for Q67, Q68, Q70, Q71	0.85

Source: calculated from survey data.

Having considered some risks associated with the collected data, the study concludes that the data are free from missing data, do not suffer non-response bias, and are internally consistent. Therefore, the study proceeds to further data analyses in the next sections.

7.2.2. Descriptive Analysis

This section explores three aspects of respondent characteristics, namely, demographic, business, and tax compliance. To provide a clear and complete comparison of respondents, those characteristics are highlighted graphically in

Figures, and then each Figure is expanded into an analysis relating to the two types of respondents: individual SMEs who use the presumptive tax regime and those who apply the conventional tax regime (see Appendix I: DESCRIPTIVE STATISTICS). To complete the analysis, a homogeneity test is conducted for each attribute to check whether there is a difference in any characteristic between the two samples.

Demographic Characteristics

The demographic characteristics comprise three key attributes: gender; age; and education.

In terms of gender, more than half the respondents in the survey were male (65 per cent). While this was evident in relation to use of both tax regimes, the dominance of males was highly skewed towards taxpayers who applied the presumptive regime compared to those who used the conventional tax regime. The high proportion of male respondents is not surprising in view of the fact that the proportion of women in managerial positions in 2019 was only 30 per cent (see Statistics (2022)). This is also consistent with earlier international tax compliance cost studies (see Musimenta (2020, p. 7) and Yesegat et al. (2015, p. 10)).

More than two-thirds of respondents (69 per cent) were below the age of 46 and more than half of those two-thirds (36 per cent) were in the age range of 36-45 years. Furthermore, most of the conventional taxpayers (79 per cent) were above the age of 35. The corresponding percentage for the presumptive respondents was 58 per cent.

These percentages make sense as one would expect that individual business owners would need time in order to accumulate sufficient assets or capital before starting their own businesses.

Figure 7-1 describes the composition of respondents based on gender and age range.

Figure 7-1: Respondents Based on Gender and Age Range
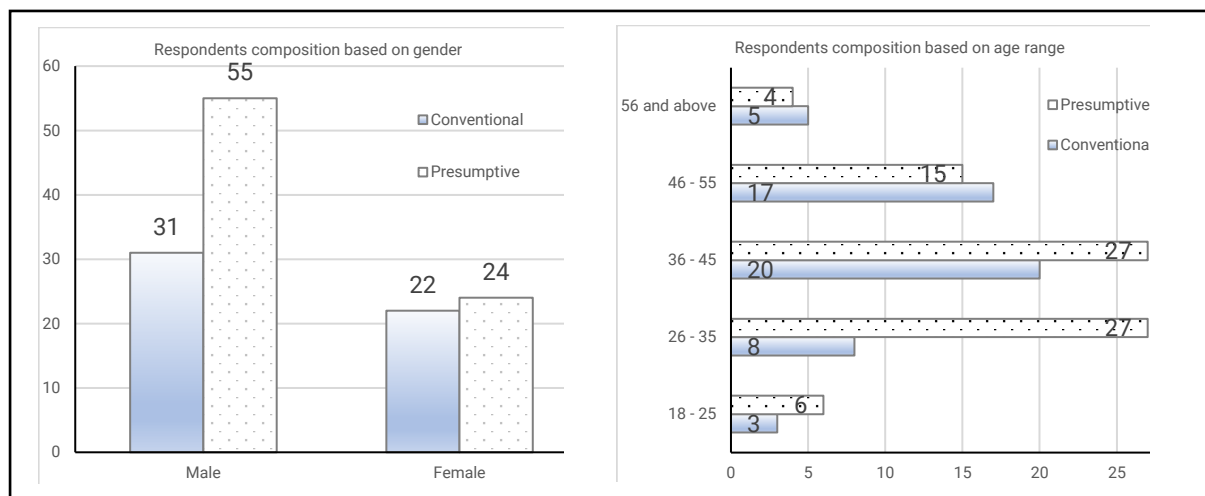
Source: Modified from survey data.

Further examinations also revealed that the z-test for the difference in male proportion in the presumptive and conventional groups yields a *z*-score of 1.32 and a *p*-value of 0.19 (see Appendix J: Z-SCORE ANALYSIS – CATEGORICAL DATA). Thus, there is no difference in the male proportions between the presumptive tax and conventional tax respondents. To test for the difference in age range distribution between the two groups of respondents, the author conducted a χ^2 test of homogeneity (see Appendix K: χ2 TEST). Such a test yields χ^2 values of 3.12 (p-value of 0.54) for the presumptive respondents and 4.65 (p-value of 0.32) for the conventional respondents. Since the critical χ^2 value at 5 per cent level of significance and four degrees of freedom is 9.49,

it can be concluded that there is no difference in the age range distribution between the two groups of respondents.

So far as education is concerned, most respondents (74 per cent) had completed their undergraduate degrees. The dominance of university graduates applied to respondents in both tax regimes. The overrepresentation (underrepresentation) of well (less) educated respondents may simply reflect the fact that well educated individual business owners are more confident than less educated individual business owners in participating in the survey. This has been a common finding in previous survey studies (see for example: Blaufus et al. (2019, p. 937) and Stark & Smulders (2019, p. 807)).

Figure 7-2 illustrates the composition of respondents based on their highest educational level.

Figure 7-2: Respondents Based on Highest Education Level
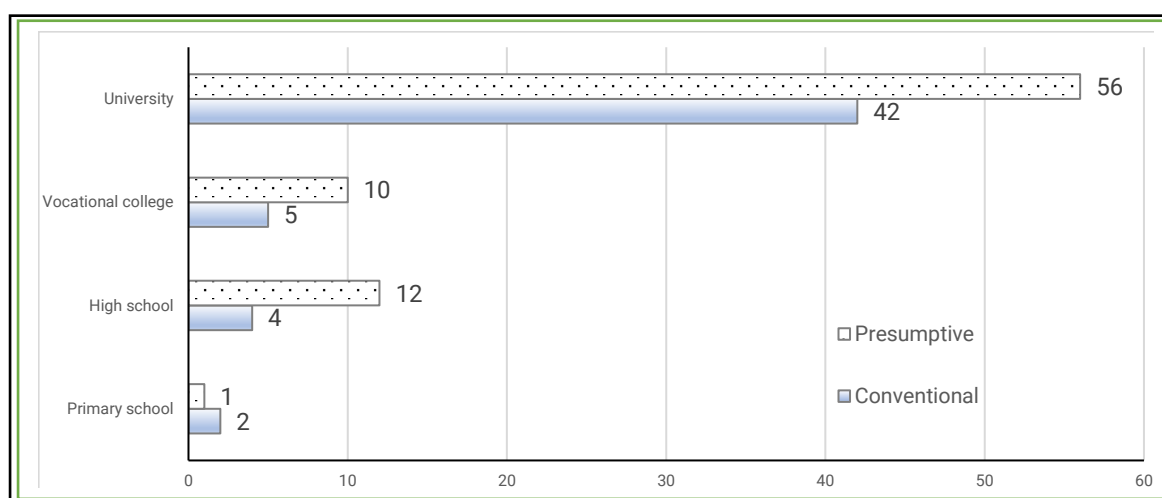
Source: Modified from survey data.

To test for the difference in the distribution of highest education level between the two groups of respondents, a χ^2 test was also employed. The resulting χ^2 values for the presumptive and conventional respondents were 1.20 and 1.79, respectively. At the critical χ^2 value of 7.81 at 5 per cent level of significance and three degrees of freedom, it can also be concluded that there is no difference in the distributions of educational level between the two respondent groups.

In summary, most of the respondents' demographic features are similar for both tax regimes: typically, respondents are male; in an age range between 36-45 years old; and have graduated from university. The similarity is also confirmed with the statistical analyses of those three variables.

In the above context, it is interesting then to examine the cross distributions of two demographic variables (such as gender and education) to see how these variables interact. The cross distributions for presumptive and conventional tax regime respondents are summarised in Tables 7-3 and 7-4, respectively.

Table 7-3: Distribution of Presumptive Tax Regime Respondents by Gender and Education

Gender / Education	Male	Female	Total
Primary school	0	1	1
High school	7	5	12
Vocational college	7	3	10
University	41	15	56
Grand total	55	24	79

Source: survey data.

Table 7-4: Distribution of Conventional Tax Regime Respondents by Gender and Education

Gender / Education	Male	Female	Total
Primary school	2	0	2
High school	3	1	4
Vocational college	4	1	5
University	22	20	22
Grand total	31	22	53

Source: survey data.

The χ^2 test of homogeneity reveals that gender and highest education are unrelated in the sample of presumptive tax regime (χ^2= 1.02 and 2.34) and conventional tax regime respondents (χ^2= 1.44 and 2.03) while both have a χ^2 critical value of 7.81. Nevertheless, from Table 7-4, it is apparent that male participants were more willing than female participants to respond to the survey if they were not highly educated (nine out of 31 in the case of males and only two out of 22 in the case of females).

It has been noted that females in Indonesia have more limited opportunities to run businesses. It seems worthwhile therefore to examine whether tax regime and education are related in any way for the female taxpayers in the total sample. Table 7-5 summarises the cross distribution of female taxpayers by tax regime and level of highest education. The χ^2 test again indicates that tax regime and highest education are unrelated in the sample of female respondents (see Appendix K).

Table 7-5: Distribution of Female Respondents by Tax Regime and Education

Tax regime / Education	Presumptive	Conventional	Total
Primary school	1	0	1
High school	5	1	6
Vocational college	3	1	4
University	15	20	35
Grand total	24	22	46

Source: survey data.

To summarise, the author has found no statistical evidence to support a significant relationship between gender and highest education level for both presumptive and conventional tax regime taxpayers. Focusing on female taxpayers, it has also been established that tax regime and education are unrelated.

Business Characteristics

Following the above analysis of demographic characteristics, the study now moves on to examine the composition of respondents based on their business characteristics. The business elements are described by reference to seven attributes: business location; business sector; business annual turnover; business employees; book-keeping knowledge; the existence of annual financial reports; and record-keeping system.

Regarding business locations, Jakarta and East Java contributed more than half of the respondents (58 per cent) and only 6 per cent of respondents had business

locations outside the selected four provinces. So far as the business sector was concerned, more than three-quarters of respondents (76 per cent) operated in the retail, restaurant, and service sectors. After those sectors, the manufacturing sector contributed 7 per cent of respondents.

Figure 7-3 illustrates the composition of respondents based on business location and business sector.

Figure 7-3: Composition of Respondents Based on Business Location and Sector
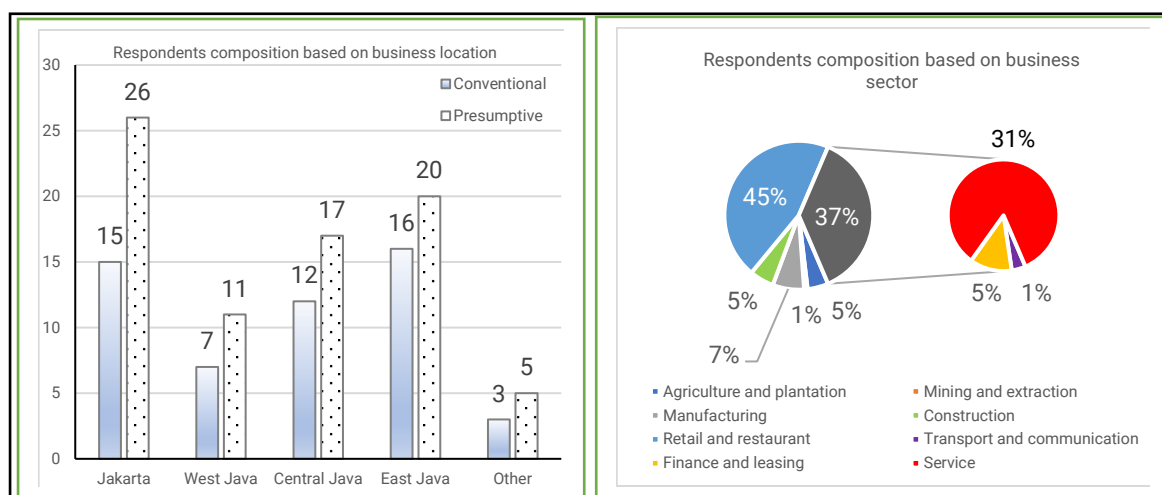
Source: modified from survey data.

A χ^2 test of the presumptive and conventional regime taxpayer responses relating to business location and sector respectively showed p-values of 0.97 and 0.12, confirming that the respondents in the conventional and presumptive tax regime cohorts shared similar distributions in business location and business sector.

In considering business turnover and business employees, more than half of respondents (52 per cent) recorded annual turnovers of less than IDR 500 million; and

almost three-quarters of respondents (72 per cent) hired a maximum of five employees while a minority of respondents (13 per cent) recruited more than ten employees.

Figure 7-4 summarises the composition of respondents based on business turnover and total employees.

Figure 7-4: Composition of Respondents Based on Business Turnover and Employees
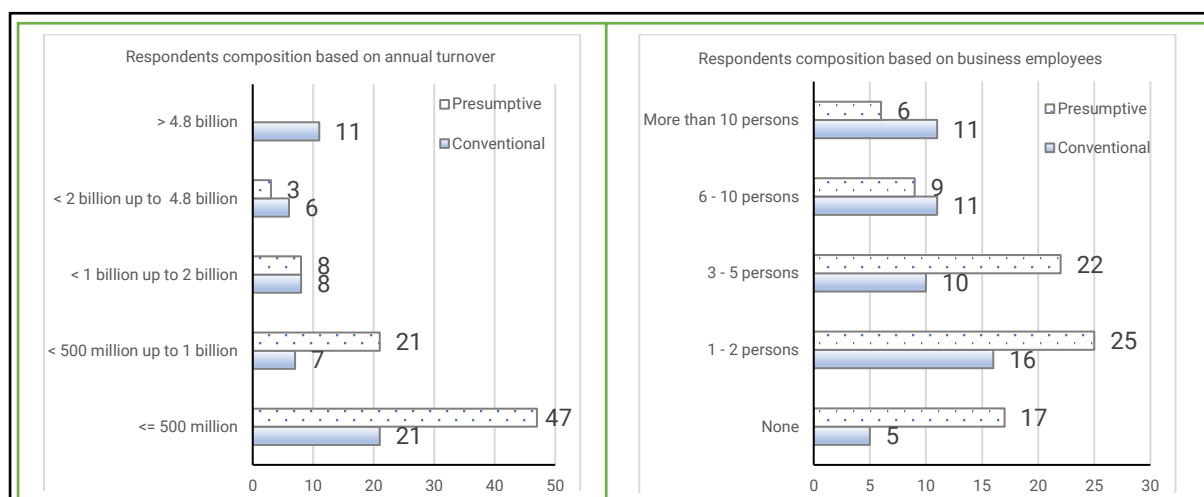
Source: Modified from survey data.

Using a χ2 test, there appears to be a significant difference between the two groups of respondents in terms of business turnover and employees (see Appendix K). An initial examination of Figure 7-4 reveals that the annual turnover of conventional tax regime respondents tends to be concentrated at the higher end of turnovers in comparison to those of presumptive tax regime respondents. This is completely expected in view of the nature of the presumptive tax regime that requires qualifying taxpayers to have annual turnover of less than IDR 4.8 billion. When an individual

SME's annual turnover exceeds that limit, the taxpayer is required to adopt the conventional tax regime.

A further expected feature then appeared when examining the composition of respondents based on the existence of annual financial reports. For presumptive regime taxpayers, those who did not prepare any report (44 respondents) slightly outnumbered those who prepared a report (35 persons). Conversely for conventional regime taxpayers, those who generated the reports were higher (32 taxpayers) than those who did not produce any report (21 individuals).

To test the difference between the two groups statistically, the author set up the following hypotheses:

$$Ho: p_1 = p_2 \quad ; \quad Ha: p_1 > p_2$$

where p_1 = proportion of presumptive respondents who did not prepare a financial report and p_2 = proportion of conventional respondents who did not arrange a financial report. This is a one-sided test because *a priori* it is expected that $p_1 > p_2$. At the 5 per cent level of significance, the critical z-score is 1.645 (The t-test is the same as the z-test when the sample sizes are large). The computed z-score is 1.81 (see Appendix J), indicating that the null hypothesis can be rejected. Thus, it is confirmed that the proportion of conventional regime respondents who prepared a financial report is higher than that of the presumptive regime respondents.

Although p_1 is bigger than p_2 as expected, the proportions of taxpayers who prepared annual financial reports (in both sub-samples) are surprisingly high in view of the fact

that taxpayers in the sample are not required by Indonesian law to produce such reports. This seems to indicate that preparing financial reports is motivated by business owners' desire for better management or other rationales (e.g., for the benefits of lenders), which is supported by the sample data (Q13). This motivation is true for both conventional and presumptive regime taxpayers, although it is as expected stronger for conventional regime taxpayers as discussed above.

Figure 7-5 displays the composition of respondents based on the preparation of annual financial reports.

Figure 7-5: Respondents Based on the Preparation of Annual Reports
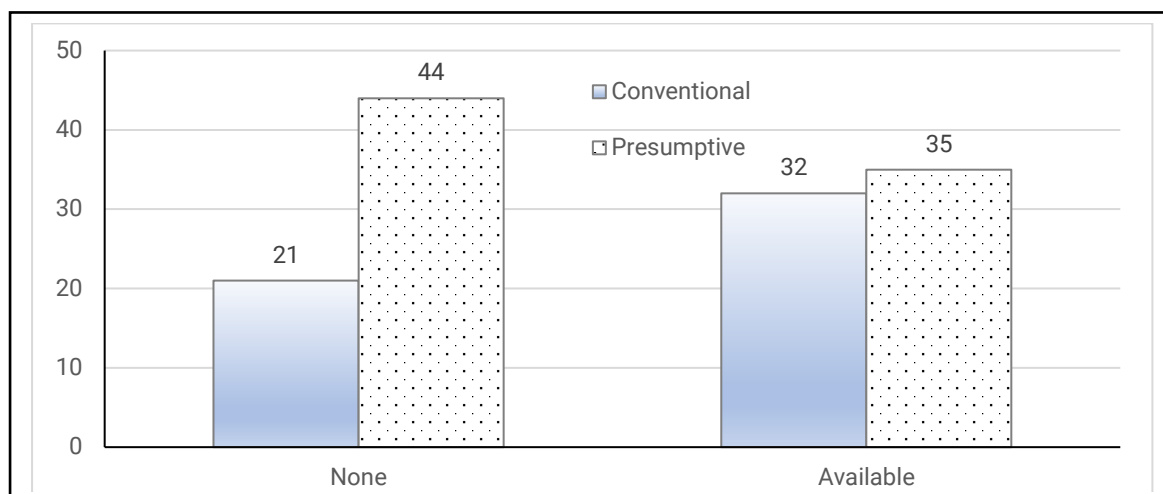
Source: Modified from survey data.

In relation to the book-keeping knowledge characteristic, most respondents (84 per cent) had at least basic book-keeping knowledge and one-sixth of that majority (14 per cent) had advanced book-keeping knowledge. A critical χ^2 value of 7.81 (the χ^2 values for presumptive and conventional regime taxpayers are respectively 2.90 and

4.32) confirms that there is no significant difference between the two groups of respondents in terms of distribution of book-keeping knowledge.

In relation to the book-keeping system, almost half of the respondents (47 per cent) used a simple spreadsheet program (for example, Microsoft Excel). A small minority of respondents (3 per cent) hired external book-keepers and 8 per cent did not maintain any book-keeping system. A χ^2 test (see Appendix K) establishes that there is no significant difference between the two groups of respondents in terms of distribution of approaches to book-keeping systems.

Figure 7-6 displays the composition of respondents based on book-keeping knowledge and systems.

Figure 7-6: Composition of Respondents Based on Book-keeping Knowledge and System
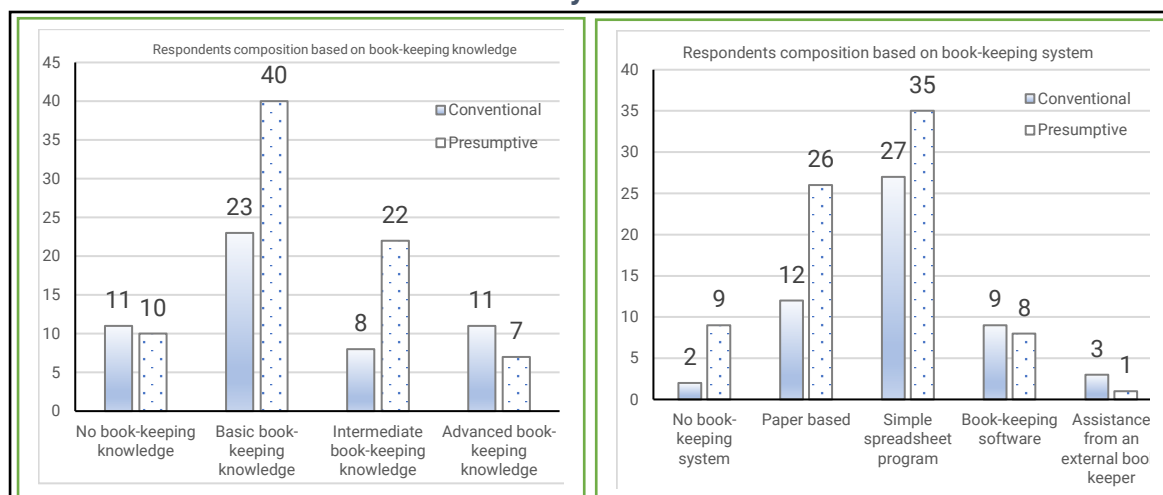
Source: modified from survey data.

To complement the analysis, the author tested the influence of a combination of business characteristics (namely business turnover with financial reports and

business turnover with book-keeping system) on tax regime selection. The cross distributions for presumptive and conventional regime respondents are displayed in Tables 7-6 and 7-7, respectively.

Table 7-6: Distribution of Presumptive Regime Respondents by Turnover and Annual Report

Report \ Turnover	No	Yes	Total
<= 500 million	28	19	47
< 500 million up to 1 billion	11	10	21
< 1 billion up to 2 billion	4	4	8
< 2 billion up to 4.8 billion	1	2	3
Grand Total	44	35	79

Source: survey data.

Table 7-7: Distribution of Conventional Regime Respondents by Turnover and Annual Report

Report \ Turnover	No	Yes	Total
<= 500 million	15	6	21
< 500 million up to 1 billion	1	6	7
< 1 billion up to 2 billion	4	4	8
< 2 billion up to 4.8 billion	1	5	6
> 4.8 billion	0	11	11
Grand Total	21	32	53

Source: survey data.

The test of homogeneity results (Appendix K) found χ^2 values of 1.09 (p-value 0.78) and 19.66 (p-value 0.00) for presumptive and conventional regime respondents respectively. Hence, it can be concluded that business turnover and preparation of financial reports are independent in the case of presumptive regime respondents, but dependent in the case of conventional regime taxpayers. This sensibly suggested that, for conventional regime individual SMEs, business size is positively related to the preparation of financial reports, which is in turn motivated by the need for better financial management. However, in the case of presumptive regime taxpayers, there is no systematic relationship between annual turnover and the preparation of financial reports.

A similar result applies in the cross-distribution analysis to examine the influence of annual turnover and book-keeping system on tax regime selection (Appendix K). The test of homogeneity found χ^2 values for presumptive and conventional regime respondents respectively are 13.77 (p-value 0.32) and 33.71 (p-value 0.01), which suggested that turnover and book-keeping system are not relevant for presumptive regime taxpayers but relevant for conventional regime taxpayers. This is logical as it is expected for conventional regime taxpayers that the larger the business (greater annual turnover) of an individual SME, the more advanced is its book-keeping system.

Summing up, apart from business turnover and total employees, there are no substantive differences, in terms of the remaining five business characteristics considered, between the conventional and presumptive tax regime samples. Most respondents in the study were in Jakarta; operated in the business sectors of retail,

restaurant, and service; prepared annual financial reports; had elementary book-keeping knowledge; and used simple spreadsheet programs to run their book-keeping function.

Tax Compliance Characteristics

Following the above evaluation of business characteristics, the study now examines the composition of respondents based on their tax compliance characteristics. The analyses incorporate such characteristics as tax experience (or the number of years the respondents have been registered with the DGT by reference to tax identification numbers), perceptions of tax complexity, the method adopted to submit tax payments, the approach of the businesses to the lodgement of tax returns, the tendency to hire tax advisers, and the evidence of tax disputes.

In considering tax experience, more than two-thirds of respondents (70 per cent) had been registered for at least three years whereas a minority of respondents (5 per cent) had been registered with the tax administration for less than a year. Most taxpayers (89 per cent) perceived the tax system to be complex and only 11 per cent of respondents did not find the tax system complicated.

To test for homogeneity between the two groups of respondents with respect to distribution of tax experience and perceived tax complexity, the χ^2 test was used. The results of such a test (see Appendix K) indicate that there is no significant difference

between presumptive and conventional regime respondents in relation to the distribution of those two attributes.

Figure 7-7 highlights the composition of respondents based on the number of years registered with the tax administration and perception of tax complexity.

Figure 7-7: Composition of Respondents Based on Tax Experience and Perception of Tax Complexity
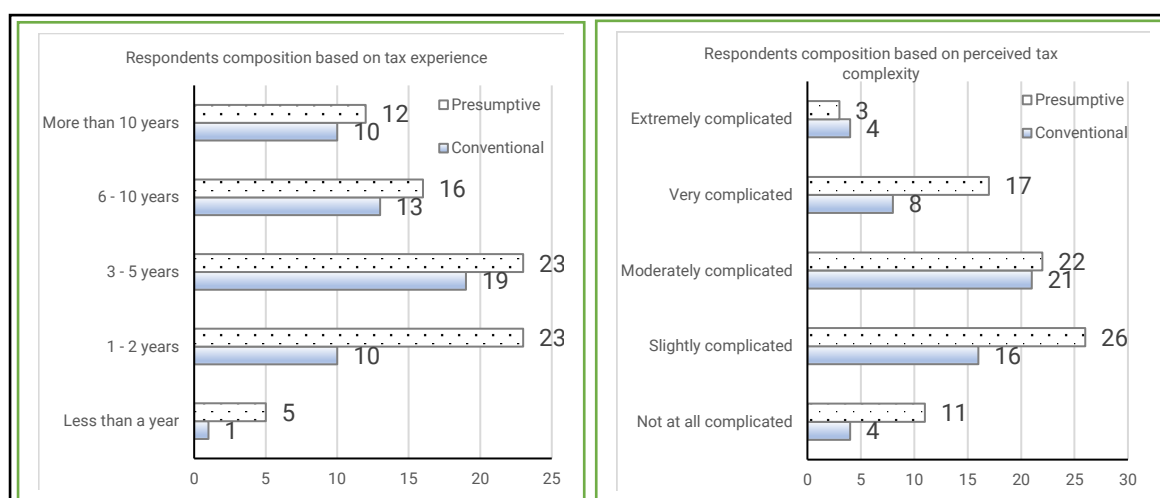
Source: modified from survey data.

A similar pattern appeared in evaluating the composition of respondents based on the method used to submit tax payments and tax returns. Roughly two-thirds of respondents (67 per cent) undertook both sets of tax obligations electronically. Twenty-five per cent of respondents remitted tax payments physically through banks, post offices, and automatic teller machines while 20 per cent lodged tax returns physically in tax offices.

The χ^2 test was then used to check whether any difference exists between the two groups of taxpayers respectively in tax payments and lodgements. The results of the

test confirm that both presumptive and conventional regime respondents share similar distributions in relation to the tax payment and lodgement method.

Figure 7-8 shows the composition of respondents based on tax payments and lodgements.

Figure 7-8: Composition of Respondents Based on Tax Payments and Lodgements
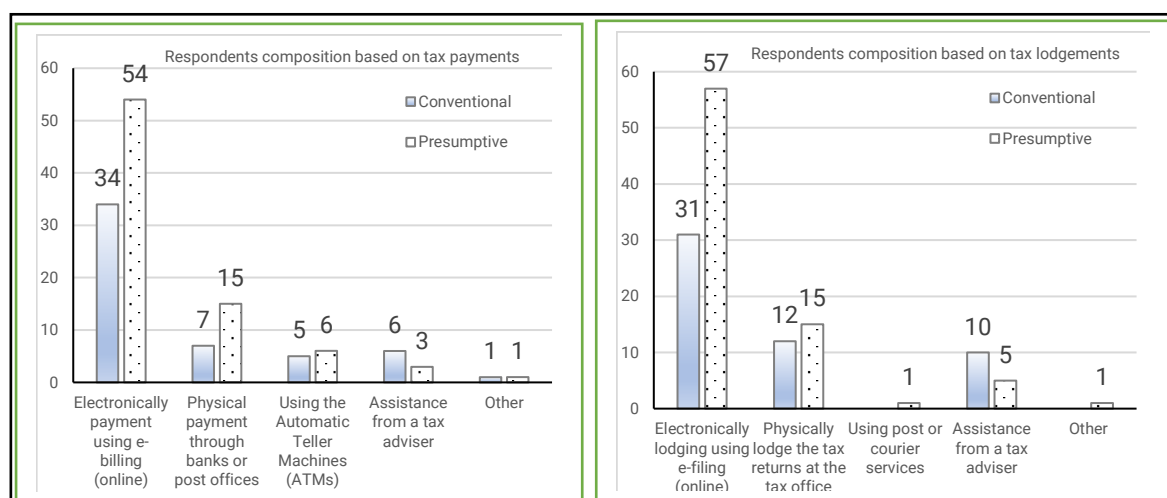
Source: modified from survey data.

Given the high percentage of respondents submitting their tax returns online (e-filing), a z-score analysis was conducted to test for the difference in the proportion of presumptive and conventional regime taxpayers who used e-filing. The results of the test (see Appendix J) confirmed no significant difference between those two groups in respect of the online tax lodgements.

The final tax compliance features that were explored in the survey related to the composition of respondents based on their use of tax advisers and their involvement in tax disputes. In respect to the engagement of tax advisers, just under one-quarter

of respondents hired tax advisers (24 per cent) whereas the remainder opted to complete their own tax affairs.

To check the difference between proportions of presumptive and conventional regime taxpayers who hired tax advisers, a z-score analysis was used (see Appendix J). The results of the test yielded a *z*-score of 3.38 and a *p*-value of 0.00 and indicate a significant difference between those two groups. It also suggested that conventional regime taxpayers have a greater tendency to seek assistance from tax advisers compared to presumptive regime taxpayers. This is logical and expected since the conventional regime taxpayers experienced more complex tax affairs than the presumptive regime taxpayers.

In relation to tax disputes, the z-score test was also run to confirm any similarity between the percentage of presumptive and conventional regime taxpayers who experienced tax disputes. The analysis resulted in a z-score of 1.01 and a p-value of 0.31 and suggested no significant difference in tax disputes between the two groups of respondents. The finding is somewhat surprising as it was expected that there would be more disputes associated with taxable income (for conventional regime taxpayers) than turnover (for presumptive regime taxpayers). Further, since the conventional regime taxpayers have more resources than the presumptive regime taxpayers, it was predicted that conventional regime taxpayers would be more likely to engage in tax disputes than presumptive regime taxpayers.

Figure 7-9 displays the composition of respondents based on the existence of tax advisers and existence of tax disputes.

Figure 7-9: Composition of Respondents Based on Tax Advisers and on Tax Disputes
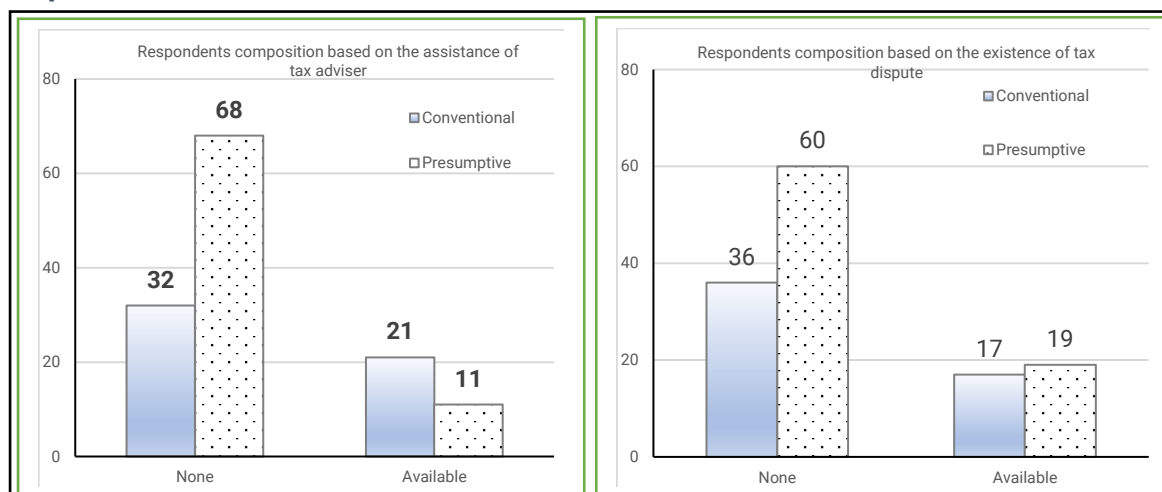
Source: Modified from survey data.

A further cross distribution analysis between perception of tax complexity and the use of tax advisers was undertaken to verify whether these variables influence the distribution of the two groups of taxpayers. The cross distributions for presumptive and conventional regime respondents are summarised in Tables 7-8 and 7-9, respectively.

Table 7-8: Distribution of Presumptive Regime Respondents by Perception of Tax Complexity and Use of Tax Advisers

Adviser / Complexity	No	Yes	Total
Not at all complicated	11	0	11
Slightly complicated	24	2	26
Moderately complicated	16	6	22
Very complicated	14	3	17

Extremely complicated	3	0	3
Grand Total	68	11	79

Source: survey data.

Table 7-9: Distribution of Conventional Regime Respondents by Perception of Tax Complexity and Use of Tax Advisers

Adviser / Complexity	No	Yes	Total
Not at all complicated	1	3	4
Slightly complicated	13	3	16
Moderately complicated	11	10	21
Very complicated	5	3	8
Extremely complicated	2	2	4
Grand Total	32	21	53

Source: survey data.

The χ^2 test reveals that perception of tax complexity and use of tax advisers are unrelated in both samples of presumptive regime respondents (χ^2 = 0.92 and 5.66) and conventional regime respondents (χ^2 = 2.28 and 3.48) with the critical χ^2 value of 9.49.

Tables 7-10 and 7-11 summarise the cross distributions of respondents by tax disputes and use of tax advisers for the presumptive and conventional regime sub-samples, respectively. It is apparent that, for both presumptive and conventional regime taxpayers, the use of tax advisers was much higher in the presence of tax disputes than otherwise. This finding is sensible and expected.

Table 7-10: Distribution of Presumptive Regime Respondents by Tax Disputes and Use of Tax Advisers

Dispute Adviser	No	Yes	Total
No	55	13	68
Yes	5	6	11
Grand Total	60	19	79

Source: survey data.

Table 7-11: Distribution of Conventional Regime Respondents by Tax Disputes and Use of Tax Advisers

Dispute Adviser	No	Yes	Total
No	23	9	32
Yes	13	8	21
Grand Total	36	17	53

Source: survey data.

Another χ^2 test (see Appendix K) was undertaken to check whether tax disputes and use of tax advisers were related for the two groups of respondents. It found the total χ^2 for presumptive and conventional regime respondents respectively are 6.51 (p-value = 0.01) and 0.58 (p-value = 0.45). Given that both attributes have a critical value of 3.84, the results indicate that tax disputes and use of tax advisers are dependent in the case of presumptive regime respondents, but independent in the case of conventional regime taxpayers. This sensibly suggests that, for presumptive regime individual SMEs, the use of tax advisers is positively associated with the existence of tax disputes. However, in the case of conventional regime taxpayers, the respondents hire tax advisers regardless the existence of tax disputes.

One cross-distribution analysis that combines factors from different sections of the survey (for example one from business characteristics and the other from tax compliance characteristics) is worthy of further exploration. While many cross-distribution analyses could be performed, one the author focused on and believed to be most meaningful is the influence of turnover and methods of tax payments on the proportion of respondents in both tax regimes. The results of χ^2 tests indicate that both presumptive regime respondents (total χ^2= 17.79 and critical χ^2= 21.03) and conventional regime taxpayers (total χ^2= 8.33 and critical χ^2= 26.30) have shared similar attributes on both characteristics. This is expected for presumptive regime respondents as logically they would apply the simplest method of tax payment regardless of their level of turnover, but also insightful given an early assumption that conventional regime taxpayers would use more complex payment methods proportionate to their business size.

Another important aspect related to tax compliance is the awareness of individual SMEs that the presumptive tax regime will cease to exist in July 2025 (Q63). Given that 37 of the respondents who applied the presumptive tax (79) were not aware of the change (roughly 47 per cent), it would appear necessary for the DGT to increase such awareness so that affected taxpayers can prepare for the change before the expiration of the presumptive regime.

Summing up, except for the prevalence of hiring tax advisers, similar distributions are apparent for respondents from both tax regimes in the tax compliance features. Typically, respondents had the following characteristics: they had been registered in

the tax administration system for between three and five years; submitted tax payments electronically; lodged tax returns electronically; and had not received an inquiry from the tax office.

Overall, the composition of respondents in the study has confirmed similar attributes despite their engagement in different tax regimes. To some extent this is not unexpected, and may in part reflect the electronic nature of the survey, which may have attracted those respondents who were more educated and more familiar with the electronic (tax) system, and hence shared similar characteristics.

7.2.3. Summary Statistics of Key Dependent Variables

Bearing in mind the construction of key dependent variables (see Table 6-2: Constructs of Explicit, Implicit and Psychological Costs of Tax Compliance), the summary statistics of these variables are summarised in Table 7-12. The data presented in Table 7.12 provide quantitative answers to primary Research Question 1. In the remainder of this section, these various answers will be discussed in turn.

Table 7-12: Summary Statistics of Implicit Costs, Explicit Costs, Gross Costs, Net Costs, and Psychological Costs of Tax Compliance

Construct	Min	Med	Max	Mean	Std
Implicit = Q29					
Presumptive	1	1	3	1.23	0.51
Conventional	1	1	5	1.47	0.93
All	1	1	5	1.33	0.72

Explicit costs = Q32 + Q34 + Q36 + Q38					
Presumptive	0	0	10	0.72	1.58
Conventional	1	2	10	2.15	1.57
All	0	1	10	1.30	1.72
Gross tax compliance costs = Q29 + Q32 + 34 + Q36 + Q38 (Monetary opportunity costs)					
Presumptive	1	1	13	1.95	1.91
Conventional	2	3	14	3.62	2.20
All	1	2	14	2.62	1.89
Net tax compliance costs = Q29 + Q32 + Q34 + Q36 + Q38 + Q56 − Q46					
Presumptive	0	1	10	2.32	2.02
Conventional	2	4	14	4.47	2.69
All	0	2	14	3.18	2.54
Psychological = sum(Q64:Q73)*					
Presumptive	10	26	43	24.47	6.47
Conventional	10	26	44	25.47	7.17
All	10	26	44	24.87	6.75

Source: Calculated from survey data. Note: * reverse-order points for Q67, Q68, Q70 and Q71.

In relation to implicit costs of tax compliance, it is pertinent to highlight the maximum and average values to compare the differences. Those two values for presumptive regime taxpayers were 3 and 1.23, respectively whereas the corresponding values for conventional regime taxpayers were 5 and 1.47, respectively. Considering that each unit response in the tax compliance costs survey represents IDR 50 million (see Appendix C), those values indicate that the maximum and average implicit costs of tax compliance by presumptive regime taxpayers were IDR 150 million (3 x IDR 50

million) and IDR 61.5 million (1.23 x IDR 50 million), respectively. Similarly, the corresponding values for conventional regime taxpayers were IDR 25 million (5 x IDR 50 million) and 73.5 million (1.47 x IDR 50 million), respectively.

For explicit costs of tax compliance, the average explicit costs of the presumptive regime taxpayers and conventional regime taxpayers were respectively 0.72 and 2.15. This means that presumptive regime taxpayers, on average, incurred explicit costs of IDR 36 million (O.72 x IDR 50 million) compared to the average explicit costs of IDR 107.5 million (2.15 x IDR 50 million) for conventional regime taxpayers.

In terms of opportunity costs of tax compliance, presumptive regime taxpayers incurred, on average, gross costs of IDR 97.5 million (1.95 x IDR 50 million) while conventional regime taxpayers spent on average IDR 181 million (3.62 x IDR 50 million) to comply with the requirements of the tax system.

A similar contrast appears in the case of net tax compliance costs, in which the average net tax compliance costs of the presumptive regime taxpayers was 2.32 whereas that of the conventional regime taxpayers was 4.47. The numbers indicate that presumptive and conventional regime taxpayers incurred net tax compliance costs, on average, respectively of IDR 116 million (2.32 x IDR 50 million) and IDR 223.5 million (4.47 x IDR 50 million).

As expected *a priori*, conventional regime taxpayers incur greater tax compliance burdens than presumptive regime taxpayers, whether the burden is measured in terms

of implicit, explicit, gross (opportunity costs), or net costs of tax compliance. However, it is also apparent that the key difference between the two types of taxpayers lies in the explicit tax compliance costs. This is completely sensible. Due to the nature of the two tax regimes under study, it was logically expected that conventional regime taxpayers need to obtain considerably more external tax advice than presumptive regime taxpayers.

Finally, the psychological costs of tax compliance of presumptive and conventional regime taxpayers exhibited a small difference in regard to the average of the psychological disturbance (24.47 compared to 25.47). These numbers indicated that, on average, the psychological costs of presumptive regime taxpayers and those of conventional regime taxpayers were roughly similar.

To further analyse the difference in the costs of tax compliance between the two taxpayer groups, the study now focuses on examining the influence of the tax regime selection on tax compliance costs of individual SMEs in Indonesia in the remainder of this chapter.

7.3. Testing for the Difference between Compliance Cost Averages

The findings set out in the previous section have established that conventional regime taxpayers incur greater tax compliance burdens than presumptive regime taxpayers. As a next natural step, it is useful to ascertain whether the differences between various tax compliance cost averages are statistically significant or not. To this end, Student's

T-test (Student, 1908) is employed, supplemented by Cohen's d-test for effect size, and power analysis. Note that since the degrees of freedom are very large (130), the test is the same as the z-test. The results of these tests (see Appendix L: INDEPENDENT SAMPLES T-TEST for complete details) are summarised below.

Table 7-13: Summary Testing for Differences between Averages

Constructs	t (p-value)	Effect size	Power
Implicit costs (H2)	1.9 (0.027*)	0.345	0.49
Explicit costs (H1)	5.1 (0.000***)	0.907	0.99
Gross tax compliance costs	4.6 (0.000***)	0.822	0.99
Net tax compliance costs	5.2 (0.000***)	0.931	0.99
Psychological (H3)	0.8 (0.202)	0.148	—

Source: Calculated from survey data; Note: * $p < .05$, ** $p < .01$, *** $p < .001$; For one-sided test, at 5 per cent level of significance the critical z-value is 1.645.

The results in Table 7-13 indicate that the differences in the mean values of all monetary costs between the two types of taxpayers are statistically significant, i.e., on average, conventional regime taxpayers incur significantly higher implicit, explicit, gross, and net costs of tax compliance than presumptive regime taxpayers. However, the difference in the mean value of psychological costs between the two taxpayer groups is not significant, i.e., the overall stress level appears to be the same for both groups. It was somewhat surprising that the simplicity provided by the presumptive tax regime did not lower the perceived stress of the taxpayers. A possible explanation is that conventional regime taxpayers may be able to shift some of their tax-related stresses to their external tax advisers.

While the outcomes of the test have confirmed a significant difference in the monetary compliance costs and insignificant difference in psychological costs as between the two groups of taxpayers, it was still not possible to conclusively verify which hypotheses hold. Thus, it was necessary to determine the partial effect of tax regime selection on tax compliance costs by holding all control variables constant. For that reason, the author performed a series of multiple regression analyses (see Appendix M: REGRESSION ANALYSIS), which allowed the control variables to vary between the two groups of taxpayers. Three multiple regression analyses with explicit, implicit, and psychological costs as dependent variables were performed. Each of these dependent variables was regressed on the tax regime choice (as the independent variable), controlling for gender, age, education, experience, and business size where the tax regime choice variable is a binary dummy (0 = presumptive tax regime; 1 = conventional tax regime).

Table 7-14 summarises the results on the estimated coefficient of the tax regime choice variable.[135] To consider the risks of multicollinearity and heteroscedasticity,[136] Variation Inflation Factor (VIF) and White's test were checked, in which the risks are not present when the VIF value is less than 5 and the p-value of White test is greater than 0.05 (C. G. Thompson, Kim, Aloe, & Becker, 2017; White, 1980).

Table 7-14: Regression Analysis Results: Tax Regime as the Dummy Variable

Dependent variable	Estimate	p-value	R^2	VIF	White's test p-value
Explicit (H1)	0.984	0.000***	0.681	< 5	0.012
Implicit (H2)	0.137	0.255	0.314	< 5	0.108

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[135] See Appendix M: REGRESSION ANALYSIS for the complete results.
[136] Multicollinearity and heteroscedasticity will be explained in Section 7.5.

| Psychological (H3) | -0.265 | 0.818 | 0.293 | < 5 | 0.293 |

Note: * p <.05, ** p <.01, *** p <.001.

Three findings were generated from the regressions. First, in the case of explicit costs, the estimated coefficient of the tax regime variable has the correct sign and is statistically significant. Thus, H1 was accepted, i.e., other things being equal, conventional regime taxpayers incur significantly higher explicit tax compliance costs than presumptive regime taxpayers. Secondly, in the case of implicit costs, the estimated coefficient of the tax regime variable has the correct sign but is statistically insignificant. H2 is therefore not accepted, i.e., other things being equal, conventional regime taxpayers incur higher implicit tax compliance costs than presumptive regime taxpayers, but the difference is not statistically significant. Finally, In the case of psychological costs, the estimated coefficient of the tax regime variable has the incorrect sign and is statistically insignificant. H3 is therefore rejected, i.e., other things being equal, conventional and presumptive regime taxpayers suffer similar psychological costs arising from tax compliance.

The results were generally intuitive in the sense that explicit costs are for the most part used to pay for seeking tax advice from external advisers, and hence the costs differ substantially between the two types of taxpayers. Conversely, implicit costs are generally related to activities relating to tax affairs such as accounting, where business owners and their unpaid helpers conduct such activities, so causing the costs to be broadly similar between the two samples. Finally, it is very likely that psychological costs are closely linked to implicit costs so that both categories of costs are similar as between the two types of taxpayers.

Another set of evaluations following the above tests is worth exploring to check the influence of an interaction between the selected tax regime with an identified cost driver on the tax compliance costs. Among possible combinations of the drivers, turnover seemed sensible to be analysed further to see the influence when it is combining with the selected tax regime. The interaction, however, only turns out to be significant on the implicit costs (est = 0.252, p-value = 0.024).[137] Hence, this analysis is not discussed further here.

To conclude, H1, H2, and H3 were tested respectively by performing Student's t-test and regression analyses. The outcomes suggested that the presumptive tax regime indeed significantly reduces explicit costs. However, tax regime choice does not appear to be a significant determinant for implicit and psychological costs.

7.4. Results of Multiple Mediators Analysis

The study turns now to an evaluation of the remaining three hypotheses: one predicting that opportunity costs have a positive correlation with psychological costs and the other two anticipating indirect effects between opportunity and psychological costs through the mediators of tax disputes and tax stressors.

To test the hypotheses, the author applied the R package lavaan (latent variable analysis) (Rosseel, 2022) to perform SEM analysis, selected the Maximum Likelihood

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[137] See Appendix M on Regression Analysis with Interaction – All taxpayers.

(ML) estimation and delta method standard errors, and applied 5,000 bootstrapping procedures to establish more robust Confidence Intervals (CIs).[138] Compared to running multiple linear regressions separately, SEM analysis involves a comprehensive process connecting predictor, mediator, and outcome simultaneously (Hayes, Montoya, & Rockwood, 2017, p. 78). As a result, it has been considered feasible in examining more complex variables plausibly, facilitating reasonable evaluation among the variables, and enabling the progress theory development of various research hypotheses (Pek & Hoyle, 2016, p. 159).

The results of the analysis are described below.

Hypothesis 4 stated that: **opportunity costs are positively correlated with the psychological costs (H4)**

The results of the analysis showed a negative and non-significant effect of opportunity costs on psychological costs ($c = -0.089$, $p = 0.668$), which suggested that there is no significant influence of opportunity costs on the psychological costs. Thus, it can be concluded that H4 was not accepted.

Hypothesis 5 stated that: **the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax stressors (H5)**

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[138] See Appendix N: LAVAAN SYNTAX for the complete analysis.

The findings showed that the influence of opportunity costs on tax stressors was significant (a_1 = 1.321, p = 0.000). The consequent effect of tax stressors on psychological costs was also confirmed significant (b_1 = 0.396, p = 0.000), and resulted in the confirmation of the indirect effect (ind_1 = 0.523, p = 0.001). Hence, it can be concluded that H5 was not rejected.

Hypothesis 6 stated that: **the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax disputes (H6)**

As in the case of tax stressors, the indirect effect of opportunity costs on psychological costs though tax disputes was also confirmed. The results showed the significant influence of opportunity costs on tax disputes (a_2 = 0.620, p = 0.000) and of tax disputes on psychological costs (b_2 = 0.532, p = 0.001). Consequently, the mediation effect was confirmed statistically significant (ind_2 = 0.330, p = 0.014). Therefore, it can be concluded that H6 was accepted.

To conclude, among the three hypotheses (H4 to H6), the hypothesis about the direct effect of opportunity costs on psychological costs (H4) was rejected whereas the other (indirect) effects are accepted. The results confirmed the full mediation effect, which happens when the direct effect between a predictor (opportunity costs) and an outcome (psychological costs) is non-significant while the mediator variables (tax disputes and tax stressors) are present (Zhao, Lynch, & Chen, 2010).

Table 7-15 highlights the results of the multiple mediator analysis.

Table 7-15: Results of the Multiple Mediators Analysis

Analysis	Results
opportunity costs are positively correlated with the psychological costs (H4)	Rejected
the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax stressors (H5)	Accepted
the effect of opportunity costs on psychological costs of individual SMEs in Indonesia is mediated by tax disputes (H6)	Accepted

Source: Calculated from survey data.

In addition to the two mediators, education has been confirmed as influencing psychological costs significantly (edu = −1.458, p = 0.002). To test the goodness-of-fit related to the proposed framework, the study then assessed some indices such as p-value, Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Root-Mean-Square Error of Approximation (RMSEA), and Standardised Root Means Square Residual (SRMR).[139] The tests resulted in a p-value of 0.692, CFI = 1.000, GFI = 0.996, NFI = 0.995, RMSEA = 0.000, SRMR = 0.020 which lead to the conclusion that the model was considered a good fit.

Figure 7-10 illustrates the results of the multi-mediators analysis. It is also suggested that the combination of explicit and implicit costs has no significant influence on the psychological costs of tax compliance. The combination, however, affects the perceived stress of taxpayers when they have disputes with the tax revenue authority

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[139] As discussed in section 4.6, p-value, CFI, GFI, NFI, RMSEA, and SRMR are among the most common goodness-of-fit indices to evaluate the fit of structural equation modelling (Schermelleh-Engel, Moosbrugger, & Müller, 2003).

and recognise the cognitive disturbance while undertaking tax administrative obligations. It also indicates that the higher the level of education achieved, the lower the level of perceived stress reported by taxpayers.

Figure 7-10: Outcomes of Multi-Mediators Analysis
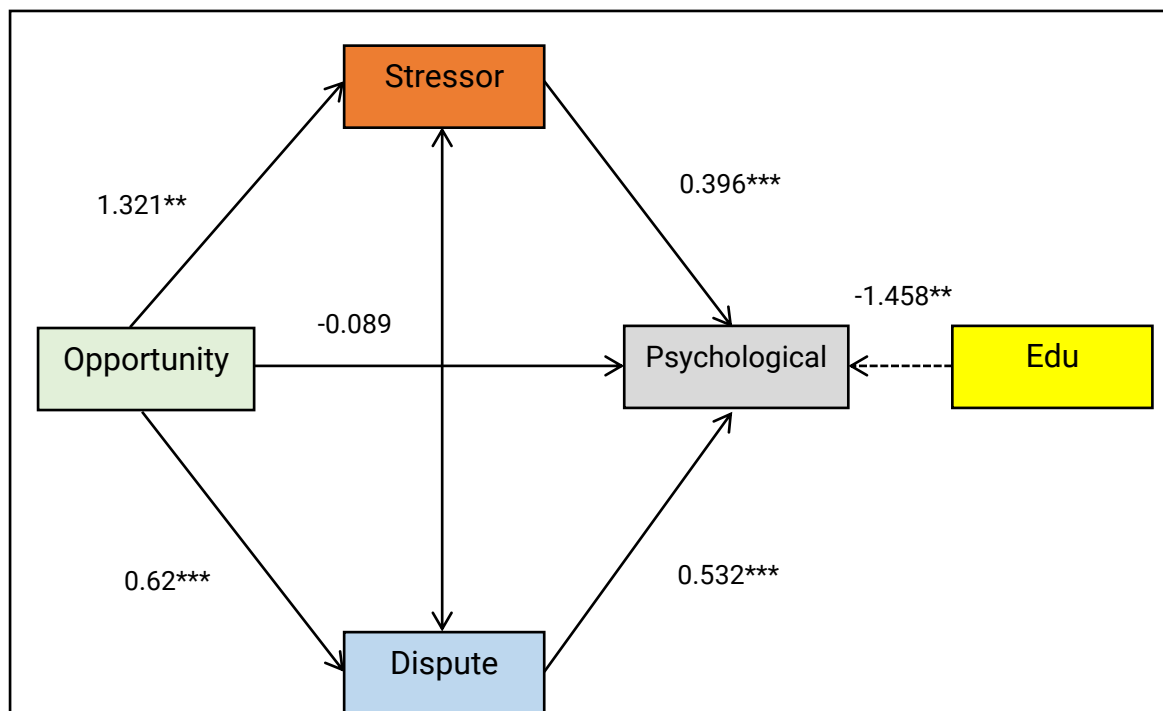
Source: Calculated from survey data.

The results provide an initial indication of the influence of tax stressors and tax disputes on the psychological burdens of tax compliance incurred by taxpayers. More particularly, it demonstrates that there is no significant direct relationship between opportunity costs and psychological costs. Instead, the former give rise to the latter through the evidence of tax disputes and the presence of tax stressors. This finding emphasises the importance of minimising tax disputes and easing the burdens on

taxpayers in relation to undertaking the administration obligations of the tax law. Hence, the DGT may use this information when considering its role in public regulation.

7.5. Answers to Secondary Research Questions

After having established the above conclusions in relation to the primary research questions, the study now moves to seek the answers to four SQs (see Section 4.4.2. Secondary Research Questions). Those research questions addressed the issue of whether four variables (gender; age; business size represented by annual turnover or the number of full-time employees; and taxpayer's business experience) may be potential drivers of the tax compliance costs of individual SMEs in Indonesia. In addition, another variable (education) was included in the analysis as a result of the group discussions.

Given the nature of the inquiries, Multivariate Analysis of Variance (MANOVA) was considered appropriate to examine the influence of those potential drivers because the method can examine any correlation between various predictors simultaneously while maintaining overall statistical power (Field, 2018). Prior to conduct of the MANOVA analysis, however, it is necessary to ensure the data satisfy certain assumptions including linearity, homoscedasticity, non-extreme collinearity, and normality. Each of the assumptions is dealt with in turn.

The first assumption is linearity. This has been argued as involving the linear shape of the association between each of the predictors and the mean value of the outcome (Field & Wilcox, 2017, pp. 19-20). One of the various possible ways to check the assumption is through the residuals vs predicted plot (Fox & Weisberg, 2018, pp. 134-144). Linearity is confirmed when such a plot displays no relationship between the predicted values and the residual values (Goss-Sampson, 2020, p. 33).

Figure 7-11 highlights an appropriate shape for the plot (red line) which confirms the linearity assumption for the collected data.

Figure 7-11: Standardised Residuals vs Predicted Values Plot
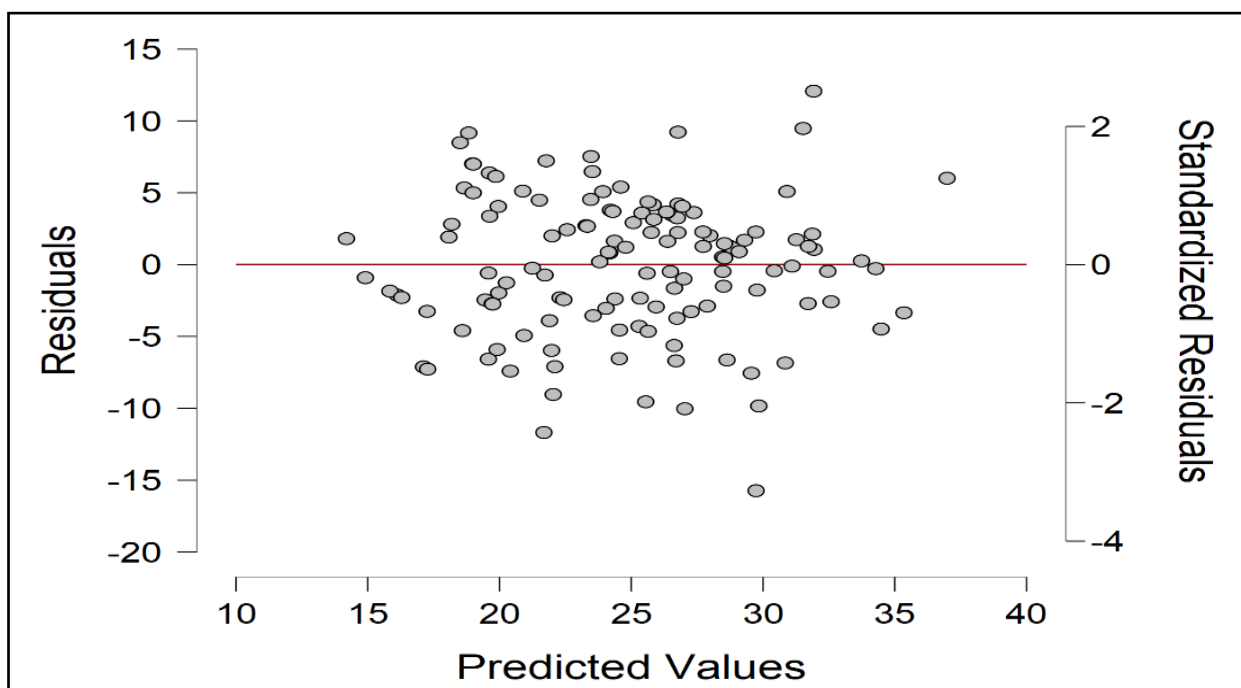
Source: survey data set.

The next assumption, homoscedasticity, has been suggested as involving the existence of similar variance of the residuals for each predictor (Field, Miles, & Field, 2012, p. 272). To detect this property, Levene (1960) suggested a test of equality of

variances. The test has been considered robust and the equal variance is confirmed when non-significant results (p > .05) are achieved (Gastwirth, Gel, & Miao, 2009; Glass, 1966).

Table 7-16 displays the results of Levene's tests which validate the assumption of homoscedasticity.

Table 7-16: Test of Equality of Variances (Levene's)

Construct	F	Df	P
Compliance_costs	5.107	1	0.025
Opportunity	1.021	1	0.314
Explicit	0.006	1	0.939
Implicit	11.018	1	0.001
Time	0.016	1	0.9
Stressor	0.492	1	0.484
Dispute	0.014	1	0.905
Psychological	0.05	1	0.824
Benefit	0.467	1	0.496

Source: survey data set.

A further assumption is non-extreme collinearity. Collinearity has been suggested as involving the condition of high dependency among predictor variables (Dormann et al., 2013, p. 27). A common approach to detect the non-independency feature is by observing the correlation coefficients among the predictors (Shrestha, 2020, p. 39).

Table 7-17 displays the Pearson's (1931) correlation analyses among the potential variables, in which all are less than 0.8 indicating the absence of extreme multicollinearity (Benesty, Chen, Huang, & Cohen, 2009).[140]

Table 7-17: Pearson's Correlation Coefficients among the Potential Predictors

Indicator	Gender	Regime	Audited	Adviser	Age	Edu	Turnover	Region	Emp	Exp	Cmp
Gender	—										
Regime	0.115	—									
Audited	0.069	0.114	—								
Adviser	-0.006	0.294***	0.216*	—							
Age	-0.077	0.214*	-0.177*	0.116	—						
Edu	0.01	0.068	-0.01	-0.077	-0.124	—					
Turnover	-0.045	0.389***	0.099	0.346***	0.166	0.004	—				
Region	0.272**	0.05	-0.018	-0.085	-0.017	0.005	-0.104	—			
Employee	0.01	0.238**	0.147	0.33***	-0.004	0.045	0.629***	-0.123	—		
Experience	-0.152	0.134	-0.122	0.129	0.318***	0.007	0.137	-0.1	0.163	—	
Complexity	0.008	0.077	0.201*	0.117	-0.019	-0.036	0.11	-0.184*	0.064	0.076	—

Source: survey data set. Note: * p < .05, ** p < .01, *** p < .001

The final assumption is the normal distribution of the residual error terms. Due to the importance of the assumption, the research explored this issue using three different approaches: by graphics, by numbers, and by statistics (Field et al., 2012, pp. 169-185). In the first approach, normality can be detected visually by observing Quantile-Quantile plots (Q-Q plots) (Augustin, Sauleau, & Wood, 2012).[141] While the probability plot of residuals appeared to follow a straight line in this case (see Appendix Q: Q-Q PLOTS), the outcome was not considered sufficient alone as some scholars (Razali & Wah,

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[140] See Appendix O: PEARSON'S CORRELATIONS for more complete evaluation.
[141] A simpler visual approach to detect normality is by plotting the data into histograms (see Appendix P: HISTOGRAM). Normality is then confirmed when the graphs are roughly bell-shaped and approximately proportionate around the means (Mittal & Abedin, 2014, p. 30).

2011, p. 21; Yap & Sim, 2011, p. 2141) have argued the insufficiency of such plots to confirm normality.

To confirm, the author used the second approach by examining the z-scores of skewness and kurtosis.[142] The analysis (see Appendix I: DESCRIPTIVE STATISTICS) resulted in significant results and hence suggested a deviation from normality. Following the third approach of conducting a Shapiro-Wilk statistical test (Shapiro & Wilk, 1965), which resulted in a value of 0.828 ($p < .001$), a non-normal distribution of data was conclusively confirmed (see Appendix I: DESCRIPTIVE STATISTICS).

Summing up, excluding normality, the collected data satisfied the other three of the four assumptions (linearity, homoscedasticity, non-extreme collinearity). Hence, the author performed alternative analyses that did not require normality, including Spearman's (1906) rank correlation, Kruskal-Wallis' (1952) analysis, and multiple linear regression (Legendre, 1805).

The first analysis, Spearman rank correlation was performed to check the strength of a correlation between two variables by comparing their ranks in the datasets (Gibbons & Chakraborti, 2014, p. 422). Similar to the Pearson's correlation analysis, an absolute value of 1 means strong correlation between the two variables whereas 0 means no correlation. The correlations of each of the predicted factors, namely gender, age, education, annual turnover, total employees, and tax experience, are displayed in

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[142] To confirm normal distribution in small samples, the absolute z-values of skewness and kurtosis are greater or less than 1.96 (Ghasemi & Zahediasl, 2012, p. 489), thus the closer the values to zero the more likely the data are normally distributed (Field et al., 2012, p. 176).

Appendix R: SPEARMAN CORRELATION ANALYSIS and summarised respectively in Tables 7-18 to 7-23.

The effect of gender on tax compliance costs (SQ1)

Secondary research questions SQ1a to SQ1c involved the estimation of the influence of gender upon, respectively, explicit costs, implicit costs, and psychological costs.

The results of the analysis showed the values of the correlation coefficients between gender and various costs (implicit, explicit, opportunity, compliance, and psychological costs) among three identified groups: presumptive, conventional, and combination of presumptive and conventional, regime taxpayers. Given the values are closer to zero than 1 in those three groups, it is concluded that gender has no correlation with those costs. The results are in a sense surprising considering the author assumed that women, given their cautious and conservative tendency, would be more tax compliant and hence incur higher tax compliance costs than men.

Table 7-18 displays the data as to non-existence of correlations between gender and tax compliance costs.

Table 7-18: Spearman Correlation of Gender and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	0.17	-0.13	-0.04	-0.08	0.15

p-value	0.14	0.26	0.70	0.49	0.19
Significant	NO	NO	NO	NO	NO
Conventional					
Correlation	-0.24	0.07	-0.02	-0.06	0.04
p-value	0.08	0.64	0.88	0.66	0.76
Significant	NO	NO	NO	NO	NO
All taxpayers					
Correlation	-0.01	0.02	0.04	-0.00	0.11
p-value	0.94	0.78	0.65	1.00	0.22
Significant	NO	NO	NO	NO	NO

Source: Calculated from survey data.

The effect of age on tax compliance costs (SQ2)

The study considered five age groups: those between 18 and 25 years; between 26 and 35 years; between 36 and 45 years; between 46 and 55 years; and 56 or above. Respondents were requested to select the age group to which they belonged. Secondary research questions SQ2a to SQ2e sought to analyse the influence of age upon, respectively, explicit costs, implicit costs, and psychological costs.

Similar to the previous analysis, the calculations resulted in non-statistically significant correlations (p-values > 0.05) between age group and the various costs. The results are somewhat unexpected given that Lopes & Martins (2013, p. 57) suggested that older taxpayers experience greater psychological costs of tax compliance than younger taxpayers.

Table 7-19 displays the correlation between age and tax compliance costs.

Table 7-19: Spearman Correlation of Age and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	-0.15	-0.11	-0.11	-0.11	0.02
p-value	0.18	0.33	0.32	0.33	0.89
Significant	NO	NO	NO	NO	NO
Conventional					
Correlation	0.07	-0.16	-0.10	-0.12	-0.02
p-value	0.61	0.26	0.47	0.38	0.88
Significant	NO	NO	NO	NO	NO
All taxpayers					
Correlation	-0.02	0.03	0.03	-0.01	-0.01
p-value	0.80	0.75	0.76	0.92	0.90
Significant	NO	NO	NO	NO	NO

Source: Calculated from survey data.

An expected result appeared in the analysis of correlation between education and various costs, in which education seemed to be more influential on psychological costs for conventional regime taxpayers (correlation value of −0.4) than for presumptive regime taxpayers (correlation value of −0.17). The results suggested that the higher level of education achieved, the lower the psychological costs perceived by the taxpayers and confirmed the results of multiple mediators analysis (see Figure 7-10: Outcomes of Multi-Mediators Analysis) involving the education variable.

Table 7-20 shows the influence of education on the compliance costs, especially the psychological costs.

Table 7-20: Spearman Correlation of Education and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	-0.26	-0.18	-0.25	-0.15	-0.17
p-value	0.02	0.12	0.02	0.18	0.13
Significant	YES	NO	YES	NO	NO
Conventional					
Correlation	0.00	-0.08	-0.03	-0.18	-0.40
p-value	0.98	0.56	0.84	0.19	0.00
Significant	NO	NO	NO	NO	YES
All taxpayers					
Correlation	-0.13	-0.07	-0.09	-0.09	-0.25
p-value	0.14	0.45	0.29	0.31	0.00
Significant	NO	NO	NO	NO	YES

Source: Calculated from survey data.

The effect of annual turnover on tax compliance costs (SQ3)

The next analysis considered the influence of business size on compliance costs in terms of annual turnover and total employees.

Secondary research questions SQ3a to SQ3c involved the testing of the influence of annual turnover upon explicit costs, implicit costs, and psychological costs, respectively.

A difference again appeared in the correlation between the relevant costs and annual turnover of presumptive regime taxpayers and that of conventional regime taxpayers. Excluding the psychological costs, the other costs have confirmed significant correlations with annual turnover (p-values < 0.05) for conventional regime and all sample taxpayers, but not for presumptive regime taxpayers (p-values > 0.05). The results are intuitive and consistent with the previous tax compliance costs studies (see Eichfelder & Schorn (2012) and Vaillancourt et al (2013)).

Table 7-21 shows the significant correlations between annual turnover and implicit, explicit, opportunity, and compliance costs for conventional regime and all sample taxpayers, but non-significant correlations as confirmed by the Spearman test for presumptive regime taxpayers.

Table 7-21: Spearman Correlation of Annual Turnover and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	0.01	0.19	0.13	0.19	0.04
p-value	0.95	0.09	0.24	0.10	0.75
Significant	NO	NO	NO	NO	NO
Conventional					
Correlation	0.42	0.33	0.40	0.41	0.13
p-value	0.00	0.01	0.00	0.00	0.34
Significant	YES	YES	YES	YES	NO
All taxpayers					
Correlation	0.21	0.35	0.34	0.38	0.09
p-value	0.01	0.00	0.00	0.00	0.28

Significant	YES	YES	YES	YES	NO

Source: Calculated from survey data.

The effect of the number of employees on tax compliance costs (SQ3)

Another element of the business characteristics examined related to the number of full-time employees, with respondents being asked to indicate the number of employees in 2019, based on the five categories of: none; 1-2 persons; 3-5 persons; 6-10 persons; and over 10 persons.

Corresponding closely to the results of the previous analysis for turnover, the factor was found to have no significant correlations with various types of tax compliance costs for presumptive regime taxpayers, but significant correlations with opportunity and compliance costs for conventional regime taxpayers. For all sample taxpayers, except for psychological costs, the other costs also have confirmed significant correlations with total employees.

Table 7-22 summarises the coefficient correlations between total employees and implicit, explicit, opportunity, compliance, and psychological costs.

Table 7-22: Spearman Correlation of Total Employees and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	0.07	0.22	0.18	0.14	0.12
p-value	0.51	0.06	0.11	0.21	0.30

Significant	NO	NO	NO	NO	NO
Conventional					
Correlation	0.27	0.24	0.27	0.34	0.06
p-value	0.05	0.09	0.05	0.01	0.65
Significant	NO	NO	YES	YES	NO
All taxpayers					
Correlation	0.18	0.31	0.30	0.32	0.11
p-value	0.04	0.00	0.00	0.00	0.21
Significant	YES	YES	YES	YES	NO

Source: Calculated from survey data.

The effect of taxpayers' experience on tax compliance costs (SQ4)

Respondents were asked to indicate their level of tax experience by selecting the duration they have participated in the tax administration system out of five categories: none; 1-2 years; 3-5 years; 6-10 years; and over 10 years. Secondary research questions SQ4a to SQ4c required the analysis of the influence of taxpayers' experience upon, respectively, explicit costs, implicit costs, and psychological costs.

The results showed all p-values > 0.05, which indicated no significant effect of taxpayers' experience on tax compliance costs. Hence, it can be concluded that there were no statistically significant results between taxpayers' experience and those costs. Given the idea that more experienced taxpayers would incur lower compliance costs than less experience ones, the results are somewhat unexpected.

Table 7-23 reviews the correlation coefficient between tax experience and tax compliance costs.

Table 7-23: Spearman Correlation of Tax Experience and Tax Compliance Costs

	Implicit costs	Explicit costs	Opportunity costs	Compliance costs	Psychological costs
Presumptive					
Correlation	0.02	-0.03	-0.01	-0.03	0.02
p-value	0.88	0.76	0.94	0.82	0.83
Significant	NO	NO	NO	NO	NO
Conventional					
Correlation	-0.18	-0.10	-0.14	0.00	-0.13
p-value	0.19	0.46	0.31	0.99	0.35
Significant	NO	NO	NO	NO	NO
All taxpayers					
Correlation	-0.05	0.03	0.03	0.04	-0.02
p-value	0.61	0.75	0.71	0.63	0.85
Significant	NO	NO	NO	NO	NO

Source: Calculated from survey data.

Summing up, for presumptive regime taxpayers, only education has a statistically significant correlation with implicit and opportunity costs. For conventional regime taxpayers, education has a significantly influence on the psychological costs and turnover has a significant effect on non-psychological costs, and total employees were confirmed as having a significant influence on the opportunity and compliance costs.

Almost matching the results of the correlation analysis for conventional regime taxpayers, education and business size (annual turnover and the number of employees) generated statistically significant results for the all taxpayers sample. While the former has a statistically significant correlation with psychological costs, the latter has confirmed significant correlations with non-psychological costs.

Tables 7-24, 7-25, and 7-26 respectively summarise the Spearman correlations for presumptive regime, conventional regime, and all taxpayers.

Table 7-24: Summary of the Spearman Correlations for Presumptive Regime Taxpayers

Outcomes	Predictors					
	Gender	Age	Edu	Turnover	Empl	Tax Exp
Implicit	–	–	Y_a	–	–	–
Explicit	–	–	–	–	–	–
Opportunity	–	–	Y_a	–	–	–
Compliance	–	–	–	–	–	–
Psychological	–	–	–	–	–	–

Source: calculated from survey data;

– : statistically significant result does not exist;

Y_a : statistically significant result found: the higher the level of education, the lower the costs.

Table 7-25: Summary of the Spearman Correlations for Conventional Regime Taxpayers

Outcomes	Predictors					
	Gender	Age	Edu	Turnover	Empl	Tax Exp
Implicit	–	–	–	Y_b	–	–
Explicit	–	–	–	Y_b	–	–
Opportunity	–	–	–	Y_b	Y_c	–
Compliance	–	–	–	Y_b	Y_c	–

| Psychological | – | – | Y_a | – | – | – |

Source: calculated from survey data;

– : statistically significant result does not exist;

Y_a : statistically significant result found: the higher the level of education, the lower the costs.

Y_b : statistically significant result found: the greater the annual turnover, the higher the costs.

Y_c : statistically significant result found: the greater the number of employees, the higher the costs.

Table 7-26: Summary of the Spearman Correlations for All Taxpayers

Outcomes	Predictors					
	Gender	Age	Edu	Turnover	Empl	Tax Exp
Implicit	–	–	–	Y_b	Y_c	–
Explicit	–	–	–	Y_b	Y_c	–
Opportunity	–	–	–	Y_b	Y_c	–
Compliance	–	–	–	Y_b	Y_c	–
Psychological	–	–	Y_a	–	–	–

Source: calculated from survey data;

– : statistically significant result does not exist;

Y_a : statistically significant result found: the higher the level of education, the lower the costs.

Y_b : statistically significant result found: the greater the annual turnover, the higher the costs.

Y_c : statistically significant result found: the greater the number of employees, the higher the costs.

The results in Table 7-26 are similar to the findings of previous tax compliance costs studies (see for example: DeLuca et al (2007); Eichfelder & Schorn (2012); and Vaillancourt et al (2013)), that suggested business size is positively associated with the tax compliance costs. An unexpected result, however, appeared in the analysis of the psychological costs. It can be seen that none of the predictors was found to have a significant influence on the psychological costs, despite the findings of some studies (Sandford et al. (1989); and Lopes & Martins (2013)) which have indicated that age is an important factor in such costs.

While the Spearman tests provided the initial suggestion of the correlations between the identified factors and a variety of tax compliance costs, the tests, however, were not sufficient to confirm that those factors were driving the costs of tax compliance. Hence, the author then performed a Kruskal-Wallis analysis, which is helpful to check whether the median value of such costs is affected by those potential drivers.

Simultaneously, a further power analysis was included to check the robustness of the results of the Kruskal-Wallis analysis. To run the analysis, the effect size of each significant predictor was initially identified. According to Tomczak & Tomczak (2014, p. 24), an effect size depends on the Kruskal-Wallis test statistic and the number of observations, varying from 0 (no effects) to 1 (strong effects). Following the effect size, the power analysis was calculated by using G*Power software (Faul et al., 2007).[143]

For presumptive regime taxpayers, the results showed that both turnover and employees have a significant influence on explicit costs. However, the effect sizes are less than 0.5, and hence are considered small effects and so was the generated power. Table 7-27 summarises the calculations of the effect size and power analysis for presumptive regime taxpayers.

Table 7-27: Effect Size and Power Analysis Results – Presumptive Regime Taxpayers

Factor	χ2	Df	p	ε²	Power
Gender --> Implicit	2.14	1	0.14	0.03	

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[143] See Appendix S: KRUSKAL-WALLIS' ANALYSIS for the summary of the calculations.

Gender --> Explicit	1.30	1	0.25	0.02	
Gender --> Opportunity	0.15	1	0.70	0.00	
Gender --> Compliance	0.49	1	0.48	0.01	
Gender --> Psychological	1.73	1	0.19	0.02	
Age --> Implicit	2.39	4	0.66	0.03	
Age --> Explicit	1.87	4	0.76	0.02	
Age --> Opportunity	1.57	4	0.81	0.02	
Age --> Compliance	1.64	4	0.80	0.02	
Age --> Psychological	4.92	4	0.30	0.02	
Turnover --> Implicit	2.43	3	0.49	0.03	
Turnover --> Explicit	7.90	3	0.05*	0.10	0.10
Turnover --> Opportunity	5.31	3	0.15	0.07	
Turnover --> Compliance	4.85	3	0.18	0.06	
Turnover --> Psychological	2.55	3	0.47	0.03	
Employees --> Implicit	2.50	4	0.64	0.03	
Employees --> Explicit	11.33	4	0.02*	0.15	0.16
Employees --> Opportunity	7.92	4	0.09	0.10	
Employees --> Compliance	6.88	4	0.14	0.09	
Employees --> Psychological	3.21	4	0.52	0.04	
Experience --> Implicit	3.77	4	0.44	0.05	
Experience --> Explicit	4.16	4	0.39	0.05	
Experience --> Opportunity	3.51	4	0.48	0.05	
Experience --> Compliance	3.68	4	0.45	0.05	
Experience --> Psychological	0.87	4	0.93	0.01	
Education --> Implicit	7.47	3	0.06	0.10	
Education --> Explicit	4.48	3	0.21	0.06	
Education --> Opportunity	6.09	3	0.11	0.08	
Education --> Compliance	3.25	3	0.35	0.04	
Education --> Psychological	3.39	3	0.34	0.04	

Source: calculated from survey data; * p <.05, ** p <.01, *** p <.001.

For conventional regime taxpayers, the analysis showed that, apart from psychological costs, all other costs have been significantly influenced by turnover. Further analysis also confirmed the significant effect of education on opportunity and psychological costs whereas age has a significant correlation on implicit costs.

Regarding the effect size and power, apart from the significant influence of turnover on implicit costs which reached the effect size and power respectively of 0.35 and 0.51, the other significant factors have confirmed limited effect size (between 0.16 and 0.28) and power analysis (between 0.14 and 0.33). Table 7-28 summarises the Kruskal-Wallis analysis for conventional regime taxpayers.

Table 7-28: Effect Size and Power Analysis Results – Conventional Regime Taxpayers

Factor	χ2	Df	p	ε²	Power
Gender --> Implicit	3.06	1	0.08	0.06	
Gender --> Explicit	0.23	1	0.63	0.00	
Gender --> Opportunity	0.03	1	0.87	0.00	
Gender --> Compliance	0.20	1	0.65	0.00	
Gender --> Psychological	0.09	1	0.76	0.00	
Age --> Implicit	12.25	4	0.02*	0.24	0.25
Age --> Explicit	3.52	4	0.48	0.07	
Age --> Opportunity	6.60	4	0.16	0.13	
Age --> Compliance	3.22	4	0.52	0.06	
Age --> Psychological	6.61	4	0.16	0.00	
Turnover --> Implicit	18.13	4	0.00**	0.35	0.51
Turnover --> Explicit	11.73	4	0.02*	0.23	0.23
Turnover --> Opportunity	14.36	4	0.01*	0.28	0.33
Turnover --> Compliance	10.84	4	0.03*	0.21	0.20
Turnover --> Psychological	4.96	4	0.29	0.10	

Employees --> Implicit	5.37	4	0.25	0.10	
Employees --> Explicit	8.15	4	0.09	0.16	
Employees --> Opportunity	8.12	4	0.09	0.16	
Employees --> Compliance	6.99	4	0.14	0.13	
Employees --> Psychological	2.90	4	0.57	0.06	
Experience --> Implicit	3.49	4	0.48	0.07	
Experience --> Explicit	3.77	4	0.44	0.07	
Experience --> Opportunity	3.44	4	0.49	0.07	
Experience --> Compliance	2.11	4	0.72	0.04	
Experience --> Psychological	5.55	4	0.24	0.11	
Education --> Implicit	6.85	3	0.08	0.13	
Education --> Explicit	7.74	3	0.05	0.15	
Education --> Opportunity	8.25	3	0.04*	0.16	0.14
Education --> Compliance	4.43	3	0.22	0.09	
Education --> Psychological	10.32	3	0.02*	0.20	0.20

Source: calculated from survey data; * p <.05, ** p <.01, *** p <.001.

Similar to the analysis of conventional regime taxpayers, the analysis of all taxpayers showed that turnover has a significant influence on non-psychological costs. Another evaluation related to the total employees revealed that, except for the non-significant effect on implicit costs, significant correlations appeared in the analysis of the number of employees on the non-psychological costs. It was also disclosed that psychological costs were significantly influenced by the level of taxpayers' education only.

Further analysis showed that the effect size of turnover on the various non-psychological costs reached 0.2 and achieved a maximum power of 0.42 whereas a similar correlation analysis of number of employees found an effect size of less than

0.15 and a maximum power of 0.21. It was also noted that the effect of education on psychological costs has a limited effect size and power, at respectively 0.6 and 0.8.

Table 7-29 reports the summary of Kruskal-Wallis analysis for all taxpayers.

Table 7-29: Effect Size and Power Analysis Results – All Taxpayers

Factor	χ2	Df	p	ε²	Power
Gender --> Implicit	0.01	1	0.94	0.00	
Gender --> Explicit	0.08	1	0.78	0.00	
Gender --> Opportunity	0.21	1	0.65	0.00	
Gender --> Compliance	0.00	1	1.00	0.00	
Gender --> Psychological	1.53	1	0.22	0.01	
Age --> Implicit	8.86	4	0.06	0.07	
Age --> Explicit	1.77	4	0.78	0.01	
Age --> Opportunity	2.36	4	0.67	0.02	
Age --> Compliance	0.69	4	0.95	0.01	
Age --> Psychological	6.06	4	0.19	0.05	
Turnover --> Implicit	24.70	4	0.00***	0.19	0.38
Turnover --> Explicit	24.32	4	0.00***	0.19	0.38
Turnover --> Opportunity	25.35	4	0.00***	0.19	0.38
Turnover --> Compliance	25.53	4	0.00***	0.20	0.42
Turnover --> Psychological	4.57	4	0.33	0.03	
Employees --> Implicit	5.42	4	0.25	0.04	
Employees --> Explicit	17.52	4	0.00***	0.13	0.19
Employees --> Opportunity	16.22	4	0.00***	0.12	0.16
Employees --> Compliance	18.15	4	0.00***	0.14	0.21
Employees --> Psychological	1.73	4	0.79	0.01	
Experience --> Implicit	4.31	4	0.37	0.03	
Experience --> Explicit	4.21	4	0.38	0.03	
Experience --> Opportunity	4.93	4	0.29	0.04	

Experience --> Compliance	5.78	4	0.22	0.04	
Experience --> Psychological	3.07	4	0.55	0.02	
Education --> Implicit	4.35	3	0.23	0.03	
Education --> Explicit	3.82	3	0.28	0.03	
Education --> Opportunity	4.51	3	0.21	0.03	
Education --> Compliance	3.36	3	0.34	0.03	
Education --> Psychological	7.93	3	0.05*	0.06	0.08

Source: calculated from survey data; * p <.05, ** p <.01, *** p <.001.

After confirming the Kruskal-Wallis results, the author performed multiple linear regression analysis to examine the effect of all demographic variables on one dependent variable. The results of the analysis are useful to check the statistical significance or otherwise of the various coefficients in the estimated equations, and hence can be applied to answer the secondary research questions.

Prior to the regression, it is necessary to check the summary statistics of the predictors, namely gender, age, education, turnover, and tax experience. The summary statistics of those variables for presumptive, conventional, and total samples is highlighted in Table 7-30.

Table 7-30: Summary Statistics of Gender, Age, Education, Turnover, and Tax Experience

Descriptive Statistics	Gender			Age			Edu			Turnover			Experience		
	Pre	Con	All	Pre	Con	All	Pre	Con	All	Pre	Con	All	Pre	Con	All
Valid	79	53	132	79	53	132	79	53	132	79	53	132	79	53	132
Mean	0.30	0.42	0.35	3.80	4.25	3.98	3.53	3.64	3.58	1.58	2.60	1.99	3.09	3.40	3.21
Std. Dev.	0.46	0.50	0.48	1.01	1.02	1.03	0.80	0.79	0.79	0.83	1.60	1.29	1.17	1.06	1.13
Minimum	0	0	0	2	2	2	1	1	1	1	1	1	1	1	1
Max	1	1	1	6	6	6	4	4	4	4	5	5	5	5	5

The regression analyses were conducted by running R package lavaan. Tables 7-31, 7-32, and 7-33 respectively summarise the results of multiple linear regression analysis of presumptive regime taxpayers, conventional regime taxpayers, and all taxpayers.

Table 7-31: Results of Multiple Linear Regression of Presumptive Regime Taxpayers

Costs / Predictor	Im	Ex	Opp	TCC	Psy
Intercept	1.891***	3.13**	5.02***	4.346**	26.068***
Gender	0.138	-0.374	-0.236	-0.434	1.479
Age	-0.114	-0.398*	-0.512*	-0.494*	-0.309
Edu	-0.158*	-0.49*	-0.647**	-0.411	-1.438
Turnover	0.021	0.298	0.319	0.682*	1.105
Employees	0.042	0.283	0.325	0.336	0.7
Experience	0.048	-0.077	-0.029	-0.162	0.223
R square	0.127	0.194	0.185	0.213	0.082
sample size	79	79	79	79	79
VIF	< 5	< 5	< 5	< 5	< 5
p-value White test	0.93	0.13	0.14	0.05	0.19

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. Im = Implicit costs; Ex = Explicit costs; Opp = Opportunity costs; TCC = Tax compliance costs; Psy = Psychological costs.

Table 7-32: Results of Multiple Linear Regression of Conventional Regime Taxpayers

Costs / Predictor	Im	Ex	Opp	TCC	Psy
Intercept	0.838	3.51*	4.348	6.482*	40.672***
Gender	-0.68**	-0.511	-1.191*	-1.3	1.984
Age	-0.095	-0.417	-0.512	-0.62	-0.773
Edu	0.267	0.052	0.319	-0.008	-3.297**
Turnover	0.267*	0.423	0.69*	0.576	1.145

	Im	Ex	Opp	TCC	Psy
Employees	-0.001	-0.154	-0.155	0.086	-1.011
Experience	-0.101	-0.055	-0.156	-0.171	-0.163
R square	0.342	0.185	0.285	0.233	0.15
sample size	53	53	53	53	53
VIF	< 5	< 5	< 5	< 5	< 5
p-value White test	0.15	0.30	0.25	0.74	0.05

Note: * p <.05, ** p <.01, *** p <.001. Im = Implicit costs; Ex = Explicit costs; Opp = Opportunity costs; TCC = Tax compliance costs; Psy = Psychological costs.

Table 7-33: Results of Multiple Linear Regression of All Sample Taxpayers

Costs / Predictor	Im	Ex	Opp	TCC	Psy
Intercept	1.396***	2.051*	3.448**	3.469**	30.003***
Gender	-0.093	-0.165	-0.258	-0.45	1.494
Age	-0.095	-0.294*	-0.389*	-0.364	-0.267
Edu	-0.041	-0.2	-0.241	-0.173	-1.967**
Turnover	0.176**	0.412**	0.588**	0.773***	0.628
Employees	0.045	0.171	0.216	0.255	0.312
Experience	0.003	-0.033	-0.03	-0.096	0.104
R square	0.149	0.179	0.209	0.244	0.087
sample size	132	132	132	132	132
VIF	< 5	< 5	< 5	< 5	< 5
p-value White test	0.03	0.02	0.01	0.54	0.69

Note: * p <.05, ** p <.01, *** p <.001. Im = Implicit costs; Ex = Explicit costs; Opp = Opportunity costs; TCC = Tax compliance costs; Psy = Psychological costs.

Combining the results from the previous three (Spearman, Kruskal-Wallis, and multiple regression) analyses, it can be concluded that turnover has a significant influence on tax compliance costs for presumptive regime, conventional regime, and all taxpayers.

In addition, education has a significant influence on the psychological costs for all taxpayers.

7.6. Conclusion

This chapter has detailed the extensive procedures conducted by the author in order to analyse the survey. It discussed six topics: data checking; descriptive analysis; construction of key dependent variables; findings of an independent samples t-test; results of multiple mediators analysis; and answers to secondary research questions.

Data checking was undertaken to ensure that the study generated robust estimations. This process comprised three different tests (respectively non-response bias, parametric assumptions, and internal reliability tests) and a response rate report. It was concluded that the study was free from non-response bias. It was also necessary to apply non-parametric techniques (due to outliers) and the study secured an acceptable Cronbach's Alpha for each of the measured constructs of ± 0.7.

Section 7.2.2 next narrated the descriptive analysis for the respondents. The comparison involving z-score analysis and χ^2 test. The comparison analyses involved three characteristics grouped by reference to demographic; business; and tax compliance factors.

Section 7.2.3 then defined and identified the key dependent variables for further analysis, including implicit costs, explicit costs, monetary opportunity costs, net tax compliance costs, and psychological costs.

Section 7.3 then examined whether the application of the presumptive tax regime lowered the tax compliance costs in the terms of explicit, implicit, and psychological costs. The Student's t-test results suggested that respondents who used the conventional tax regime paid more explicit money and spent more time than those who applied the presumptive tax regime. By contrast, perceived levels of stress reported by respondents who used the presumptive tax regime were similar to those who used the conventional tax regime. However, further regression analyses then confirmed that only the explicit costs differed considerably between the two types of taxpayers whereas implicit and psychological costs were similar between the two samples.

Section 7.4 next evaluated the hypothesis of the multiple mediators framework. SEM analysis resulted in findings that both tax disputes and tax stressors acted as mediators of the influence of opportunity costs on psychological costs. It also suggested that the higher the level of education achieved by taxpayers, the lower the level of stress perceived by taxpayers.

Section 7.5 described a series of analyses including Spearman correlation tests, Kruskal-Wallis analysis and multiple linear regression. The examinations indicated that, among four hypothesised tax compliance costs drivers, only turnover had a

significant influence on the tax compliance costs, i.e., the greater the annual turnover, the higher the tax compliance costs incurred.

To conclude the chapter, it is necessary to also consider the findings in the context of the three broad objectives of the study identified in Chapter 1, namely comparing the costs of individual SMEs who use the presumptive tax regime with those of individual SMEs who use the conventional tax regime, estimating the magnitude of the costs, and identifying the drivers of tax compliance costs of individual SMEs in Indonesia.

In terms of the first of these objectives, to compare the average tax compliance costs incurred by those taxpayers in the presumptive tax regime with those in the conventional regime. To undertake this comparison the study used the accumulation of the average value of each burden reported by respondents. By using simple spreadsheet software (Dalgleish, 2006), the results indicated that a total tax compliance cost of IDR 14,325 million has been incurred by 132 individual SMEs in Indonesia. To obtain the average of the costs, the author considered the composition of respondents in each tax regime. It was revealed that, on average, an individual SME who applied the presumptive tax regime spent IDR 77.5 million whereas a taxpayer who used the conventional tax regime disbursed IDR 154.7 million.

Table 7-34 shows the calculation of the average costs for the respondents in each tax regime.

Table 7-34: Computation of an Average Tax Compliance Costs

Tax Regime	Total Compliance Costs (IDR)	Respondents	Average Costs (IDR)
(a)	(b)	(c)	(d) = (b)/(c)
Presumptive	6,125,000,000	79	77,531,646
Conventional	8,200,000,000	53	154,716,981
Total	14,325,000,000	132	108,522,727

Source: Calculated from survey data.

In summary, therefore, those SMEs in the conventional tax regime incurred tax compliance costs that were roughly double the costs incurred by those in the presumptive regime.

The second objective identified in Chapter 1 required the study to estimate the magnitude of tax compliance costs of individual SMEs in Indonesia in 2019, the author multiplied the average tax compliance costs by the estimated number of taxpayers who used the presumptive and conventional tax regimes, as shown in Table 7-35.

Table 7-35: Total Tax Compliance Costs of Individual SMEs in 2019

Tax Regime	Average Compliance Costs (IDR)	Estimated number of Taxpayers[144]	Total Costs (IDR)
(a)	(b)	(c)	(d) = (b)*(c)
Presumptive	77,531,646	1,869,868	144,973,943,842,728
Conventional	154,716,981	58,825	9,101,226,407,325
Total			154,075,170,250,053

Source: Calculated from survey data.

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[144] See Table 6-1 for the estimated number of individual SME taxpayers in each tax regime.

In total, therefore, Indonesian tax compliance costs are estimated to be IDR 154 trillion (± AUD 14.5 billion).[145] Relative to GDP (according to the Indonesian Statistics (2020), the estimated total GDP of Indonesia in 2019 was IDR 15,833.9 trillion), Indonesian tax compliance costs would be almost 1 per cent of GDP. In terms of comparison with other developing countries, this ratio was roughly similar to that of Ethiopia (about 1 per cent) in the 2012/2103 year (Yesegat et al., 2015, p. 41) and South Africa (0.74 per cent) in the 2016/2017 year (Stark & Smulders, 2019, p. 819).

Conclusions in relation to the final objective follow from the discussion in Section 7.5. In general, the results of the analyses highlighted that turnover has been confirmed as the significant driver of tax compliance costs. In addition, education has been confirmed as the significant driver of the psychological costs.

To sum up, three key findings were generated from the estimations of the magnitude of the tax compliance costs of individual SMEs in Indonesia in 2019. First, the total tax compliance costs were estimated at IDR 154 trillion or approximately 1 per cent of the GDP of Indonesia. Secondly, on average, the tax compliance costs incurred by an individual SME who applied the conventional tax regime were almost twice (IDR 154.7 million) as much as those spent by a taxpayer who used the presumptive tax regime (IDR 77.5 million). Finally, turnover and education were confirmed to be the significant drivers of tax compliance costs and the psychological costs respectively.

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[145] Currency exchange of AUD 1 = IDR 10,629.30 as at 5 September 2021.

Chapter 8 now draws the thesis to a conclusion by considering the key contributions of the study to the literature on tax compliance costs, and identifying the limitations of the research and potential areas for future research.

Chapter 8: **DISCUSSION AND CONCLUSIONS**

8.1. Introduction

This chapter discusses the various outcomes of this study including the major findings in relation to the research objectives as set out in Chapter 1 and the contributions of the research to the literature. To complement the evaluation, the chapter acknowledges the limitations of this research and notes future directions for further research. Finally, concluding remarks are presented.

8.2. Summary of the Study and Its Major Findings

This study has systematically examined the tax compliance costs of individual SMEs in Indonesia and the influence of the particular tax regime on the extent to which these SMEs allocate their resources to complying with their tax obligations. For this purpose, this thesis in Chapter 2 set out an overview of the Indonesian tax system and the potential contributions which may be made by SMEs to tax revenue, and further explained the alternative tax regimes applying to SMEs in order to provide a contextual background for the study.

Chapter 3 recognised that the literature on tax compliance costs is a dynamic and multi-faceted subject and that that literature has suggested that tax compliance costs can, and should, be categorised into two categories: monetary and psychological costs.

While monetary costs have been considered the less complicated of these two categories of costs to measure, Chapter 3 also explained that the literature has not as yet developed a generally acknowledged measure of psychological compliance costs. For this reason, it was considered necessary to clarify the precise factors which drive psychological costs. As a result of the review of the literature, it was concluded that psychological costs can best be evaluated by using indirect effect analysis. This conceptual approach has been deemed robust in exploring the psychological burdens perceived by taxpayers.

A feature of the present study was that it introduced tax stressors as a potential indicator of psychological costs. Two further indicators of psychological costs were also evaluated: tax disputes and monetary costs quantifying various tax compliance activities conducted by taxpayers.

Considering its multidisciplinary scope, the thesis then argued that, to meet the research objectives with careful analysis, a sequential mixed-methods approach was required. The approach was considered appropriate in optimising the opportunities to capture findings from each of the analyses available under this research method and to enrich the quality of the research findings. Chapter 4 provided detailed discussion of the approach undertaken to satisfy the research objectives.

Consequently, this study applied a two-step, sequential data collection procedure. First, FGDs with nine participants (six tax advisers and three individual SMEs) were

held. Secondly, as a main phase of the research, extensive data collection was carried out using an email survey conducted through six cities across four provinces in Indonesia. A total of 132 individual SMEs were surveyed, comprising 79 which were subject to the presumptive tax regime and 53 the conventional tax regime. In terms of data analysis, thematic analysis was applied for the discussion group data, and a combination of multivariate analyses (including Student's t-test, Spearman correlation, Kruskal-Wallis, multiple linear regression, and SEM) were used to evaluate the survey data.

Chapter 5 then moved to a discussion of the qualitative findings which suggested that participants viewed individual SMEs as both hard-working and business-driven. The participants were generally of the opinion that individual SMEs were better off delegating their tax matters to an expert adviser. The qualitative data also suggested that the psychological burdens perceived by individual SMEs were influenced by some other factors in addition to those envisaged in the study design, such as experience, education, and tax disputes. Accordingly, those factors were included in the hypothesised factors. The results and the hypothetical relationships suggested in the qualitative phase were then applied to frame and detail the survey instrument in the next phase.

It was then considered appropriate, in Chapter 6, to identify the two initial efforts made to ensure the most effective conduct of the survey: pilot testing and defining the strategy for survey administration.

The results of the pilot test indicated two key points, namely that the survey could be completed in a reasonable time and that there was reliability that meaningful results could be generated from the main survey. In terms of the administrative elements of the survey, four strategies were implemented to enable the survey to produce accurate results: (i) designing an electronic questionnaire by using the REDCap application; (ii) selecting appropriate sample respondents; (iii) organising suitable survey timing; and (iv) managing survey distribution.

The analysis of the data obtained from the survey in Chapter 7 revealed three main results. First, as hypothesised, the empirical data demonstrated that tax compliance costs spent by individual SMEs in the conventional tax regime were higher than those utilising the presumptive tax regime. The mean values highlighted that the average costs incurred by individual SMEs in the conventional tax regime were almost twice as great as those in the presumptive tax regime.

Secondly, it was found that tax compliance costs were unaffected by individual SME age, gender, and experience. It was found however that the costs were related to taxpayer business size. Specifically, the findings established a direct relationship between each of annual turnover and the number of employees on the one hand and tax compliance costs on the other: the greater the turnover or number of employees recruited, the higher tax compliance costs incurred.

Finally, the structural models suggested that opportunity monetary costs had an indirect effect upon psychological costs through tax stressors and tax disputes. These

two mediators were both influential to the measured outcome. Put simply, monetary costs predict the psychological burdens perceived by individual SMEs through both the level of tax stressors and the evidence of tax disputes. In addition, education level had significant effects on the psychological costs: it seemed that taxpayers with a lower level of education perceived psychological burdens more often than those with a higher level.

To conclude, this study has provided important insights into unexplored aspects of the tax compliance costs of individual SMEs in Indonesia. This thesis has confirmed the advantage to taxpayers of using the presumptive tax regime in lowering explicit costs; these costs also appeared to be affected by the business size of the taxpayers. Furthermore, the psychological burdens were also confirmed to be mediated by both tax stressors and tax disputes.

8.3. Contributions to the Literature

The thesis has contributed to the body of knowledge on tax compliance costs in several ways.

First, the thesis has made the key methodological contribution of highlighting how various techniques of a multidisciplinary area can inform and complement each other to allow valuable findings to be made in a highly complex field such as estimation of tax compliance costs. Consequently, statistical results can be generated with a higher

degree of confidence than would be the case under narrower single discipline techniques, which is a substantial contribution.

Secondly, the survey administered as part of the study derived significant findings to a high level of statistical confidence. Evidence confirmed that taxpayers utilising the presumptive tax regime incurred lower tax compliance costs than those in the conventional tax regime, which verifies the theoretical and empirical propositions underlying the study.

Thirdly, the conceptual framework of indirect effect analysis developed in this thesis is a method of study of tax compliance costs that is not exclusive to taxpayers in Indonesia only. Hence, the entire framework, including the components for which a fit could not be established in the case of taxpayers in Indonesia, can nevertheless be tested in the case of respondents in other countries.

Finally, the significant results obtained through this study not only provide new understanding of the field of tax compliance costs overall, but also many specific issues within this field; for example, how the various components of the overall costs affect each other, how different tax regimes have effects on the costs incurred and how the monetary costs incurred inform the psychological costs. In specific terms for tax compliance costs in Indonesia, this study contributes to the field by confirming the advantage of applying the presumptive tax regime and verifying the mediating roles of tax stressors and tax disputes upon the psychological costs.

8.4. Limitations

This study, like all studies, has theoretical and practical limitations, three of which can in particular be noted. First, the findings of this study are based on a stratified and limited random sample designed to consider the influence of the different tax regimes on the tax compliance costs of individual SMEs whose business premises are located in the four major provinces in Indonesia. Because these participants are not representative of the population of all individual SME taxpayers in Indonesia, these findings must be interpreted with great caution particularly so far as individual SMEs who are located outside of the selected provinces are concerned.

A further limitation is the low response rate to the survey at 0.9 per cent. The impact of the COVID-19 pandemic at the time of the conduct of the survey was clearly a significant factor here. It seems, also, that taxpayers did not find research about taxation an appealing topic or the survey process may have been intimidating for individual SMEs, and it is also apparent that the term of tax compliance costs was considered closely associated with "tax compliance" for some potential respondents. Sadly, these factors may have been prominent enough among survey recipients to lead to the extremely low response rate of the study.

Finally, the study measured psychological costs on the basis of the perceived stress burdens. The study did not measure the actual stress, as the perception is considered an appropriate predictor of actual anxieties (Lazarus & Folkman, 1984). Nevertheless, a reliable measurement of perceived stress might not provide an accurate

representation of actual stress if taxpayers are otherwise motivated to comply with the tax law, such as through satisfaction with the government's effort to provide public facilities (Kogler, Muehlbacher, & Kirchler, 2015; Olsen et al., 2018).

8.5. Future Directions for Further Research

The major findings of this study support the hypothesis that the presumptive tax regime, which is typically associated with a more practical and pragmatic approach to tax system design, leads to lower tax compliance costs. The study also demonstrates the underlying process linking opportunity and psychological costs through the mediation of tax stressors and tax disputes. The results enhance existing knowledge of tax compliance costs of individual SMEs by examining various factors that are related to the tax compliance burden.

In this study, the evaluation of the impact of the presumptive tax regime on tax compliance costs is the most significant finding, as this is one of the first studies to seek to integrate opportunity costs and psychological costs based on the direct experience of Indonesian individual taxpayers. The empirical results validate the hypothesis that the presumptive tax regime indeed significantly reduces explicit costs. However, tax regime choice is not a significant determinant for implicit and psychological costs.

As noted in Section 8.4 above, opportunity costs were observed to indirectly affect psychological costs through two mediators. The results of this study substantiate the

view that the psychological burdens of taxpayers can be derived from both administrative obligations (required by the tax law) and the interaction between the tax office and taxpayers which leads to tax stressors and tax disputes. The conceptual framework in this thesis further identifies the indirect relationships that exist among important tax compliance costs constructs in the public regulation setting.

In the above context, a better understanding of the psychological costs could be achieved by including an analysis of managerial benefits and tax complexity in the study design (Lignier, 2009a; Tran-Nam et al., 2016). Hence, an exploratory study to provide novel insights into the various elements and measured constructs of managerial benefits and tax complexity may be useful.

Further research may also adopt the conceptual framework applied in this thesis and use it to evaluate the tax compliance costs associated with other public regulations and in different sectors and various countries. An improved understanding of the factors influencing the costs of tax compliance, particularly in the domain of public policy and governance, would also be gained by applying the conceptual research model in other contexts. Hence, the theoretical interactions identified in this thesis could be applied to other taxpayer settings, such as corporate or large taxpayers, which would enhance the literature on tax compliance costs.

Another phenomenon that is hard to ignore is the low contribution of tax revenue from SME taxpayers in Indonesia. As discussed earlier, individual SMEs, who have been contributing to the economy and constitute the largest portion of taxpayers, were

expected to contribute appropriately to the tax revenue by self-registering in the tax system, duly filing the tax return, correctly reporting taxable income, and paying properly their tax dues. However, from the low number of individual SMEs who submitted regular tax payments in 2019 (roughly two million, see Table 6-1) compared to the total number of individual taxpayers (roughly 40 million, see (DGT, 2020, p. 8), it seems that the revenue contributed is far below expectations.

Some scholars (see for example: Gunadi (2020); Inasius (2019); and Putra & Tjaraka (2020)) have suggested that it would be appropriate to increase the probability of tax audit, which is also in line with international research (Eisenhauer, 2006; Kogler et al., 2015).

This suggestion has been carefully considered but has been deemed not to be feasible for two main reasons. First, tax audits are resource-extensive (not only in terms of budget, but also in terms of their impact on the scarce workforce resources) while the tax authority has faced critically limited resources (see the number of citizens per staff full-time equivalent (ADB, 2022, p. 111)) to conduct such functions. Secondly, frequent tax audits indicate limited trust between the tax revenue authority and the taxpayers and hence could bring about detrimental effects to tax compliance. On the other hand, it has been suggested that establishing trust is highly beneficial in motivating greater tax compliance (Dom, Custers, Davenport, & Prichard, 2022), particularly for entrepreneurial taxpayers (Batrancea, Kudła, Błaszczak, & Kopyt, 2022, p. 473).

Instead of additional auditing, therefore, it may be more beneficial for the tax authority to focus more on the first three functions of tax administration: easing taxpayer registration, enhancing taxpayer education, and running taxpayer services (ADB, 2022, p. 70).[146] These three functions will be discussed shortly in the policy recommendations in the next section.

Notwithstanding the above limitations and suggested areas for future research, this study has made a contribution to the literature on tax compliance costs by providing insights into underexplored aspects of tax compliance costs of individual SMEs in Indonesia (Alm, 2019, p. 32) and by illuminating the processes and mechanisms which help to explain the connection and relationship between opportunity costs and the psychological costs of tax compliance.

8.6. Concluding Remarks

Research on the tax compliance costs of individual SMEs seems to be at an early stage. The current study could be one of the pioneering studies in this field for Indonesia. Notwithstanding its limitations, this study has produced significant findings related to the tax compliance costs of individual SMEs and the various factors influencing these costs. It is anticipated that the results generated from the study will enhance the knowledge and improve the development of the tax system in Indonesia.

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[146] ADB (2022, p.70) has listed nine functions of tax administration which including: taxpayer registration, taxpayer education, taxpayer service, tax return and payment processing, tax verification, dispute resolution, tax audit and debt collection, tax investigation and prosecution, and other support functions.

The current study has acknowledged the crucial role of individual SMEs in the Indonesian economy. It has found that the presumptive tax regime has simplified and lowered the explicit costs incurred by individuals SMEs in complying with the Indonesian tax system. While most respondents reported that they perceived a psychological disturbance when undertaking their tax obligations, education level seemed to influence their perceived psychological costs. These findings could be used by the Government of Indonesia, specifically the DGT, as providing the knowledge and basis for improving tax policies concerning individual SMEs through which they could be encouraged to contribute more not only to the economy but also to the country's tax revenue collection.

In addition to the reduced tax compliance costs encountered by those on the presumptive tax regime, the regime may have been helpful in encouraging taxpayers' registration, as clearly shown in Figure 6-1; since the adoption of the presumptive tax regime, the registration of individual SMEs has been increasing, and hence it also gives rise to an increase in the percentage of individual SMEs' tax lodgement. Notably the tax compliance ratio has increased from 23 per cent to 74 per cent during the period from 2014 to 2018. As registration has been considered to be "the backbone of any tax authority" (Gallagher, 2005, p. 139), policymakers in Indonesia may consider the partial retention of the regime after its scheduled expiry in 2025. More specifically, the option to apply the presumptive tax regime should be open for new taxpayers during the first two years of their operation,[147] whereas existing taxpayers should be obliged to switch to the conventional tax in 2025.

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[147] The option of two years is considered sufficient because one year is too short whereas three years may

It is also important that existing taxpayers on the presumptive tax regime should be informed about the expiry in 2025 so that they can be ready for the changes.

Following taxpayer registration, the tax authority should educate and support the taxpayers by providing continuous information related to the taxpayers' responsibilities in complying with their tax obligations. It is also important that the information is made available through a mix of simple and low-cost programs, including online iterations (ADB, 2022, pp. 73-75).

To provide enhanced tax service, the tax administration may also consider the use of modern technology such as the Application Programming Interfaces (APIs), which enable the exchange of information related to payments, lodgements, and information between the tax administration systems. Hence, the risk of errors can be mitigated because human data entry is limited (OECD, 2022, p. 18).

Finally, and as already noted, the government may consider some recommendations related to tax bunching behaviour (see Section 5.3.4. The Management of Tax Compliance Costs) and limit the impact of factors which may drive tax compliance costs (see Section 5.3.5).

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be excessive.

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APPENDICES

Appendix A: ETHICS APPROVAL DOCUMENTS

Letter 1 (top left)

KEMENTERIAN KEUANGAN REPUBLIK INDONESIA
DIREKTORAT JENDERAL PAJAK
DIREKTORAT PENYULUHAN, PELAYANAN, DAN HUBUNGAN MASYARAKAT
JALAN GATOT SUBROTO NOMOR 40-42 JAKARTA 12190 TELEPON (021) 5250208; FAKSIMILE (021) 5736088; SITUS
www.pajak.go.id LAYANAN INFORMASI DAN PENGADUAN KRING PAJAK (021) 1500200 EMAIL pengaduan@pajak.go.id;
informasi@pajak.go.id

Nomor	: S-310/PJ.09/2020	09 Juni 2020
Sifat	: Biasa	
Lampiran	: -	
Hal	: Permission to conduct research (Ferry)	

Yth. Head of School Taxation and Business Law, The University of New South Wales, The University of New South Wales

Referring your letter dated 30 April 2019 concerning the request to conduct research on behalf of:

Ferry

here with the Directorate of Dissemination, Service and Public Relations gives the permission for the student to conduct research in:

Pekalongan Tax Office

as long as the information/data gathered during the research will only be used for academic purposes which is not for publication and the information/data gathered is not considered confidential as stated on article 34 Law Number 6 Year 1983 concerning General Provisions and Tax Procedures as lastly amended by Law Number 16 Year 2009.

This permission letter is valid for six (6) months since the issuance date and could be extended for three (3) months maximum by submitting a written request, which is submitted for no longer than 1 (one) week prior to the expiry date of this letter.

Having completed the research, the student must submit a copy of the results of the research in a hardcopy form to the Directorate General of Taxes Headquarters Library at Main Building, 3rd Floor, Jl. Jenderal Gatot Subroto Kav. 40-42, South Jakarta and in softcopy form through email: perpustakaan.pajak@gmail.com and/or perpustakaan@pajak.go.id.

Thank you for your attention and cooperation.

a.n Direktur Penyuluhan, Pelayanan, dan Hubungan Masyarakat
Kepala Subdirektorat Penyuluhan Perpajakan

Ditandatangani secara elektronik
Aan Almaidah Anwar

Tembusan:
Direktur Penyuluhan, Pelayanan, dan Hubungan Masyarakat

Letter 2 (top right)

MINISTRY OF FINANCE OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF TAXES
DIRECTORATE OF DISSEMINATION, SERVICE AND PUBLIC RELATIONS
JALAN JENDERAL GATOT SUBROTO KAV. 40-42, JAKARTA 12190, PO BOX 124
TELEPHONE (021) 5250208, 5251509; FACSIMILE (021) 5736088; WEBSITE www.pajak.go.id
CALL CENTER 1500200; EMAIL pengaduan@pajak.do.id

Number	: S- 653 /PJ.091/2019	November 26, 2019
Classification	: Regular	
Concerning	: Permission to conduct research	

Dear Head of School Taxation and Business Law,
The University of New South Wales,
The University of New South Wales

Referring your letter dated 30 April 2019 concerning the request to conduct research on behalf of:

Ferry

here with the Directorate of Dissemination, Service and Public Relations gives the permission for the student to conduct research in:
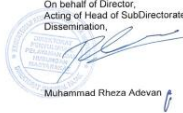
Cirebon I Tax Office

Cirebon II Tax Office

East Semarang Tax Office

Kudus Tax Office

Jakarta Kramat Jati Tax Office

as long as the information/data gathered during the research will only be used for academic purposes which is not for publication and the information/data gathered is not considered confidential as stated on article 34 Law Number 6 Year 1983 concerning General Provisions and Tax Procedures as lastly amended by Law Number 16 Year 2009.

This permission letter is valid for six (6) months since the issuance date and could be extended for three (3) months maximum by submitting a written request, which is submitted for no longer than 1 (one) week prior to the expiry date of this letter.

Having completed the research, the student must submit a copy of the results of the research in a hardcopy form to the Directorate General of Taxes Headquarters Library at Main Building, 3rd Floor, Jl. Jenderal Gatot Subroto Kav. 40-42, South Jakarta and in softcopy form through email: perpustakaan.pajak@gmail.com and/or perpustakaan@pajak.go.id.

Thank you for your attention and cooperation.

On behalf of Director,
Acting of Head of SubDirectorate of Tax Dissemination,

Muhammad Rheza Adevan

Kp.: PJ.091/PJ.0913/2019

Letter 3 (bottom left)

MINISTRY OF FINANCE OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF TAXES
DIRECTORATE OF DISSEMINATION, SERVICE AND PUBLIC RELATIONS
JALAN JENDERAL GATOT SUBROTO KAV. 40-42, JAKARTA 12190, PO BOX 124
TELEPHONE (021) 5250208, 5251509; FACSIMILE (021) 5736088; WEBSITE www.pajak.go.id
CALL CENTER 1500200; EMAIL pengaduan@pajak.do.id

Number	: S- 349 /PJ.091/2018	Juli 3, 2018
Classification	: Regular	
Concerning	: Permission to conduct research	

Dear Head of School Taxation and Business Law, The University of New South Wales, The University of New South Wales

Referring your letter dated 30 April 2019 concerning the request to conduct research on behalf of:

Ferry

here with the Directorate of Dissemination, Service and Public Relations gives the permission for the student to conduct research in:

Sidoarjo Utara Tax Office

as long as the information/data gathered during the research will only be used for academic purposes which is not for publication and the information/data gathered is not considered confidential as stated on article 34 Law Number 6 Year 1983 concerning General Provisions and Tax Procedures as lastly amended by Law Number 16 Year 2009.

This permission letter is valid for six (6) months since the issuance date and could be extended for three (3) months maximum by submitting a written request, which is submitted for no longer than 1 (one) week prior to the expiry date of this letter.

Having completed the research, the student must submit a copy of the results of the research in a hardcopy form to the Directorate General of Taxes Headquarters Library at Main Building, 3rd Floor, Jl. Jenderal Gatot Subroto Kav. 40-42, South Jakarta and in softcopy form through email: perpustakaan.pajak@gmail.com and/or perpustakaan@pajak.go.id.

Thank you for your attention and cooperation.

On behalf of Director,
Head of SubDirectorate of Tax Dissemination,

Aan Almaidah Anwar

Kp.: PJ.091/PJ.0913/2019

Letter 4 (bottom right)

MINISTRY OF FINANCE OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF TAXES
DIRECTORATE OF DISSEMINATION, SERVICE AND PUBLIC RELATIONS
JALAN JENDERAL GATOT SUBROTO KAV. 40-42, JAKARTA 12190, PO BOX 124
TELEPHONE (021) 5250208, 5251509; FACSIMILE (021) 5736088; WEBSITE www.pajak.go.id
CALL CENTER 1500200; EMAIL pengaduan@pajak.do.id

Number	: S- 333 /PJ.091/2018	Juni 21, 2018
Classification	: Regular	
Concerning	: Permission to conduct research	

Dear Head of School Taxation and Business Law,
The University of New South Wales,
The University of New South Wales

Referring your letter dated 30 April 2019 concerning the request to conduct research on behalf of:

Ferry

here with the Directorate of Dissemination, Service and Public Relations gives the permission for the student to conduct research in:

Surabaya Tegalsari Tax Office

as long as the information/data gathered during the research will only be used for academic purposes which is not for publication and the information/data gathered is not considered confidential as stated on article 34 Law Number 6 Year 1983 concerning General Provisions and Tax Procedures as lastly amended by Law Number 16 Year 2009.

This permission letter is valid for six (6) months since the issuance date and could be extended for three (3) months maximum by submitting a written request, which is submitted for no longer than 1 (one) week prior to the expiry date of this letter.

Having completed the research, the student must submit a copy of the results of the research in a hardcopy form to the Directorate General of Taxes Headquarters Library at Main Building, 3rd Floor, Jl. Jenderal Gatot Subroto Kav. 40-42, South Jakarta and in softcopy form through email: perpustakaan.pajak@gmail.com and/or perpustakaan@pajak.go.id.

Thank you for your attention and cooperation.

On behalf of Director,
Head of SubDirectorate of Tax Dissemination,

Aan Almaidah Anwar

Kp.: PJ.091/PJ.0913/2019

Appendix B: **FOCUS GROUP DISCUSSION PROTOCOLS**

Date   : 22 January 2020/ 5 February 2020

Participants   : tax advisers/ taxpayers

Number of participants   : 6/ 7/ 8/ 9/ 10

Welcome

Good morning and welcome to our discussion. Thank you for taking the time to join us to talk about tax compliance costs. My name is Ferry, from UNSW Sydney. I am very grateful that our discussion is supported by Petra Christian University and its team. First, I would like to introduce our facilitator today is YM, a program leader from Petra Christian University and assisted by AP, and JD as co-facilitators.

Overview of the topic

We want to learn from you about your experience as taxpayers in disbursing costs to satisfy with the tax law and its administrations. Likewise, we want to learn from you about your experience as tax advisers in your consultations with individual SMEs in Indonesia. The information you share will help us better understand the scale of the costs as well as provide empirical evidence for tax policy improvements for individual SMEs. You were invited because you have experience and or expertise in tax compliance costs of Indonesian individual SMEs. Tax compliance costs can be explicit in money disbursement (e.g. hiring the tax advisers, paying employees related

to the tax matters). These costs can also be implicit in time spent (e.g. learning the tax law, undertaking tax compliance activities), and they may take form in stress, frustration, and anxiety (or psychological).

Ground rules

There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. During the discussion, we are audio recording the session because we do not want to miss any of your comments. People often say very helpful things during discussions, and we can not write fast enough to get them all down. While the discussion applies a first name basis today, please be assured of complete confidentiality in our reports.

Questions

To begin, we have put name cards on the table in front of you to help us remember each other names. Let us find out some more about each other by telling us your name, and business sector (ex: food grocery). The list of indicative questions is highlighted in the table below.

No	Indicative Question	Question's Type
1	Based on your knowledge and experience, what are the most important things to be considered in running your business?	Opening
2	Was complying with the tax law one of the important things?	Opening

No	Indicative Question	Question's Type
3	When you think about tax compliance costs, what do you understand the term to mean?	Introductory
4	Based on your knowledge and experience, what are tax compliance activities?	Transition
5	How do you manage your tax compliance activities?	Key
6	What do you think is the role of tax advisers in assisting you to comply with the tax law?	Key
7	What do you think are the main difference in tax compliance costs between individual SMEs who operate under the presumptive tax regime and those who follow the conventional tax regime?	Key
8	Are you aware that after seven years of applying the presumptive tax, you must switch into the conventional tax?	Key
9	Are tax compliance costs a significant concern for individual SMEs? How do you generally feel about the costs?	Key
10	What factors do you think generally make the costs incurred to comply with the tax law low or high for individual SMEs?	Key
11	What factors do you think generally drive the costs incurred to comply with the tax law for individual SMEs?	Key
12	What factors do you think generally make the costs incurred to comply with the tax law easy or stressful for individual SMEs?	Key

No	Indicative Question	Question's Type
13	Do you think to comply with the tax law or undertake tax compliance activities carries psychological burdens for individual SMEs, and if so, how cumbersome are the burdens?	Key
14	If you do think that undertaking tax compliance activities carries psychological burdens, can you explain in what way it influences the tax compliance costs incurred?	Key
15	If you do not think that undertaking tax compliance activities carries psychological burdens, please explain why you come to that view?	Key
16	We are near the end of our discussion today, is there anything you want to add that have not covered during the discussion?	Ending

Things to consider:

✓ focus the questions from general to specific;

✓ apply open-ended questions (e.g. what did you think of the costs; how did you feel about the requirements; where do you get tax information; what do you like best about your role);

✓ use think back questions (e.g. think back to the last time you lodge your tax return);

✓ use questions that get participants involved;

✓ apply pauses to encourage participants to elaborate more to the discussion;

✓ use different type of questions: opening; introductory; transition; key; and ending questions.

Things to avoid:

o   avoid dichotomous questions (can be answered with a "yes" or "no");

o   avoid questions that can be answered with one word;

o   avoid "why" questions that perceived demanding and make people defensive. Instead, ask about attributes (characteristics or features of the topic) and influences (things that prompt or cause action). For instance, what prompted you to hire a tax adviser?

Some alternatives for ending questions:

❖   all things considered question (e.g. of all the things we discussed, what to you is the most important?);

❖   summary question (after a brief oral summary, the question asked is: is this an adequate summary?);

❖   final question (after facilitator reviewing the purpose of the study, then asks the participants: have we missed anything?).

Appendix C: SURVEY QUESTIONNAIRE

Section 1: **INCLUSION/ EXCLUSION CRITERIA**

1	What is your age range?	17 or less 18 – 25 26 – 35 36 – 45 46 – 55 56 and above
2	Is your income mainly derived from employment?	- yes - no
3	What is the legal structure of your business?	- sole proprietorship - other (e.g. firm, corporation, partnership, foundation, organisation, institution)
4	Please estimate the total gross turnover (IDR) of your business during the period from January to December 2019.	- up to 500 million - more than 500 million and up to 1 billion - more than 1 billion and up to 2 billion - more than 2 billion and up to 4.8 billion - above 4.8 billion

Section 2: **PISCF**

5	Due to the anonymity requirement, instead of your name, please provide the name of the city where your business is located (e.g. Ambon, Bandung, Cirebon, Denpasar, etc).	
6	Date (click the icon for today's date)	

Section 3: **DEMOGRAPHY AND BUSINESS CHARACTERISTICS**

7	What is your gender?	- female - male
8	What is your highest education level?	- primary school or less - high school - vocational college - university
9	What is your book-keeping knowledge?	- no book-keeping knowledge - basic book-keeping knowledge - intermediate book-keeping knowledge - advanced book-keeping knowledge
10	What is the main activity of your business?	- agriculture, plantation, forestry, and fishery - mining and extraction - manufacturing - electricity, gas, and water supply - construction - retail and restaurant - transport and communication - finance and leasing - service - other (please describe)
11	What was the average total number of your full-time employees during the period from January to December 2019?	- none 1 – 2 persons 3 – 5 persons 6 – 10 persons - more than 10 persons
12	Does your business produce annual financial statements such as a balance sheet and an income statement?	- yes - no

13	What does your business mostly use the annual financial statements for? (applied branching logic for the answer "yes" to Q12)	o to achieve better management o to meet requirements from creditors e.g. banks, lenders o to satisfy business tender requirements o to comply with the tax law o other (please describe)
14	What type of book-keeping system does your business use?	o no book-keeping system is used o paper based (without using a computer) o simple spreadsheet program e.g. Microsoft Excel o book-keeping software o assistance from an external book-keeper o other (please describe)
15	Did your business hire book-keeping employees during the period from January to December 2019? (applied branching logic for any answer **except** for the answer "no book-keeping system is used" to Q14)	o yes o no
16	Please estimate the total remuneration (IDR) for your own book-keeping employees during the period from January to December 2019. (applied branching logic for the answer "yes" to Q15)	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million

Section 4: **TAX COMPLIANCE COSTS**

17	How long has your business been registered with a taxpayer identification number?	- less than a year 1 – 2 years 3 – 5 years 6 – 10 years - more than 10 years
18	How does your business normally submit tax payments?	- electronically payment using e-billing (online) - physical payment through banks or post offices - using the Automatic Teller Machines (ATMs) - assistance from a tax adviser - other (please describe)
19	How does your business normally lodge the tax returns?	- electronically lodging using e-filing (online) - physically lodge the tax returns at the tax office - using post or courier services - assistance from a tax adviser - other (please describe)

The next question asks about time spent on tax compliance activities. You should not include normal business activities, only tax compliance activities.

Normal business activities (**NOT** tax compliance activities) include:

1. processing customer invoices or cash received;
2. paying bills and debts;
3. calculating and paying wages;
4. checking stocks and inventories;
5. budgeting and investment planning;
6. other book-keeping activities.

For the next questions about the time spent on tax compliance activities, please exclude such

activities.

Please estimate the monthly average of total hours spent on various tax compliance activities by your business during the period from January to December 2019 (include time spent by the business owner, unpaid helpers, and paid employees).

20	learning the tax law: attending tax workshop, studying tax from the DGT website or other sources	o none o up to 12 hours per month o more than 12 and up to 24 hours per month o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month
21	recording information needed for tax	o none o up to 12 hours per month o more than 12 and up to 24 hours per month

		o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month
22	determining taxable incomes and paying tax liabilities	o none o up to 12 hours per month o more than 12 and up to 24 hours per month o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month
23	preparing and lodging tax returns	o none o up to 12 hours per month o more than 12 and up to 24 hours per month o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month
24	dealing with the DGT, phone calls, emails, visits	o none o up to 12 hours per month o more than 12 and up to 24 hours per month o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month
25	dealing with your tax adviser	o none o up to 12 hours per month o more than 12 and up to 24 hours per month o more than 24 and up to 38 hours per month o more than 48 and up to 96 hours per month

	We would like to allocate those times (in per cent) between the various persons who spent the time on tax compliance activities (the sum of the allocation time must be 100 per cent).	
26	business owner	o 0 o 20 o 40 o 60 o 80 o 100
27	unpaid helpers (spouse, relatives, friends)	o 0 o 20 o 40 o 60 o 80 o 100
28	paid employees	o 0 o 20 o 40 o 60 o 80 o 100
29	If those total hours spent on tax compliance activities are calculated in terms of money (IDR), how much is the equivalent during the period January to December 2019?	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million
30	Did your business hire an external tax adviser during the period from January to December 2019?	o yes o no

31	Why did your business go to a tax adviser? (applied branching logic for the answer "yes" to Q30)	o tax return is confusing o busy with the business o could not understand the tax law o tax officials are not helpful o other (please describe)
32	Please estimate the total payment (IDR) for the tax services (tax adviser) during the period January to December 2019 (exclude payment for services when being audited, lodging an objection, or submitting an appeal to tax court). (applied branching logic for the answer "yes" to Q30)	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million
33	During the period from January to December 2019, was your business audited by the tax office?	o yes o no
34	How much were the additional costs (IDR) of tax advisers, lawyers, your own time or that of your staff, or other costs (such as transportation, stationery) related to the tax audit? (applied branching logic for the answer "yes" to Q33)	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million
35	During the period from January to December 2019, did your business submit a tax objection?	o yes o no
36	How much were the additional costs (IDR) of tax advisers, lawyers, your own time or that of your staff, or other costs (such as transportation, stationery) related to the submission of the objection?	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million

	(applied branching logic for the answer "yes" to Q35)	○ more than 150 million and up to 200 million ○ more than 200 million
37	During the period from January to December 2019, did your business submit a tax appeal?	○ yes ○ no
38	How much were the additional costs (IDR) of tax advisers, lawyers, your own time or that of your staff, or other costs (such as transportation, stationery) related to the submission of the appeal? (applied branching logic for the answer "yes" to Q37)	○ up to 50 million ○ more than 50 million and up to 100 million ○ more than 100 million and up to 150 million ○ more than 150 million and up to 200 million ○ more than 200 million

In addition to various costs incurred while complying with the tax law, studies have shown

that various benefits may be perceived by taxpayers.

Therefore, in this section, please indicate how often your business perceived various benefits such as:

39	improving the record-keeping of the business	o never o almost never o sometimes o fairly often o very often
40	maintaining more accurate records	o never o almost never o sometimes o fairly often o very often
41	improving the knowledge of the financial/ cash flow position of the business	o never o almost never o sometimes o fairly often o very often
42	enabling the business to have some extra cash until tax is remitted to the state treasury account	o never o almost never o sometimes o fairly often o very often
43	improving the knowledge of the profitability of the business	o never o almost never o sometimes o fairly often o very often

44	enabling the business to have an accountant who is a good source of advice for the business	o never o almost never o sometimes o fairly often o very often
45	enabling the business to employ an external tax services/ tax adviser who is a good source of advice for tax matters	o never o almost never o sometimes o fairly often o very often
46	If those benefits were calculated in terms of money (IDR), how much would be the equivalent amount during the period from January to December 2019?	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million

The following questions ask you to indicate the psychological burdens associated with tax

compliance activities.

Please indicate how stressful you would find each of the following tax compliance activities:

47	learning the tax law	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
48	maintaining record-keeping for tax purpose	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
49	calculating tax liabilities	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
50	submitting tax payments	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
51	lodging tax returns	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful

52	having been asked for clarifications or additional data by the DGT	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
53	finding a reliable tax adviser	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
54	experiencing changes in the tax law	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
55	having been audited by the DGT	o not at all stressful o slightly stressful o moderately stressful o very stressful o extremely stressful
56	If your stress burden were converted into money (IDR), how much would you ask to compensate for your stress burden during the period from January to December 2019?	o up to 50 million o more than 50 million and up to 100 million o more than 100 million and up to 150 million o more than 150 million and up to 200 million o more than 200 million

The following questions seek information about the general interaction between your business and the tax office.

Please indicate how often you found the following situations during the period from January to December 2019:

57	receiving answers to your queries related to your business tax compliance	o never o almost never o sometimes o fairly often o very often
58	having been asked for clarifications by the tax office	o never o almost never o sometimes o fairly often o very often
59	receiving notifications related to your business tax compliance (e.g. reminder to lodge the annual tax returns)	o never o almost never o sometimes o fairly often o very often
60	having been asked for additional data related to your tax returns	o never o almost never o sometimes o fairly often o very often
61	perceiving various benefits from contacting the tax office (e.g. tax disseminations from the DGT)	o never o almost never o sometimes o fairly often o very often

62	Based on your knowledge, how complicated is the Indonesian tax system?	- not at all complicated - slightly complicated - moderately complicated - very complicated - extremely complicated
63	Are you aware that after seven years of using the presumptive tax rate (0.5% of gross income), you must switch into the conventional tax regime* (based on the Government Ordinance No. 23 Year 2018)? * conventional tax regime is the tax rate based on the calculation of taxable income (gross income – costs of goods sold - operational expenses – tax threshold)	- yes - no

Finally, this section asks you to let us know how you feel when you are complying with the tax law.

Please indicate how often you experienced the following feelings during the period from January to December 2019.

64	upset because of the tax obligations and tax matters that happened unexpectedly	o never o almost never o sometimes o fairly often o very often
65	were unable to control the tax matters in your life	o never o almost never o sometimes o fairly often o very often
66	nervous and stressed because of the tax matters	o never o almost never o sometimes o fairly often o very often
67	confident about your ability to handle your tax matters	o never o almost never o sometimes o fairly often o very often
68	considered that tax matters were going your way	o never o almost never o sometimes o fairly often o very often
69	could not cope with all the tax matters that you had to do	o never o almost never

		o sometimes o fairly often o very often
70	able to control irritations when complying with the tax law	o never o almost never o sometimes o fairly often o very often
71	felt that you were on top of the tax matters	o never o almost never o sometimes o fairly often o very often
72	angered because of tax matters that were outside of your control	o never o almost never o sometimes o fairly often o very often
73	overwhelmed by the level of difficulty in complying with your tax obligations	o never o almost never o sometimes o fairly often o very often

Appendix D: DATA OF FOCUS GROUP DISCUSSIONS

No.	role_high (a)	role_low (b)	pre_high (c)	pre_low (d)	con_high (e)	con_low (f)	exp_high (g)	exp_low (h)	imp_high (i)	imp_low (j)	psy_high (k)	psy_low (l)	mng_high (m)	mng_low (n)	dri_high (o)	dri_low (p)
1	complying message	negating elements	pending matter	elevating rate	familiarising with accounting	understanding the law	increasing costs	recruiting employees	handling administrations	reducing costs	lacking knowledge	delegating tax administrations	understanding risks	no record-keeping	elevating burdens	simplifying procedures
2	consulting with the DGT	impairing aspects	reducing costs	optimising profits	administering VAT		understanding risks	guiding by the tax office	hiring employees	administering tasks	refusing updates	easing minds	limiting (tax) knowledge	understanding less	limiting education	
3	consulting with an adviser	threatening the business	reducing administrations	timing risk	inspiring creativity		knowing less	managing assets	supervising staffs		becoming emotional	managing risks	limiting education	limiting experience	administering VAT costs	
4	hiring fee based on revenues	calculating tax payments	limiting burdens	preparing risks	maximising outputs		restricting self		inability to self-administering		supervising employees	reducing stress	refusing advice	delegating tasks	undertaking administrations	
5	consult shopping	punishing determinants	understanding time limits				paying fees		receiving tax assistance		guiding by the tax office	sharing tax problems	feeling guilty	reducing psychological burdens	considering age	
6	mitigating the penalty	revealing the truth	lowering burdens				consult-shopping		receiving guidance		failing to report truthfully	limiting burdens	handling administrations	taking no precautions	reflecting education	
7	hiring tax adviser	applying the quo status	minimising procedures				avoiding fines		taking time		receiving penalty	lacking knowledge	hiring employees	limiting knowledge	living areas	
8	preparing administrations	denying the facts	simplifying payment				hiring tax adviser		reviewing financial reports		neglecting the lodgement duty	understanding obligations	spending time		varying factors	
9	receiving guidance	neglecting the situation	providing simplicity				outsourcing tasks		limiting knowledge		inability to handle	sleeping well	analysing financial aspects		managing book-keepings	

No.	role_high (a)	role_low (b)	pre_high (c)	pre_low (d)	con_high (e)	con_low (f)	exp_high (g)	exp_low (h)	imp_high (i)	imp_low (j)	psy_high (k)	psy_low (l)	mng_high (m)	mng_low (n)	dri_high (o)	dri_low (p)
10	looking for an adviser	probing the impossibility	enabling agility				easing minds		managing tasks		self-differentiating	hearing advise	depending on circumstances		receiving different perspective	
11	understanding the business	counting the opportunity	knowing the rate				managing risks		burdening costs		feeling distress	managing administrations	receiving advise		applying a system	
12	undertaking the procedures	devising tax planning					limiting stress		spending time		receiving advise	supporting roles	understanding better			
13	knowing the rules	countering the measures					lowering costs		receiving assistance		understanding the rules	facing a situation	managing assets			
14	receiving the guidance	paying based on certain amounts					limiting worries		lodging tax returns		notifying letter	understanding risks	facing difficulties			
15	seeking legal advice	unwilling to comply					grasping a concept		paying full attention		terrifying condition	canceling the burdens	managing liabilities			
16	suffering the penalty	changing the mindset					preparing resources		visiting the tax office		distressing situation	becoming less stress	receiving tax notice			
17	hearing the advice	refusing to comply					seeking advice		undertaking administrations		passing the deadline	reforming administrations	perceiving bad images			
18	risking the business	refusing to pay taxes					seeking tax adviser		learning the tax law		spending the money	improving services	remitting procedures			
19	mitigating the risks	paying minimal taxes					requesting assistance		delegating to assistant		volunteering compliance	revamping organisation	committing mistakes			
20	using the social media	counselling clients					running a business		requiring analyses		becoming stress	requesting assistance	taking punishment			
21	increasing trust to the government	telling consequences					undertaking the procedures		supervising reports		receiving tax notifications	paying taxes	suffering insolvency			
22	gaining taxpayers' trust	following guidance					understanding the rules				considering deeply		taking risks			

No.	role_high (a)	role_low (b)	pre_high (c)	pre_low (d)	con_high (e)	con_low (f)	exp_high (g)	exp_low (h)	imp_high (i)	imp_low (j)	psy_high (k)	psy_low (l)	mng_high (m)	mng_low (n)	dri_high (o)	dri_low (p)
23	adhering the guidance	changing behaviours					looking for a tax adviser				perceiving aspects		focusing business			
24	providing public education	measuring the risks					spending too much time				understanding limited aspects		receiving tax advise			
25	taking responsibility	threatening aspects					adjusting resources				having trouble		managing administrations			
26	keeping calm	making efforts					estimating costs				facing complex issues		recording systematically			
27	sleeping well	guiding elements					sharing problems				learning the tax law		using a software			
28	easing minds	examining the accounts					worsening the stress				managing risks		reducing costs			
29	running well the business	checking the balance					increasing risks				taking risks		reporting VAT			
30	referring others' experience	learning aspects					using the service						taking measures			
31	considering the options	realising the risks					saving the costs						giving advise			
32	providing explanations	daring the risks					hiring employments						providing assistance			
33	trying the best	delegating the tasks					delegating tasks						understanding the rates			
34	organising well book-keeping	counting the costs					receiving tax advice						managing book-keepings			
35	refraining from delay	revising the targets					using a software						threatening risks			

No.	role_high (a)	role_low (b)	pre_high (c)	pre_low (d)	con_high (e)	con_low (f)	exp_high (g)	exp_low (h)	imp_high (i)	imp_low (j)	psy_high (k)	psy_low (l)	mng_high (m)	mng_low (n)	dri_high (o)	dri_low (p)
36	pondering the ideas	increasing burdens					assigning accounting tasks						gaining profits			
37	suggesting ideas	needing a theraphy					receiving tax notice						running business			
38	backing up supports	reflecting the experience					using a system						limiting experience			
39	gaining profits	determining tax liabilites					adapting employees						taking procedures			
40	creating opportunities	paying taxes					learning habits						incurring costs			
41	facing the consequences	pending matters					daring risks						supervising reports			
42	taking risks	refusing to be advised														
43	reducing the burdens	unwilling to learn the tax law														
44	improving the administrations	relying on the tax adviser														
45	reducing the red tape	working hard to advise														
46	administering public staffs	unwilling to change habits														
47	guiding teams	evading the taxes														
48	willing to learn	feeling offended														
49	submitting the tax payments	caughting in the acts														

No.	role_high	role_low	pre_high	pre_low	con_high	con_low	exp_high	exp_low	imp_high	imp_low	psy_high	psy_low	mng_high	mng_low	dri_high	dri_low
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
50	calculating the threats	postponing the law														
51		providing chances														
52		looking at others														
53		perceiving others doing														
54		blaming others														
55		giving false statements														
56		providing false documents														
57		daring to evade														
58		receiving negative experience														
59		lodging incorect tax returns														
60		perceiving that VAT as an option														
61		feeling complicated														
62		creating false documents														
63		recalling bad experience														

No.	role_high	role_low	pre_high	pre_low	con_high	con_low	exp_high	exp_low	imp_high	imp_low	psy_high	psy_low	mng_high	mng_low	dri_high	dri_low
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
64		unwilling to submit taxes														
65		dodging penalties														
66		falling bankrupt														
67		desperating situations														
68		running out time														
69		running out money														
70		shocking things														
71		suffering the burdens														
72		perceiving ideas														
73		experiencing negative things														
74		terrifying experiences														
75		facing red tapes														

Appendix E: SURVEY INVITATIONS

UNSW Business School/
Taxation and Business Law

[INSERT date]
[INSERT Name]
[INSERT Address 1]
[INSERT Address 2]

Dear [Mr/Ms/Mrs/Dr Surname],

Research Study Title: Evaluating the tax compliance costs of small and medium enterprises operated by individuals (individual SMEs) under alternative business tax regimes in Indonesia

I am writing to let you know about a research study that you have the option to take part in. The research is being conducted by The School of Taxation and Business Law at The UNSW Sydney. I am contacting you because you are a registered individual SME taxpayer in Indonesia. Your contact details were obtained from the Directorate General of Taxes (DGT) Indonesia.

This research is being conducted to learn more about tax compliance costs of individual SME taxpayers in Indonesia during the 2019 fiscal year. Tax compliance costs refer to the costs that you have to incur in complying with the requirements of the tax system. They include monetary costs (e.g., the cost of hiring a tax adviser), time costs (e.g., time that you or your unpaid helpers spend in keeping tax records or completing a tax return) and psychological costs (e.g., personal stress and anxiety in dealing with tax affairs). Tax compliance costs can arise from your capacity as a taxpayer (e.g., own income tax) or as a third party (e.g., collecting and remitting employees' income tax to the DGT).

The reason we want to undertake this research is to evaluate and compare the tax compliance costs of individual SMEs under two different income tax regimes (presumptive and conventional income taxation) in Indonesia. The research focuses on the national tax system administered by the DGT, namely, income tax, withholding tax, Value Added Tax (VAT), and sales tax on luxury goods. Provincial and local taxes (such as motor vehicle tax, excise for transferring ownership of the motor vehicle, hotel tax, restaurant tax, entertainment tax, advertising tax, parking tax, rural and urban land and building tax, and excise for acquiring right on land and building tax, etc) are excluded from this study.

Taking part in this research study is optional. We are looking for people who want to take part in this research and who are satisfying the following criteria:

- Indonesians;
- individual taxpayers aged 18 and over;
- self-employed with annual turnover up to IDR 50 billion;
- the legal structure of the business is sole proprietorship (only one owner);
- located in four provinces (Jakarta, West, Central, and East Java);
- have spent costs to comply with the national tax system during the period January – December 2019.

If you decide to take part in the research, we would:

- ask you to complete an online questionnaire (see URL below). The questionnaire will ask you questions about your experience in complying the tax law. It should take approximately 20 to 30 minutes to complete;
- provide an IDR 20,000 valued e-voucher after the completion of this online survey for the first 500 respondents who also provide their email address.

You should be able to complete the questionnaire without consulting your tax advisers. In addition, you may find it helpful to have your 2019 tax records with you before commencing the survey.

If you would like more information or are interested in being part of the research study please contact:

Name:	Ferry
Email:	ferry@unsw.edu.au
Phone:	+62 812 5921 7363
Website:	https://redcap.med.unsw.edu.au/surveys/?s=4AJ7HC9X93

Taking part in this research study is voluntary. You may choose not to take part. If you decide not to take part in this research, your decision will not affect your relationship with The University of New South Wales nor the DGT.

This research has been reviewed and approved by The University of New South Wales Human Research Ethics Committee. If you have any complaints or concerns about the research study please email humanethics@unsw.edu.au or phone +61 2 9385 6222 quoting the following number HC190667.

Yours sincerely,

Ferry
Doctoral candidate in the School of Taxation and Business Law at the UNSW Sydney

Appendix F: **DATA OF SURVEY RESPONSES**

Code	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Expl	Impl	Time	Str	Dis	Psy	Bft
P1013	0	0	1	0	3	4	1	2	1	2	4	4	4	3	1	14	29	8	17	24
P4649	0	0	1	0	2	3	1	1	1	1	1	5	5	3	2	13	20	5	28	14
P2234	0	0	1	1	2	2	1	0	4	3	2	10	13	10	3	17	37	10	30	21
P476	1	0	1	1	3	3	2	4	5	3	3	5	6	4	2	18	14	11	21	34
P9755	1	0	1	0	4	4	1	0	3	5	5	3	5	2	3	9	10	7	26	25
P3278	0	0	0	0	4	4	2	0	3	3	4	5	4	1	3	21	39	12	24	26
P290	0	0	1	1	4	3	2	0	5	4	3	4	4	3	1	14	26	11	30	27
P4052	1	0	1	0	3	2	1	3	2	5	2	3	3	1	2	11	29	10	30	28
P3429	0	0	1	0	3	4	2	0	3	2	3	2	2	1	1	11	23	7	16	24
P499	0	0	1	1	4	4	3	3	3	3	4	8	6	4	2	15	28	12	30	17
P1689	0	0	1	0	6	3	1	2	1	3	1	3	3	2	1	9	10	10	21	11
P2617	0	0	1	0	5	4	3	0	4	4	4	6	4	2	2	18	37	15	32	20
P7487	0	0	0	1	5	4	1	0	3	5	3	2	2	1	1	7	17	3	26	7
P7179	0	0	0	1	5	4	4	0	5	5	4	3	2	1	1	9	31	9	30	20
P5067	0	0	0	0	3	4	1	1	1	5	2	2	1	0	1	8	24	6	28	18
P3997	1	0	0	0	5	4	1	0	2	4	1	1	1	0	1	8	22	5	28	19
P4699	0	0	0	0	3	4	1	3	2	3	2	1	1	0	1	10	20	3	13	7
P116	1	0	0	0	3	4	1	2	2	3	3	1	1	0	1	10	11	4	10	16
P3151	0	0	0	0	4	4	1	0	3	4	4	2	1	0	1	10	33	6	31	21
P2101	0	0	0	0	5	3	1	3	3	5	1	1	1	0	1	10	12	4	17	21
P862	0	0	0	0	4	4	1	2	3	3	2	1	1	0	1	13	10	3	14	19
P3941	0	0	0	0	3	4	2	0	2	1	1	1	1	0	1	11	10	3	14	25

Code	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Expl	Impl	Time	Str	Dis	Psy	Bft
P5484	0	0	0	0	5	4	2	1	2	5	1	1	1	0	1	11	11	3	24	23
P274	1	0	0	0	4	4	2	1	3	1	2	1	1	0	1	10	11	3	14	24
P2305	1	0	0	0	3	4	2	3	4	5	2	1	1	0	1	11	24	5	20	20
P3146	0	0	0	0	5	4	3	1	3	2	2	2	1	0	1	16	25	7	22	15
P2046	1	0	0	0	5	1	1	0	2	3	4	3	2	0	2	19	31	5	28	12
P91	1	0	0	0	4	2	1	3	2	4	4	3	2	0	2	15	33	10	22	19
P9538	1	0	0	0	3	4	1	0	2	4	3	3	2	0	2	16	32	11	32	21
P3061	0	0	0	0	5	4	1	3	2	4	3	1	1	0	1	16	22	3	16	18
P2051	0	0	0	0	3	4	1	3	3	2	3	1	1	0	1	11	25	6	20	20
P2293	1	0	0	0	2	4	1	3	4	2	2	1	1	0	1	8	16	6	29	18
P3765	0	0	0	0	3	3	2	2	1	3	3	3	2	0	2	15	29	4	25	13
P529	0	0	0	0	4	4	2	1	2	4	4	2	1	0	1	17	29	7	28	12
P618	0	0	0	0	4	4	2	2	2	4	2	2	1	0	1	16	31	8	27	12
W4	0	0	0	0	3	4	3	0	4	3	2	1	1	0	1	11	14	3	14	16
P3220	0	0	0	0	2	4	1	0	3	2	1	1	1	0	1	18	30	9	30	21
P7248	0	0	0	0	4	4	2	1	3	3	2	4	1	0	1	9	32	6	28	10
P315	0	0	0	0	4	4	1	2	2	4	2	1	1	0	1	23	10	9	24	27
P5053	1	0	0	0	4	4	1	1	1	4	4	1	1	0	1	10	28	4	31	7
P2390	0	0	0	0	5	4	1	3	3	4	2	1	1	0	1	12	13	3	23	21
P2523	0	0	0	0	4	2	2	4	2	3	3	1	1	0	1	10	17	8	25	18
P727	1	0	1	0	3	2	1	3	2	1	3	5	5	3	2	13	25	10	31	14
P14	0	0	0	0	3	4	4	2	5	3	5	7	3	2	1	9	45	12	43	23
P975	0	0	0	0	3	2	1	2	1	3	3	2	2	1	1	6	30	7	30	7
P9631	0	0	1	1	3	4	1	1	5	3	4	4	3	2	1	11	32	4	21	24
P3251	1	0	1	0	4	3	1	0	2	2	4	2	2	1	1	11	32	9	29	23
P4159	0	0	1	0	3	4	1	0	4	2	5	6	2	1	1	11	34	11	33	24
P2093	0	0	1	1	3	4	3	3	2	2	2	10	8	6	2	19	33	8	25	29
P4480	0	0	0	1	4	4	2	0	3	2	3	3	2	1	1	12	33	5	36	20

Code	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Expl	Impl	Time	Str	Dis	Psy	Bft
P3749	0	0	0	1	5	2	3	4	3	3	3	2	2	1	1	16	29	7	30	10
P1	0	0	0	1	5	4	4	0	1	5	3	2	2	1	1	10	12	3	21	16
P389	1	0	0	0	5	4	1	3	1	2	3	1	1	0	1	14	25	7	30	19
P3970	0	0	0	0	2	4	1	0	2	2	4	1	1	0	1	10	16	3	17	20
P2482	1	0	0	0	5	4	1	3	3	2	2	1	1	0	1	10	12	4	28	21
P9966	0	0	0	0	3	4	1	0	3	2	4	1	1	0	1	10	31	3	20	19
P1353	1	0	0	0	4	3	2	1	2	3	2	2	1	0	1	16	32	9	30	17
P3498	1	0	0	0	4	4	2	2	2	3	4	1	1	0	1	17	33	9	29	16
W23	0	0	0	0	2	4	1	2	1	2	3	1	1	0	1	10	24	8	29	17
P2708	0	0	0	0	5	4	1	3	1	3	2	1	1	0	1	10	17	3	18	12
P663	0	0	0	0	3	3	1	2	1	2	2	1	1	0	1	10	10	4	14	17
P3082	1	0	0	0	4	4	1	0	2	1	3	2	1	0	1	11	30	4	25	16
P4164	0	0	0	0	6	4	1	0	2	5	2	1	1	0	1	11	18	3	19	13
P296	1	0	0	0	4	2	1	2	2	2	2	1	1	0	1	9	30	3	30	15
P2340	0	0	0	0	3	4	1	3	3	4	3	1	1	0	1	9	20	4	18	15
P510	0	0	0	0	4	2	1	2	4	3	1	1	1	0	1	16	10	5	27	11
P4881	0	0	0	0	4	2	2	0	1	2	3	2	1	0	1	18	32	6	29	10
P3403	0	0	0	0	3	4	2	3	1	4	3	1	1	0	1	8	32	7	14	16
P2012	1	0	0	0	4	2	2	3	3	3	1	0	1	0	1	11	12	4	14	17
P3286	0	0	0	0	3	4	2	0	3	5	4	1	1	0	1	14	31	5	28	22
P4882	1	0	0	0	6	4	3	3	2	2	4	1	1	0	1	14	24	5	25	14
P37	0	0	0	0	6	2	3	2	3	5	2	1	1	0	1	9	13	3	26	16
W22	0	0	0	0	4	4	1	4	1	2	1	1	1	0	1	9	19	10	13	9
P6065	0	0	0	0	4	4	1	3	4	2	2	3	2	0	2	20	28	6	30	28
P3718	0	0	0	0	3	3	1	1	1	2	1	1	1	0	1	6	10	7	26	15
P3720	1	0	0	0	3	4	1	4	1	3	3	3	1	0	1	6	33	6	30	13
P1126	0	0	0	0	4	4	1	2	4	4	2	1	1	0	1	11	27	4	28	11
P271	1	0	0	0	4	4	2	2	5	4	2	1	1	0	1	8	12	3	19	16

Code	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Expl	Impl	Time	Str	Dis	Psy	Bft
W10	0	0	0	0	3	4	1	0	2	2	2	1	1	0	1	9	15	4	20	13
C5984	0	1	0	1	2	4	5	1	5	4	2	14	14	10	4	16	29	9	30	25
C3035	0	1	1	0	3	4	1	3	1	4	4	5	4	3	1	9	35	6	20	19
W19	1	1	1	1	4	4	1	3	1	4	5	5	4	3	1	9	36	10	41	22
C2371	0	1	1	1	4	4	3	3	4	5	3	4	4	3	1	9	27	8	22	22
C6735	1	1	1	1	5	4	2	0	3	4	1	4	4	3	1	10	18	7	29	27
C2095	1	1	1	1	4	4	2	3	3	3	3	7	4	3	1	12	37	4	31	25
C2392	0	1	1	1	5	4	5	0	5	4	4	9	7	5	2	16	33	12	29	19
C2315	0	1	1	1	5	3	5	0	4	3	3	8	7	5	2	19	34	12	31	20
C4034	0	1	1	1	5	3	2	0	3	3	3	9	7	5	2	16	35	12	32	18
C4826	1	1	1	0	3	4	5	1	5	3	2	3	3	2	1	11	20	4	26	28
C2186	1	1	1	0	3	4	1	4	2	2	4	4	3	2	1	6	43	5	34	17
C2337	1	1	1	0	4	4	2	4	3	3	2	2	3	2	1	9	20	7	24	17
C42	0	1	1	0	2	4	5	2	5	3	3	8	5	2	3	9	35	11	33	21
C699	1	1	1	0	2	4	1	2	2	3	3	3	3	2	1	12	30	12	31	16
C3798	0	1	1	0	4	4	3	1	4	2	3	8	4	2	2	10	18	10	26	16
C682	1	1	1	0	4	4	3	3	4	1	2	3	3	2	1	13	23	4	16	18
C5364	0	1	1	0	5	3	5	0	3	3	5	5	5	3	2	19	38	14	34	18
C5791	0	1	0	1	5	4	1	3	2	2	1	3	3	2	1	6	10	3	26	7
C5602	0	1	0	1	5	4	1	2	2	3	3	6	4	2	2	15	35	9	28	12
C3119	1	1	0	1	5	4	5	3	3	2	2	4	4	2	2	15	23	6	24	12
C6934	1	1	0	1	5	4	5	0	4	3	3	5	4	2	2	15	25	4	21	14
C6562	1	1	0	1	3	3	2	2	3	3	4	4	3	2	1	14	37	12	34	18
C3002	0	1	0	1	6	1	4	0	5	5	3	4	3	2	1	8	29	3	30	19
C4865	0	1	0	1	4	1	1	0	2	2	3	3	3	2	1	6	24	3	26	7
C4187	1	1	0	1	3	4	4	0	5	3	4	5	3	2	1	10	31	5	30	15
C3022	0	1	0	1	4	4	5	0	5	3	3	11	9	4	5	10	32	8	29	26
C6852	1	1	0	1	4	4	4	3	5	4	3	3	3	2	1	10	30	5	21	25

Code	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Expl	Impl	Time	Str	Dis	Psy	Bft	
C984	0	1	0	1	6	2	1	2	2	5	5	7	3	2	1	10	38	7	36	13	
C2566	1	1	0	1	4	4	3	3	4	4	1	3	3	2	1	6	18	3	15	9	
C2720	1	1	0	1	3	4	2	1	3	3	4	2	4	3	2	1	14	24	9	18	27
C3820	1	1	0	0	4	4	1	1	3	2	3	2	2	2	1	1	13	33	6	23	18
C910	0	1	0	0	4	4	1	1	0	2	5	2	2	2	1	1	20	10	3	16	35
C5287	1	1	0	0	4	2	3	1	1	4	4	5	6	2	1	1	16	46	5	44	7
C2902	1	1	0	0	3	4	3	1	4	4	3	2	3	2	1	1	10	28	5	26	23
C189	0	1	0	0	6	2	5	1	2	4	5	2	3	2	1	1	9	25	3	26	28
W20	1	1	0	0	4	4	1	1	1	2	2	3	10	7	5	2	19	40	8	33	24
C3620	0	1	0	0	4	4	1	1	0	1	3	3	2	2	1	1	11	17	4	14	11
C2	0	1	0	0	6	4	1	1	2	1	4	3	2	2	1	1	16	26	6	29	16
C2588	1	1	0	0	5	4	1	1	3	1	4	1	2	2	1	1	6	10	5	10	19
C3962	0	1	0	0	4	4	1	1	0	2	4	4	3	2	1	1	12	23	8	23	14
C570	0	1	0	0	5	4	1	1	2	2	5	3	2	2	1	1	9	33	4	21	12
C5797	0	1	0	0	5	4	1	0	3	2	2	2	2	2	1	1	14	25	7	26	14
C3935	1	1	0	0	4	4	1	1	3	2	2	3	3	3	1	2	13	30	7	24	13
C5796	0	1	0	0	4	4	1	1	1	2	3	2	2	2	1	1	9	18	3	10	7
C695	0	1	0	0	5	4	1	1	1	2	4	4	4	3	1	2	12	28	6	25	11
C1733	0	1	0	0	4	2	2	1	2	3	2	3	2	2	1	1	8	17	3	17	19
C112	0	1	0	0	5	4	3	1	2	4	5	3	3	2	1	1	12	30	7	23	12
C2757	0	1	0	0	5	4	1	0	0	2	5	2	2	2	1	1	12	15	5	24	28
C4171	0	1	0	0	6	4	4	1	2	5	3	3	2	2	1	1	12	13	6	26	16
C68	0	1	0	0	5	4	4	1	2	5	5	2	7	7	2	5	25	17	5	13	23
C6514	0	1	0	0	4	3	5	0	3	3	3	4	5	4	2	2	16	36	12	30	18
C3884	0	1	0	0	3	4	4	1	0	5	5	2	3	2	1	1	11	21	3	20	21
C2126	1	1	0	0	5	4	3	1	3	4	2	2	2	2	1	1	11	21	8	20	25

Note:

Sex : 0 = male; 1 = female → Q7

Reg : 0 = presumptive; 1 = conventional

Aud: 0 = never been audited nor lodged an objection (or appeal); 1 = have been audited or lodged an objection (or appeal) → Q33/Q35/Q37

Adv: 0 = did not hire a tax adviser; 1 = hired a tax adviser → Q30

Age: age range → Q1

Edu: highest education level → Q8

Ato: annual turnover → Q4

Rgn: 0 = Jakarta; 1 = West Java; 2 = Central Java; 3 = East Java; 4 = other → Q5

Emp: number of employees → Q11

Exp: tax experience → Q17

Cmp: perceived tax complexity → Q62

TCC: tax compliance costs = monetary costs + stressor costs (Q56) − managerial benefits (Q46)

Mon: monetary costs = explicit costs + implicit costs

Expl: explicit costs = Q32 + Q34 + Q36 + Q38

Impl: implicit costs = Q29

Time: total time to undertake tax compliance activities (sum Q20:Q25)

Str: total tax stressors (sum Q47:Q55)

Dis: total tax disputes = (Q33/Q35/Q37) + Q58 + Q59 + Q60

Psy: total psychological costs (sum Q64:Q73, reverse-order points for Q67, Q68, Q70, Q71)

Bft: total managerial benefits (sum Q39:Q45)

Appendix G: **NON-RESPONSE BIAS TEST**

Book-keeping knowledge

Response	Observed (O)		Total	p (E)	Expected (E)			
	Early	Late		Total/ Grand Total	Early p(E)*76	χ^2 (O-E)^2/E	Late p(E)*56	χ^2 (O-E)^2/E
no book-keeping knowledge	17	4	21	0.16	12.09	1.99	8.91	2.71
basic book-keeping knowledge	35	28	63	0.48	36.27	0.04	26.73	0.06
intermediate book-keeping knowledge	16	14	30	0.23	17.27	0.09	12.73	0.13
advanced book-keeping knowledge	8	10	18	0.14	10.36	0.54	7.64	0.73
Grand Total	**76**	**56**	**132**	χ^2		**2.67**		**3.62**
Degrees of freedom (df) = (number of rows – 1) x (number of columns – 1)			3	*p*-value		**0.45**		**0.30**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

Maintaining record keeping for tax purpose

Response	Observed (O)		Total	p (E)	Expected (E)			
	Early	Late		Total/ Grand Total	Early p(E)*76	χ^2 (O-E)^2/E	Late p(E)*56	χ^2 (O-E)^2/E
not at all stressful	17	11	28	0.21	16.12	0.05	11.88	0.07
slightly stressful	26	9	35	0.27	20.15	1.70	14.85	2.30
moderately stressful	24	24	48	0.36	27.64	0.48	20.36	0.65
very stressful	8	10	18	0.14	10.36	0.54	7.64	0.73
extremely stressful	1	2	3	0.02	1.73	0.31	1.27	0.42
Grand Total	**76**	**56**	**132**	χ^2		**3.07**		**4.17**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	*p*-value		**0.55**		**0.38**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Nervous and stressed because of tax matters

Response	Observed (O)		Total	p (E)	Expected (E)			
	Early	Late		Total/ Grand Total	Early p(E)*76	χ^2 (O-E)^2/E	Late p(E)*56	χ^2 (O-E)^2/E
Never	26	10	36	0.27	20.73	1.34	15.27	1.82
almost never	17	16	33	0.25	19.00	0.21	14.00	0.29
Sometimes	21	23	44	0.33	25.33	0.74	18.67	1.01
fairly often	9	6	15	0.11	8.64	0.02	6.36	0.02
very often	3	1	4	0.03	2.30	0.21	1.70	0.29
Grand Total	**76**	**56**	**132**	χ^2		**2.52**		**3.42**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	*p*-value		**0.64**		**0.49**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Appendix H: **BOXPLOTS**

Compliance Costs and Monetary Costs
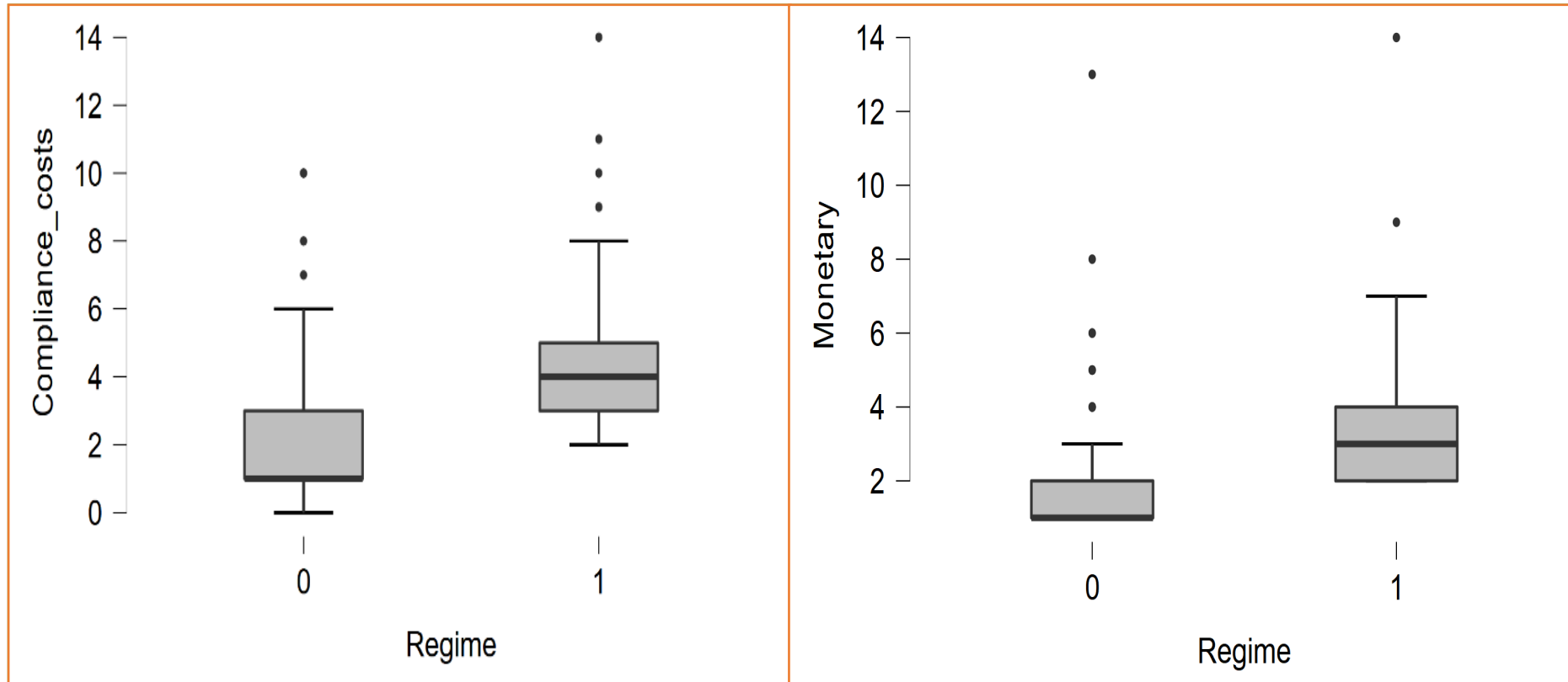
Explicit Costs and Implicit Costs
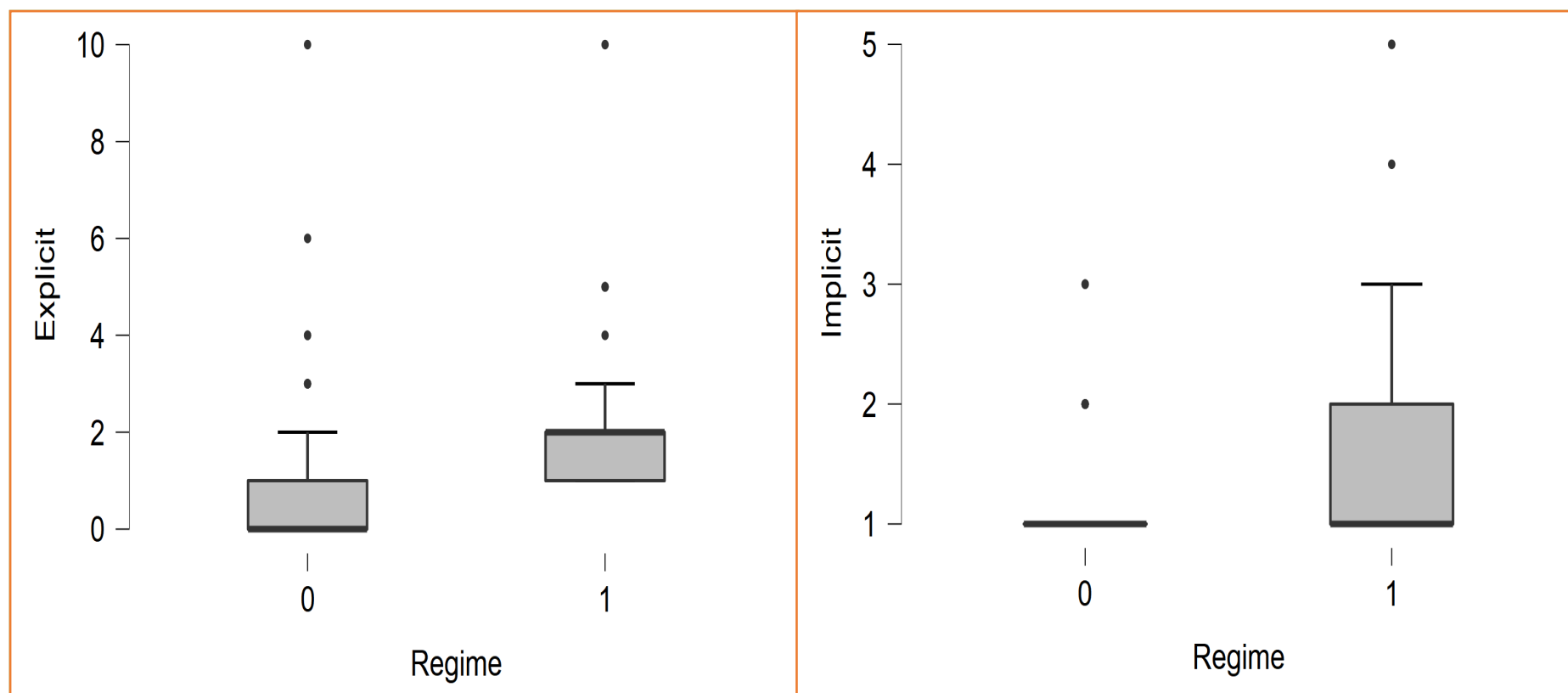
Total Time and Tax Disputes
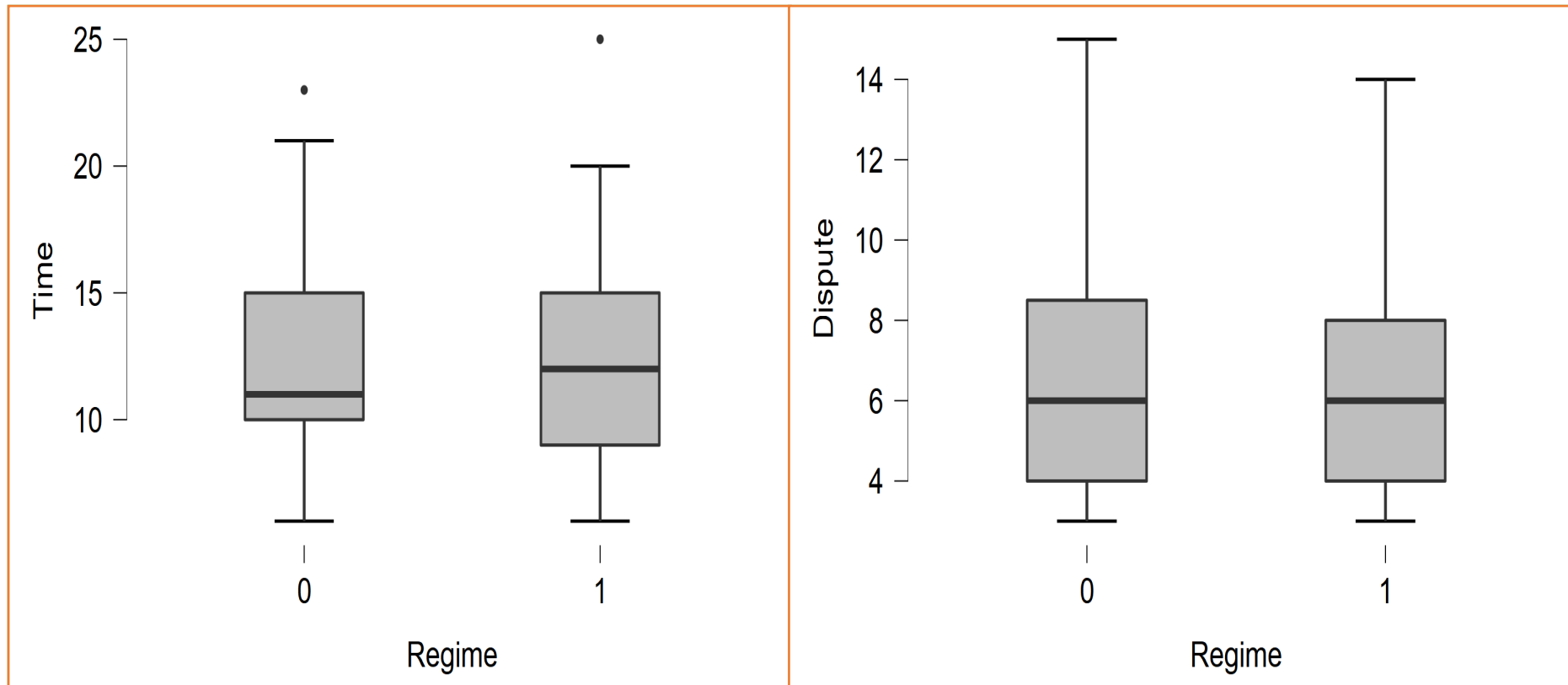
Tax Stressors and Psychological Costs
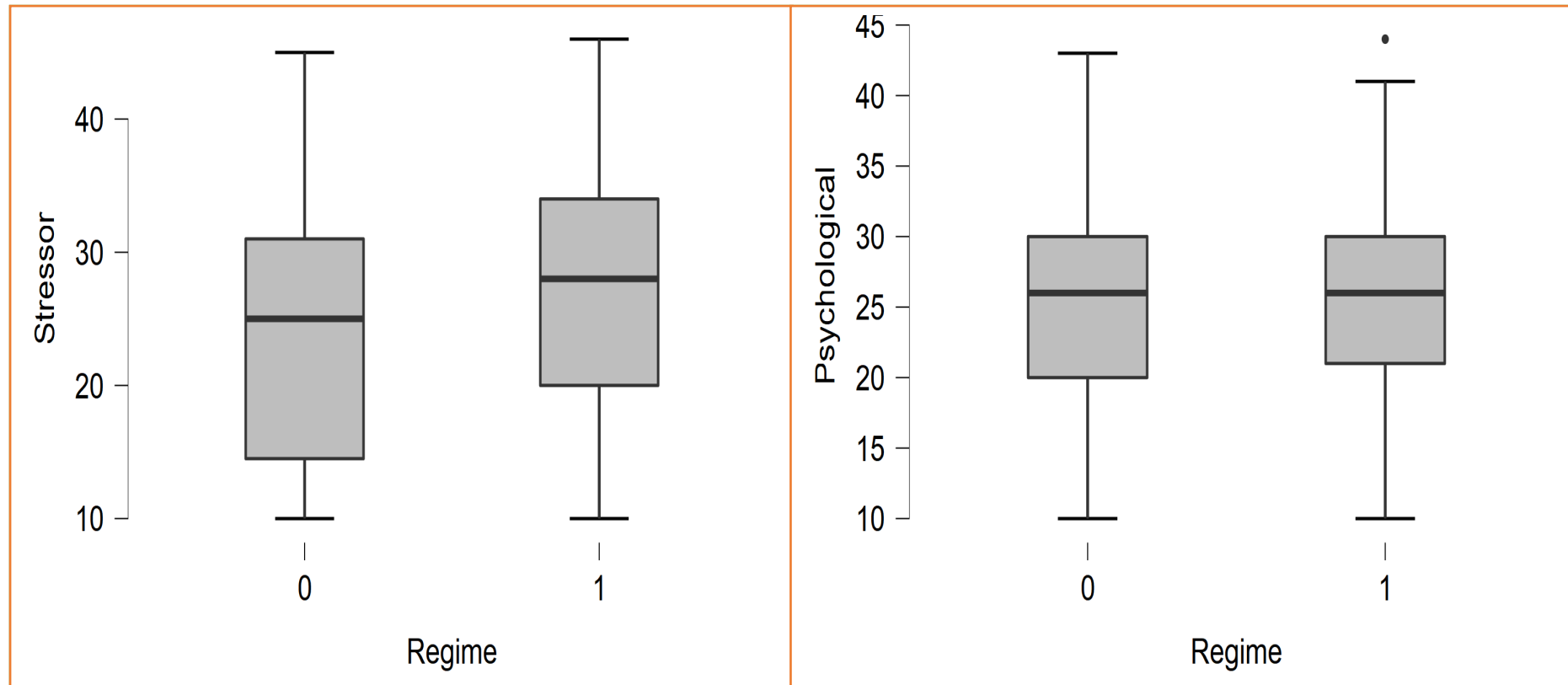
Appendix I: **DESCRIPTIVE STATISTICS**

Descriptive Statistics	Gender		Tax_audited		Tax_adviser		Age		Education	
	0	1	0	1	0	1	0	1	0	1
Valid	79	53	79	53	79	53	79	53	79	53
Missing	0	0	0	0	0	0	0	0	0	0
Mean	0.304	0.415	0.203	0.302	0.139	0.396	3.797	4.245	3.532	3.642
Std. Deviation	0.463	0.497	0.404	0.463	0.348	0.494	1.005	1.017	0.798	0.787
Skewness	0.87	0.355	1.509	0.888	2.125	0.437	0.266	-0.292	-1.426	-2.213
Std. Error of Skewness	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327
Skewness Z	3.210	1.086	5.568	2.716	7.841	1.336	0.982	- 0.893	- 5.262	- 6.768
Kurtosis	-1.276	-1.949	0.284	-1.26	2.579	-1.882	-0.415	-0.189	0.658	4.026
Std. Error of Kurtosis	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644
Kurtosis Z	- 2.385	- 3.026	0.531	- 1.957	4.821	- 2.922	- 0.776	- 0.293	1.230	6.252
Shapiro-Wilk	0.578	0.626	0.493	0.577	0.41	0.621	0.904	0.906	0.62	0.52
P-value of Shapiro-Wilk*	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
Range	1	1	1	1	1	1	4	4	3	3
Minimum	0	0	0	0	0	0	2	2	1	1
Maximum	1	1	1	1	1	1	6	6	4	4

Skewness Z = Skewness/ Std. Error of Skewness; Kurtosis Z = Kurtosis/ Std. Error of Kurtosis.

Z score significance: p<0.05 if z >1.96 p<0.01 if z >2.58 p<0.001 if z >3.29 (Goss-Sampson, 2020, p. 28).

* Significant results suggest a deviation from normality.

Descriptive Statistics	Turnover		Region		Employees		Tax_experience		Tax_complexity		Compliance_costs	
	0	1	0	1	0	1	0	1	0	1	0	1
Valid	79	53	79	53	79	53	79	53	79	53	79	53
Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean	1.582	2.604	1.582	1.717	2.519	3.132	3.089	3.396	2.684	2.849	2.316	4.472
Std. Deviation	0.826	1.597	1.346	1.321	1.175	1.316	1.168	1.062	1.081	1.026	2.023	2.693
Skewness	1.341	0.392	0.128	-0.076	0.488	0.063	0.171	0.033	0.167	0.314	2.053	1.481
Std. Error of Skewness	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327
Skewness Z	4.948	1.199	0.472	- 0.232	1.801	0.193	0.631	0.101	0.616	0.960	7.576	4.529
Kurtosis	1.071	-1.439	-1.36	-1.359	-0.476	-1.241	-0.896	-0.82	-0.767	-0.173	4.535	2.143
Std. Error of Kurtosis	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644
Kurtosis Z	2.002	- 2.234	- 2.542	- 2.110	- 0.890	- 1.927	- 1.675	- 1.273	- 1.434	- 0.269	8.477	3.328
Shapiro-Wilk	0.712	0.814	0.86	0.864	0.894	0.89	0.905	0.898	0.907	0.904	0.721	0.83
P-value of Shapiro-Wilk*	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
Range	3	4	4	4	4	4	4	4	4	4	10	12
Minimum	1	1	0	0	1	1	1	1	1	1	0	2
Maximum	4	5	4	4	5	5	5	5	5	5	10	14

Skewness Z = Skewness/ Std. Error of Skewness; Kurtosis Z = Kurtosis/ Std. Error of Kurtosis.

Z score significance: p<0.05 if z >1.96 p<0.01 if z >2.58 p<0.001 if z >3.29 (Goss-Sampson, 2020, p. 28).

* Significant results suggest a deviation from normality.

Descriptive Statistics	Monetary_costs		Total_time		Tax_stressors		Tax_disputes		Psychological_costs		Total_benefits	
	0	1	0	1	0	1	0	1	0	1	0	1
Valid	79	53	79	53	79	53	79	53	79	53	79	53
Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean	1.949	3.623	12.203	12.075	23.494	26.962	6.316	6.66	24.468	25.472	17.835	18.226
Std. Deviation	1.914	2.203	3.78	4.004	8.993	8.738	2.929	3.038	6.469	7.17	5.696	6.333
Skewness	3.348	2.598	0.707	0.796	-0.111	-0.103	0.666	0.658	-0.226	-0.014	0.195	0.188
Std. Error of Skewness	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327	0.271	0.327
Skewness Z	12.354	7.945	2.609	2.434	- 0.410	- 0.315	2.458	2.012	- 0.834	- 0.043	0.720	0.575
Kurtosis	14.586	8.923	-0.171	0.904	-1.108	-0.646	-0.367	-0.529	-0.286	0.202	-0.142	-0.255
Std. Error of Kurtosis	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644	0.535	0.644
Kurtosis Z	27.264	13.856	- 0.320	1.404	- 2.071	- 1.003	- 0.686	- 0.821	- 0.535	0.314	- 0.265	- 0.396
Shapiro-Wilk	0.559	0.698	0.932	0.945	0.925	0.98	0.911	0.913	0.944	0.985	0.987	0.978
P-value of Shapiro-Wilk*	< .001	< .001	< .001	0.016	< .001	0.497	< .001	< .001	0.002	0.737	0.613	0.418
Range	12	12	17	19	35	36	12	11	33	34	27	28
Minimum	1	2	6	6	10	10	3	3	10	10	7	7
Maximum	13	14	23	25	45	46	15	14	43	44	34	35

Skewness Z = Skewness/ Std. Error of Skewness; Kurtosis Z = Kurtosis/ Std. Error of Kurtosis.

Z score significance: $p<0.05$ if $z >1.96$ $p<0.01$ if $z >2.58$ $p<0.001$ if $z >3.29$ (Goss-Sampson, 2020, p. 28).

* Significant results suggest a deviation from normality.

Appendix J: **Z-SCORE ANALYSIS − CATEGORICAL DATA**

z-test for gender analysis

Gender	Presumptive	Conventional
Male	55	31
Female	24	22
Grand Total	79	53

p_1 = 55/79 = 0.70
p_2 = 31/53 = 0.58
p = (55+31)/(79+53) = 0.65
z-score = $(p_1-p_2)/((p*(1-p))*((1/n_1)+(1/n_2)))^{0.5}$ = 1.32
degree of freedom = $(n_1-1) + (n_2-1)$ = 130
probability alpha = 0.05
p-value = T.DIST.2T(z-score,df) = 0.19

No significant difference between the male proportion of the presumptive regime taxpayers and that of the conventional regime taxpayers.

z-test for annual report

Annual Report	Presumptive	Conventional
None	44	21
Available	35	32
Grand Total	79	53

p_1 = 44/79 = 0.56
p_2 = 21/53 = 0.40
p = (44+21)/(79+53) = 0.49
z-score = $(p_1-p_2)/((p*(1-p))*((1/n_1)+(1/n_2)))^{0.5}$ = 1.81
degree of freedom = $(n_1-1) + (n_2-1)$ = 130
probability alpha = 0.05
p-value = T.DIST.RT(z-score,df) = 0.04
critical t = critical z at 5% level of significance for a one-sided test is 1.645

There is a significant difference between annual report availability, in which conventional regime taxpayers more inclined to prepare their annual reports than presumptive regime taxpayers.

z-test for electronic filing (e-filing) in tax lodgement

Gender	Presumptive	Conventional
e-filing	57	31
non e-filing	22	22
Grand Total	79	53

p_1	= 57/79	= 0.72
p_2	= 31/53	= 0.58
p	= (57+31)/(79+53)	= 0.67
z-score	= $(p_1-p_2)/((p*(1-p))*((1/n_1)+(1/n_2)))^{0.5}$	= 1.63
degree of freedom	= $(n_1-1) + (n_2-1)$	= 130
probability alpha	= 0.05	
p-value	= T.DIST.2T(z-score,df)	= 0.11

No significant difference between the e-filing proportion of the presumptive regime taxpayers and that of the conventional regime taxpayers.

z-test for tax adviser

Tax Adviser	Presumptive	Conventional
None	68	32
Available	11	21
Grand Total	79	53

p_1	= 68/79	= 0.86
p_2	= 32/53	= 0.60
p	= (68+32)/(79+53)	= 0.76
z-score	= $(p_1-p_2)/((p*(1-p))*((1/n_1)+(1/n_2)))^{0.5}$	= 3.38
degree of freedom	= $(n_1-1) + (n_2-1)$	= 130
probability alpha	= 0.05	
p-value	= T.DIST.2T(z-score,df)	= 0.00

There is a significant difference between tax adviser engagement of the presumptive regime taxpayers and that of the conventional regime taxpayers.

z-test for tax dispute

Tax Dispute	Presumptive	Conventional
None	60	36
Available	19	17
Grand Total	79	53

p_1	= 60/79	= 0.76
p_2	= 36/53	= 0.68
p	= (60+36)/(79+53)	= 0.73
z-score	= $(p_1-p_2)/((p*(1-p))*((1/n_1)+(1/n_2)))^{0.5}$	= 1.01
degree of freedom	= $(n_1-1) + (n_2-1)$	= 130
probability alpha	= 0.05	
p-value	= T.DIST.2T(z-score,df)	= 0.31

No significant difference between the incident of tax dispute of the presumptive regime taxpayers and that of the conventional regime taxpayers

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Appendix K: χ² TEST

Age range

Age Range	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)²/E	Con p(E)*53	χ^2 (O-E)²/E
18 − 25	6	3	9	0.07	5.39	0.07	3.61	0.10
26 − 35	27	8	35	0.27	20.95	1.75	14.05	2.61
36 − 45	27	20	47	0.36	28.13	0.05	18.87	0.07
46 − 55	15	17	32	0.24	19.15	0.90	12.85	1.34
56 and above	4	5	9	0.07	5.39	0.36	3.61	0.53
Grand Total	**79**	**53**	3.12	χ^2		3.12		4.65
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	*p*-value		0.54		0.32
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Highest education level

Education	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
Primary school	1	2	3	0.02	1.80	0.35	1.20	0.53
High school	12	4	16	0.12	9.58	0.61	6.42	0.91
Vocational college	10	5	15	0.11	8.98	0.12	6.02	0.17
University	56	42	98	0.74	58.65	0.12	39.35	0.18
Grand Total	**79**	**53**	**132**	χ^2		**1.20**		**1.79**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			3	*p*-value		**0.75**		**0.62**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			7.81					

χ^2 test of **presumptive regime respondents** in relation to the gender and highest education level

Gender / Education	Observed (O) Male	Observed (O) Female	Total	p (E) Total/ Grand Total	Expected (E) Male p(E)*55	Expected (E) χ^2 (O-E)^2/E	Expected (E) Female p(E)*24	Expected (E) χ^2 (O-E)^2/E
Primary school	0	1	1	0.01	0.70	0.70	0.30	1.60
High school	7	5	12	0.15	8.35	0.22	3.65	0.50
Vocational college	7	3	10	0.13	6.96	0.00	3.04	0.00
University	41	15	56	0.71	38.99	0.10	17.01	0.24
Grand Total	**55**	**24**	**79**	χ^2		**1.02**		**2.34**
Degrees of freedom (df) = (number of rows – 1) x (number of columns – 1)			3	*p*-value		**0.80**		**0.51**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

χ^2 test of **conventional regime respondents** in relation to the gender and highest education level

Education / Gender	Observed (O) Male	Female	Total	p (E) Total/ Grand Total	Expected (E) Male p(E)*31	χ^2 (O-E)^2/E	Female p(E)*22	χ^2 (O-E)^2/E
Primary school	2	0	2	0.04	1.17	0.59	0.83	0.83
High school	3	1	4	0.08	2.34	0.19	1.66	0.26
Vocational college	4	1	5	0.09	2.92	0.40	2.08	0.56
University	22	20	42	0.79	24.57	0.27	17.43	0.38
Grand Total	**31**	**22**	**53**	χ^2		**1.44**		**2.03**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			3	*p*-value		**0.70**		**0.57**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

χ^2 test of **female respondents** in relation to the tax regime and highest education level

Education \ Tax regime	Observed (O) Pre	Observed (O) Con	Total	p (E) Total/ Grand Total	Expected (E) Pre p(E)*31	Expected (E) χ^2 (O-E)²/E	Expected (E) Con p(E)*22	Expected (E) χ^2 (O-E)²/E
Primary school	1	0	1	0.02	0.48	0.48	0.52	0.44
High school	5	1	6	0.13	2.87	1.22	3.13	1.12
Vocational college	3	1	4	0.09	1.91	0.44	2.09	0.40
University	15	20	35	0.76	16.74	0.64	18.26	0.58
Grand Total	**24**	**22**	**46**	χ^2		**2.77**		**2.54**
Degrees of freedom (df) = (number of rows – 1) x (number of columns – 1)			3	*p*-value		**0.43**		**0.47**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

Business location

Business location	Observed (O)		Total	p (E)	Expected (E)				
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E	
Jakarta	26	15	41	0.31	24.54	0.09	16.46	0.13	
West Java	11	7	18	0.14	10.77	0.00	7.23	0.01	
Central Java	17	12	29	0.22	17.36	0.01	11.64	0.01	
East Java	20	16	36	0.27	21.55	0.11	14.45	0.17	
Other	5	3	8	0.06	4.79	0.01	3.21	0.01	
Grand Total	**79**	**53**	**132**	χ^2		0.22		0.33	
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				0.55	
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.97	
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**						

Business sector

Business sector	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)²/E	Con p(E)*53	χ^2 (O-E)²/E
Agriculture and plantation	3	3	6	0.05	3.59	0.10	2.41	0.14
Mining and extraction	0	1	1	0.01	0.60	0.60	0.40	0.89
Manufacturing	5	4	9	0.07	5.39	0.03	3.61	0.04
Construction	2	5	7	0.05	4.19	1.14	2.81	1.71
Retail and restaurant	44	16	60	0.45	35.91	1.82	24.09	2.72
Transport and communication	1	1	2	0.02	1.20	0.03	0.80	0.05
Finance and leasing	4	2	6	0.05	3.59	0.05	2.41	0.07
Service	20	21	41	0.31	24.54	0.84	16.46	1.25
Grand Total	**79**	**53**	**132**	χ^2		4.61		6.87
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			7	**Total χ^2**				11.48
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.12
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**14.07**					

Business annual turnover

Business annual turnover	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
<= 500 million	47	21	68	0.52	40.70	0.98	27.30	1.46
< 500 million up to 1 billion	21	7	28	0.21	16.76	1.07	11.24	1.60
< 1 billion up to 2 billion	8	8	16	0.12	9.58	0.26	6.42	0.39
< 2 billion up to 4.8 billion	3	6	9	0.07	5.39	1.06	3.61	1.58
> 4.8 billion	0	11	11	0.08	6.58	6.58	4.42	9.81
Grand Total	**79**	**53**	**132**	χ^2		9.95		14.83
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				24.78
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.00
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Business total employees

Total employees	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
None	17	5	22	0.17	13.17	1.12	8.83	1.66
1 - 2 persons	25	16	41	0.31	24.54	0.01	16.46	0.01
3 - 5 persons	22	10	32	0.24	19.15	0.42	12.85	0.63
6 - 10 persons	9	11	20	0.15	11.97	0.74	8.03	1.10
More than 10 persons	6	11	17	0.13	10.17	1.71	6.83	2.55
Grand Total	**79**	**53**	**132**	χ^2		4.00		5.96
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				9.96
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.04
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Book-keeping knowledge

Book-keeping knowledge	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
No book-keeping knowledge	10	11	21	0.16	12.57	0.52	8.43	0.78
Basic book-keeping knowledge	40	23	63	0.48	37.70	0.14	25.30	0.21
Intermediate book-keeping knowledge	22	8	30	0.23	17.95	0.91	12.05	1.36
Advanced book-keeping knowledge	7	11	18	0.14	10.77	1.32	7.23	1.97
Grand Total	**79**	**53**	**132**	χ^2		**2.90**		**4.32**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			3	*p*-value		**0.41**		**0.23**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

Book-keeping system

Book-keeping system	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)²/E	Con p(E)*53	χ^2 (O-E)²/E
No book-keeping system	9	2	11	0.08	6.58	0.89	4.42	1.32
Paper based	26	12	38	0.29	22.74	0.47	15.26	0.70
Simple spreadsheet program	35	27	62	0.47	37.11	0.12	24.89	0.18
Book-keeping software	8	9	17	0.13	10.17	0.46	6.83	0.69
Assistance from an external book-keeper	1	3	4	0.03	2.39	0.81	1.61	1.21
Grand Total	**79**	**53**	**132**	χ^2		**2.75**		**4.10**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	*p*-value		**0.60**		**0.39**
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

χ^2 test of **presumptive regime respondents** in relation to the annual turnover and annual financial reports

Financial report / Annual turnover	Observed (O) No	Observed (O) Yes	Total	p (E) Total/ Grand Total	Expected (E) No p(E)*44	Expected (E) χ^2 (O-E)²/E	Expected (E) Yes p(E)*35	Expected (E) χ^2 (O-E)²/E
<= 500 million	28	19	47	0.59	26.18	0.13	20.82	0.16
< 500 million up to 1 billion	11	10	21	0.27	11.70	0.04	9.30	0.05
< 1 billion up to 2 billion	4	4	8	0.10	4.46	0.05	3.54	0.06
< 2 billion up to 4.8 billion	1	2	3	0.04	1.67	0.27	1.33	0.34
Grand Total	**44**	**35**	**79**	χ^2		**0.48**		**0.61**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			3	**Total χ^2**				**1.09**
Probability Alpha (α)			0.05	***p*-value = 0.78** = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**7.81**					

$χ^2$ test of **conventional regime respondents** in relation to the annual turnover and annual financial reports

Financial report / Annual turnover	Observed (O) No	Yes	Total	p (E) Total/ Grand Total	Expected (E) No p(E)*21	$χ^2$ (O-E)^2/E	Yes p(E)*32	$χ^2$ (O-E)^2/E
<= 500 million	15	6	21	0.40	8.32	5.36	12.68	3.52
< 500 million up to 1 billion	1	6	7	0.13	2.77	1.13	4.23	0.74
< 1 billion up to 2 billion	4	4	8	0.15	3.17	0.22	4.83	0.14
< 2 billion up to 4.8 billion	1	5	6	0.11	2.38	0.80	3.62	0.52
> 4.8 billion	0	11	11	0.21	4.36	4.36	6.64	2.86
Grand Total	**21**	**32**	**53**	$χ^2$		**11.87**		**7.79**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total $χ^2$**				**19.66**
Probability Alpha (α)			0.05	***p*-value = 0.00** = CHISQ.DIST.RT($χ^2$, df)				
Critical $χ^2$ = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

$χ^2$ test of **the existence of financial reports** in relation to the annual turnover and tax regime preference

Yes financial report	Observed (O)		Total	p (E)	Expected (E)			
Annual turnover	Pre	Con		Total/ Grand Total	Pre p(E)*35	$χ^2$ (O-E)^2/E	Con p(E)*32	$χ^2$ (O-E)^2/E
<= 500 million	19	6	25	0.37	13.06	2.70	11.94	2.96
< 500 million up to 1 billion	10	6	16	0.24	8.36	0.32	7.64	0.35
< 1 billion up to 2 billion	4	4	8	0.12	4.18	0.01	3.82	0.01
< 2 billion up to 4.8 billion	2	5	7	0.10	3.66	0.75	3.34	0.82
> 4.8 billion	0	11	11	0.16	5.75	5.75	5.25	6.28
Grand Total	**35**	**32**	**67**	$χ^2$		9.53		10.42
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total $χ^2$**				**19.95**
Probability Alpha (α)			0.05	*p*-value = 0.00 = CHISQ.DIST.RT($χ^2$, df)				
Critical $χ^2$ = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

χ^2 test of **presumptive regime respondents** in relation to the annual turnover and book-keeping system

Book-keeping system / Annual turnover	Observed (O) 1	2	3	4	5	Total	p (E) Total/ Grand Total
<= 500 million	7	15	21	4	0	47	0.59
< 500 million up to 1 billion	2	9	8	1	1	21	0.27
< 1 billion up to 2 billion	0	1	4	3	0	8	0.10
< 2 billion up to 4.8 billion	0	1	2	0	0	3	0.04
Grand Total	9	26	35	8	1	79	

Book-keeping system / Annual turnover	1 E = p(E)*9	(O-E)²/E	2 E = p(E)*26	(O-E)²/E	3 E = p(E)*35	(O-E)²/E	4 E = p(E)*8	(O-E)²/E	5 E = p(E)*1	(O-E)²/E
<= 500 million	5.35	0.51	15.47	0.01	20.82	0.00	4.76	0.12	0.59	0.59
< 500 million up to 1 billion	2.39	0.06	6.91	0.63	9.30	0.18	2.13	0.60	0.27	2.03
< 1 billion up to 2 billion	0.91	0.91	2.63	1.01	3.54	0.06	0.81	5.92	0.10	0.10
< 2 billion up to 4.8 billion	0.34	0.34	0.99	0.00	1.33	0.34	0.30	0.30	0.04	0.04
χ^2		1.82		1.66		0.58		6.94		2.76
Total χ^2		13.77		df = 12	Alpha (α) = 0.05			Critical χ^2 = 21.03		

χ^2 test of **conventional regime respondents** in relation to the annual turnover and book-keeping system

Book-keeping system / Annual turnover	Observed (O)					Total	p (E) Total/ Grand Total
	1	2	3	4	5		
<= 500 million	1	9	9	2	0	21	0.40
< 500 million up to 1 billion	0	1	3	1	3	8	0.15
< 1 billion up to 2 billion	1	1	5	0	0	7	0.13
< 2 billion up to 4.8 billion	0	1	4	0	1	6	0.11
> 4.8 billion	0	0	6	5	0	11	0.21
Grand Total	2	12	27	8	4	53	

Book-keeping system / Annual turnover	1		2		3		4		5	
	E = p(E)*2	(O-E)²/E	E = p(E)*12	(O-E)²/E	E = p(E)*27	(O-E)²/E	E = p(E)*8	(O-E)²/E	E = p(E)*4	(O-E)²/E
<= 500 million	0.79	0.05	4.75	3.79	10.70	0.27	3.17	0.43	1.58	1.58
< 500 million up to 1 billion	0.30	0.30	1.81	0.36	4.08	0.28	1.21	0.04	0.60	9.51
< 1 billion up to 2 billion	0.26	2.05	1.58	0.22	3.57	0.58	1.06	1.06	0.53	0.53
< 2 billion up to 4.8 billion	0.23	0.23	1.36	0.09	3.06	0.29	0.91	0.91	0.45	0.66
> 4.8 billion	0.42	0.42	2.49	2.49	5.60	0.03	1.66	6.72	0.83	0.83

χ²	3.05	6.95	1.45	9.15	13.11
Total χ²	**33.71**	**df = 16** **Alpha (α) = 0.05**		**Critical χ² = 26.30**	

Legend:

1 = No book-keeping system

2 = Paper based

3 = Simple spreadsheet program

4 = Book-keeping software

5 = Assistance from an external book-keeper

Tax experience

Tax experience	Observed (O)		Total	p (E)	Expected (E)				
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
Less than a year	5	1	6	0.05	3.59	0.55	2.41	0.82
1 - 2 years	23	10	33	0.25	19.75	0.53	13.25	0.80
3 - 5 years	23	19	42	0.32	25.14	0.18	16.86	0.27
6 - 10 years	16	13	29	0.22	17.36	0.11	11.64	0.16
More than 10 years	12	10	22	0.17	13.17	0.10	8.83	0.15
Grand Total	**79**	**53**	**132**	χ^2		1.48		2.20
Degrees of freedom (df) = (number of rows – 1) x (number of columns – 1)			4	**Total χ^2**				3.68
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.45
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Perceived tax complexity

Perceived tax complexity	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)²/E	Con p(E)*53	χ^2 (O-E)²/E
Not at all complicated	11	4	15	0.11	8.98	0.46	6.02	0.68
Slightly complicated	26	16	42	0.32	25.14	0.03	16.86	0.04
Moderately complicated	22	21	43	0.33	25.73	0.54	17.27	0.81
Very complicated	17	8	25	0.19	14.96	0.28	10.04	0.41
Extremely complicated	3	4	7	0.05	4.19	0.34	2.81	0.50
Grand Total	**79**	**53**	**132**	χ^2		1.64		2.45
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				4.09
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.39
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Tax payment method

Tax payment method	Observed (O)		Total	p (E)	Expected (E)			
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)²/E	Con p(E)*53	χ^2 (O-E)²/E
Electronically payment using e-billing (online)	54	34	88	0.67	52.67	0.03	35.33	0.05
Physical payment through banks or post offices	15	7	22	0.17	13.17	0.26	8.83	0.38
Using the Automatic Teller Machines (ATMs)	6	5	11	0.08	6.58	0.05	4.42	0.08
Assistance from a tax adviser	3	6	9	0.07	5.39	1.06	3.61	1.58
Other	1	1	2	0.02	1.20	0.03	0.80	0.05
Grand Total	**79**	**53**	**132**	χ^2		1.43		2.13
Degrees of freedom (df) = (number of rows – 1) x (number of columns – 1)			4	**Total χ^2**				3.56
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.47
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

Tax lodgement method

Tax lodgement method	Observed (O)		Total	p (E)	Expected (E)				
	Pre	Con		Total/ Grand Total	Pre p(E)*79	χ^2 (O-E)^2/E	Con p(E)*53	χ^2 (O-E)^2/E
Electronically lodging using e-filing (online)	57	31	88	0.67	52.67	0.36	35.33	0.53
Physically lodge the tax returns at the tax office	15	12	27	0.20	16.16	0.08	10.84	0.12
Using post or courier services	1	0	1	0.01	0.60	0.27	0.40	0.40
Assistance from a tax adviser	5	10	15	0.11	8.98	1.76	6.02	2.63
Other	1	0	1	0.01	0.60	0.27	0.40	0.40
Grand Total	**79**	**53**	**132**	χ^2		2.74		4.08
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				6.83
Probability Alpha (α)			0.05	*p*-value = CHISQ.DIST.RT(χ^2, df)				0.15
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			**9.49**					

χ^2 test of **presumptive regime respondents** in relation to the perceived tax complexity and use of tax advisers

Tax adviser / Tax complexity	Observed (O)		Total	p (E) Total/ Grand Total	Expected (E)			
	No	Yes			No p(E)*68	χ^2 (O-E)^2/E	Yes p(E)*11	χ^2 (O-E)^2/E
Not at all complicated	11	0	11	0.14	9.47	0.25	1.53	1.53
Slightly complicated	24	2	26	0.33	22.38	0.12	3.62	0.73
Moderately complicated	16	6	22	0.28	18.94	0.46	3.06	2.82
Very complicated	14	3	17	0.22	14.63	0.03	2.37	0.17
Extremely complicated	3	0	3	0.04	2.58	0.07	0.42	0.42
Grand Total	**68**	**11**	**79**	χ^2		0.92		5.66
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				6.57
Probability Alpha (α)			0.05	*p*-value = 0.16 = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			9.49					

χ^2 test of **conventional regime respondents** in relation to the perceived tax complexity and use of tax advisers

Tax adviser / Tax complexity	Observed (O)		Total	p (E)	Expected (E)				
	No	Yes		Total/ Grand Total	No p(E)*32	χ^2 (O-E)^2/E	Yes p(E)*21	χ^2 (O-E)^2/E	
Not at all complicated	1	3	4	0.08	2.42	0.83	1.58	1.26	
Slightly complicated	13	3	16	0.30	9.66	1.15	6.34	1.76	
Moderately complicated	11	10	21	0.40	12.68	0.22	8.32	0.34	
Very complicated	5	3	8	0.15	4.83	0.01	3.17	0.01	
Extremely complicated	2	2	4	0.08	2.42	0.07	1.58	0.11	
Grand Total	**32**	**21**	**53**	χ^2		2.28		3.48	
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			4	**Total χ^2**				5.76	
Probability Alpha (α)			0.05	**p-value = 0.22** = CHISQ.DIST.RT(χ^2, df)					
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			9.49						

χ² test of **presumptive regime respondents** in relation to the tax disputes and use of tax advisers

Tax dispute / Tax adviser	Observed (O) No	Observed (O) Yes	Total	p (E) Total/ Grand Total	Expected (E) No p(E)*68	Expected (E) χ² (O-E)²/E	Expected (E) Yes p(E)*11	Expected (E) χ² (O-E)²/E
No	55	13	11	0.86	51.65	0.22	16.35	0.69
Yes	5	6	26	0.14	8.35	1.35	2.65	4.25
Grand Total	**60**	**19**	**79**	**χ²**		**1.56**		**4.94**
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			1	**Total χ²**				**6.51**
Probability Alpha (α)			0.05	**p-value = 0.01** = CHISQ.DIST.RT(χ², df)				
Critical χ² = CHISQ.INV.RT(Probability, Degrees of freedom)			**3.84**					

χ^2 test of **conventional regime respondents** in relation to the tax disputes and use of tax advisers

Tax dispute / Tax adviser	Observed (O)		Total	p (E) Total/ Grand Total	Expected (E)			
	No	Yes			No p(E)*68	χ^2 (O-E)²/E	Yes p(E)*11	χ^2 (O-E)²/E
No	23	9	32	0.60	21.74	0.07	10.26	0.16
Yes	13	8	21	0.40	14.26	0.11	6.74	0.24
Grand Total	**36**	**17**	**53**	χ^2		0.18		0.40
Degrees of freedom (df) = (number of rows − 1) x (number of columns − 1)			1	**Total χ^2**				**0.58**
Probability Alpha (α)			0.05	*p*-value = 0.45 = CHISQ.DIST.RT(χ^2, df)				
Critical χ^2 = CHISQ.INV.RT(Probability, Degrees of freedom)			3.84					

χ^2 test of **presumptive regime respondents** in relation to the perceived tax complexity and tax experience

Tax experience / Tax complexity	Observed (O)					Total	p (E)
	< 1 year	1 - 2 years	3 - 5 years	6 - 10 years	> 10 years		Total/ Grand Total
Not at all complicated	2	3	3	1	2	11	0.14
Slightly complicated	1	8	7	5	5	26	0.33
Moderately complicated	2	6	7	5	2	22	0.28
Very complicated	0	5	5	5	2	17	0.22
Extremely complicated	0	1	1	0	1	3	0.04
Grand Total	5	23	23	16	12	79	

Tax experience / Tax complexity	< 1 year		1 - 2 years		3 - 5 years		6 - 10 years		> 10 years	
	E = p(E)*5	(O-E)²/E	E = p(E)*23	(O-E)²/E	E = p(E)*23	(O-E)²/E	E = p(E)*16	(O-E)²/E	E = p(E)*12	(O-E)²/E
Not at all complicated	0.70	2.44	3.20	0.01	3.20	0.01	2.23	0.68	1.67	0.06
Slightly complicated	1.65	0.25	7.57	0.02	7.57	0.04	5.27	0.01	3.95	0.28
Moderately complicated	1.39	0.27	6.41	0.03	6.41	0.06	4.46	0.07	3.34	0.54
Very complicated	1.08	1.08	4.95	0.00	4.95	0.00	3.44	0.70	2.58	0.13
Extremely complicated	0.19	0.19	0.87	0.02	0.87	0.02	0.61	0.61	0.46	0.65

χ^2		4.23	0.08	0.13	2.07	1.66
Total χ^2		8.17	df = 16 Alpha (α) = 0.05		Critical χ^2 = 26.30	

Total χ^2 is less than the critical χ^2 and suggested that no significant difference between the more experience and less experience of presumptive regime taxpayers have in perceiving tax complexity.

χ^2 test of **conventional regime respondents** in relation to the perceived tax complexity and tax experience

Tax experience / Tax complexity	Observed (O)					Total	p (E) Total/ Grand Total
	< 1 year	1 - 2 years	3 - 5 years	6 - 10 years	> 10 years		
Not at all complicated	0	1	0	3	0	4	0.08
Slightly complicated	1	3	5	2	5	16	0.30
Moderately complicated	0	5	10	2	4	21	0.40
Very complicated	0	1	3	4	0	8	0.15
Extremely complicated	0	0	1	2	1	4	0.08
Grand Total	1	10	19	13	10	53	

Tax experience / Tax complexity	< 1 year		1 - 2 years		3 - 5 years		6 - 10 years		> 10 years	
	E = p(E)*1	(O-E)²/E	E = p(E)*10	(O-E)²/E	E = p(E)*19	(O-E)²/E	E = p(E)*13	(O-E)²/E	E = p(E)*10	(O-E)²/E
Not at all complicated	0.08	0.08	0.75	0.08	1.43	1.43	0.98	4.15	0.75	0.75
Slightly complicated	0.30	1.61	3.02	0.00	5.74	0.09	3.92	0.94	3.02	1.30
Moderately complicated	0.40	0.40	3.96	0.27	7.53	0.81	5.15	1.93	3.96	0.00
Very complicated	0.15	0.15	1.51	0.17	2.87	0.01	1.96	2.12	1.51	1.51
Extremely complicated	0.08	0.08	0.75	0.75	1.43	0.13	0.98	1.06	0.75	0.08

χ^2		2.31	1.28	2.48	10.20	3.64
Total χ^2		19.91	df = 16 Alpha (α) = 0.05		Critical χ^2 = 26.30	

Total χ^2 is less than the critical χ^2 and suggested that no significant difference between the more experience and less experience of conventional regime taxpayers have in perceptions of tax complexity.

$χ^2$ test of **presumptive regime respondents** in relation to the annual turnover and method of tax payment

Tax payment method / Annual turnover	Observed (O)					Total	p (E) Total/ Grand Total
	1	2	3	4	5		
<= 500 million	29	14	3	0	1	47	0.59
< 500 million up to 1 billion	16	0	3	2	0	21	0.27
< 1 billion up to 2 billion	7	0	0	1	0	8	0.10
< 2 billion up to 4.8 billion	2	1	0	0	0	3	0.04
Grand Total	54	15	6	3	1	79	

Tax payment method / Annual turnover	1		2		3		4		5	
	E = p(E)*54	(O-E)²/E	E = p(E)*15	(O-E)²/E	E = p(E)*6	(O-E)²/E	E = p(E)*3	(O-E)²/E	E = p(E)*1	(O-E)²/E
<= 500 million	32.13	0.30	8.92	2.89	3.57	0.09	1.78	1.78	0.59	0.28
< 500 million up to 1 billion	14.35	0.19	3.99	3.99	1.59	1.24	0.80	1.81	0.27	0.27
< 1 billion up to 2 billion	5.47	0.43	1.52	1.52	0.61	0.61	0.30	1.60	0.10	0.10
< 2 billion up to 4.8 billion	2.05	0.00	0.57	0.33	0.23	0.23	0.11	0.11	0.04	0.04
$χ^2$		0.92		8.72		2.16		5.31		0.68
Total $χ^2$		**17.79**	df = 12	Alpha (α) = 0.05				Critical $χ^2$ = 21.03		

χ^2 test of **conventional regime respondents** in relation to the annual turnover and method of tax payment

Annual turnover / Book-keeping system	Observed (O)					Total	p (E) Total/ Grand Total
	1	2	3	4	5		
<= 500 million	15	2	2	1	1	21	0.40
< 500 million up to 1 billion	4	1	1	1	0	7	0.13
< 1 billion up to 2 billion	6	1	1	0	0	8	0.15
< 2 billion up to 4.8 billion	3	1	0	2	0	6	0.11
> 4.8 billion	6	2	1	2	0	11	0.21
Grand Total	34	7	5	6	1	53	

Annual turnover / Book-keeping system	1		2		3		4		5	
	E = p(E)*34	(O-E)²/E	E = p(E)*7	(O-E)²/E	E = p(E)*5	(O-E)²/E	E = p(E)*6	(O-E)²/E	E = p(E)*1	(O-E)²/E
<= 500 million	13.47	0.17	2.77	0.22	1.98	0.00	2.38	0.80	0.40	0.92
< 500 million up to 1 billion	4.49	0.05	0.92	0.01	0.66	0.17	0.79	0.05	0.13	0.13
< 1 billion up to 2 billion	5.13	0.15	1.06	0.00	0.75	0.08	0.91	0.91	0.15	0.15
< 2 billion up to 4.8 billion	3.85	0.19	0.79	0.05	0.57	0.57	0.68	2.57	0.11	0.11
> 4.8 billion	7.06	0.16	1.45	0.21	1.04	0.00	1.25	0.46	0.21	0.21

χ^2		0.72	0.49	0.82	4.78	1.52
Total χ^2		8.33	df = 16 Alpha (α) = 0.05		Critical χ^2 = 26.30	

Legend:

1 = Electronically payment using e-billing (online)

2 = Physical payment through banks or post offices

3 = Using the Automatic Teller Machines (ATMs)

4 = Assistance from a tax adviser

5 = Other

Summary of χ^2 cross distribution analysis

Cross distribution		Presumptive				Conventional			
Characteristics_1	Characteristics_2	χ^2	critical χ^2	sign	p-value	χ^2	critical χ^2	sign	p-value
Education	Gender	3.36	7.81	similar/ unrelated	0.34	3.47	7.81	similar/ unrelated	0.33
Annual turnover	Financial report	1.09	7.81	similar/ unrelated	0.78	19.66	9.49	different/ related	0.00
Annual turnover	Book-keeping system	13.77	21.03	similar/ unrelated	0.32	33.71	26.30	different/ related	0.01
Tax adviser	Tax dispute	6.51	3.84	different/ related	0.01	0.58	3.84	similar/ unrelated	0.45
Perceived tax complexity	Tax adviser	6.57	9.49	similar/ unrelated	0.16	5.76	9.49	similar/ unrelated	0.22
Perceived tax complexity	Tax experience	8.17	26.30	similar/ unrelated	0.94	19.91	26.30	similar/ unrelated	0.22
Annual turnover	Tax payment method	17.79	21.03	similar/ unrelated	0.12	8.33	26.30	similar/ unrelated	0.94

Appendix L: **INDEPENDENT SAMPLES T-TEST**

Independent Samples T-Test

Measured construct	t	df	p	Cohen's d
Compliance_costs	5.245	130	< .001	0.931
Monetary opportunity	4.631	130	< .001	0.822
Explicit	5.11	130	< .001	0.907
Implicit	1.941	130	0.027	0.345
Time	-0.185	130	0.573	-0.033
Stressor	2.197	130	0.015	0.39
Dispute	0.652	130	0.258	0.116
Psychological	0.836	130	0.202	0.148
Benefit	0.37	130	0.356	0.066

Note. the alternative hypothesis specifies that group Conventional is greater than group Presumptive; the analysis used the Student's t-test.

pwr.2p2n.test(h = 0.907, n1 = 79, n2 = 53, sig.level = 0.05)
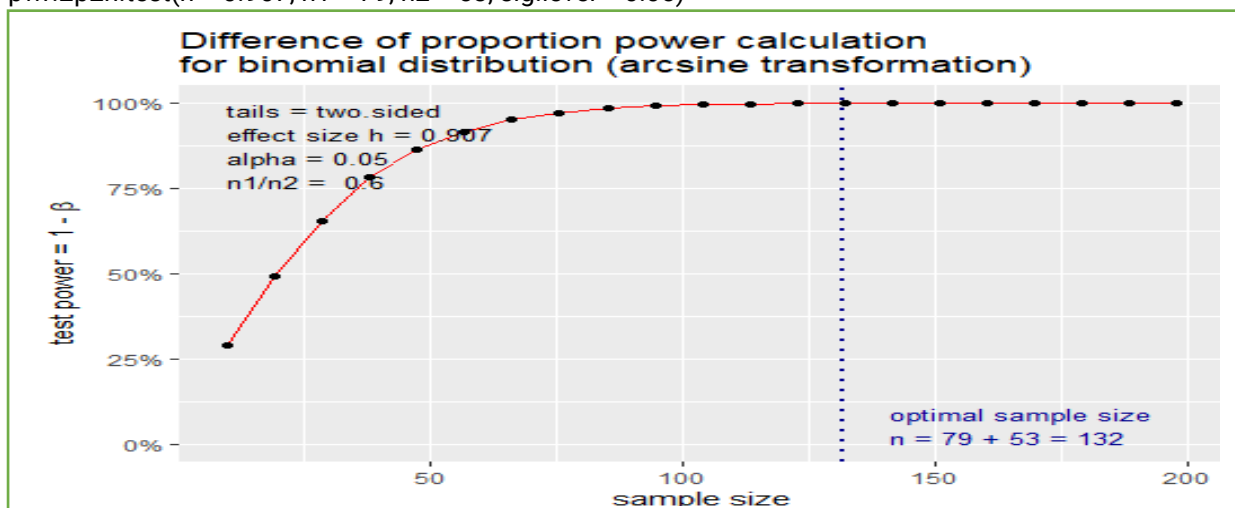
pwr.2p2n.test(h = 0.325, n1 = 79, n2 = 53, sig.level = 0.05)
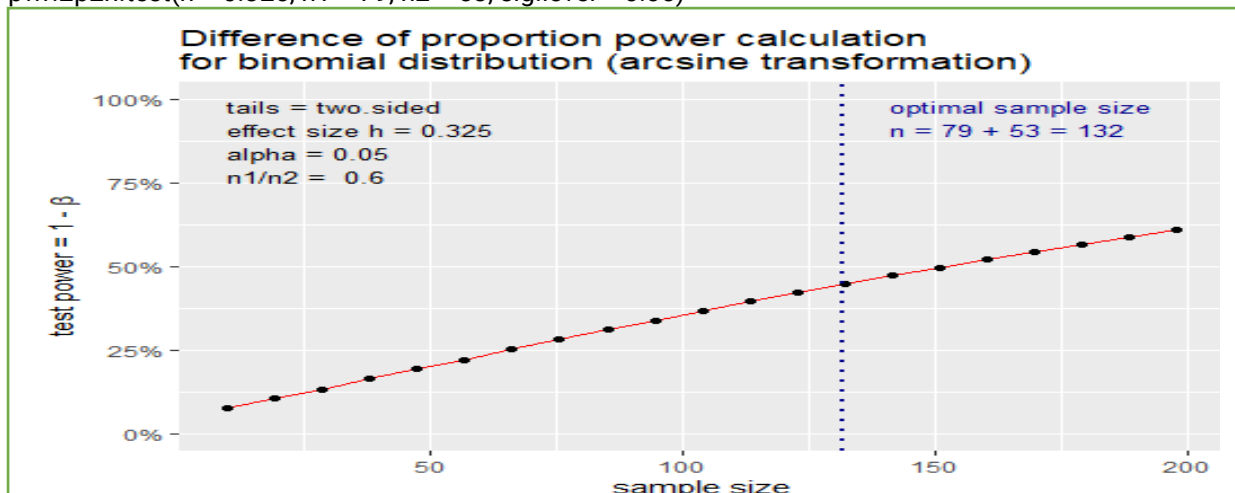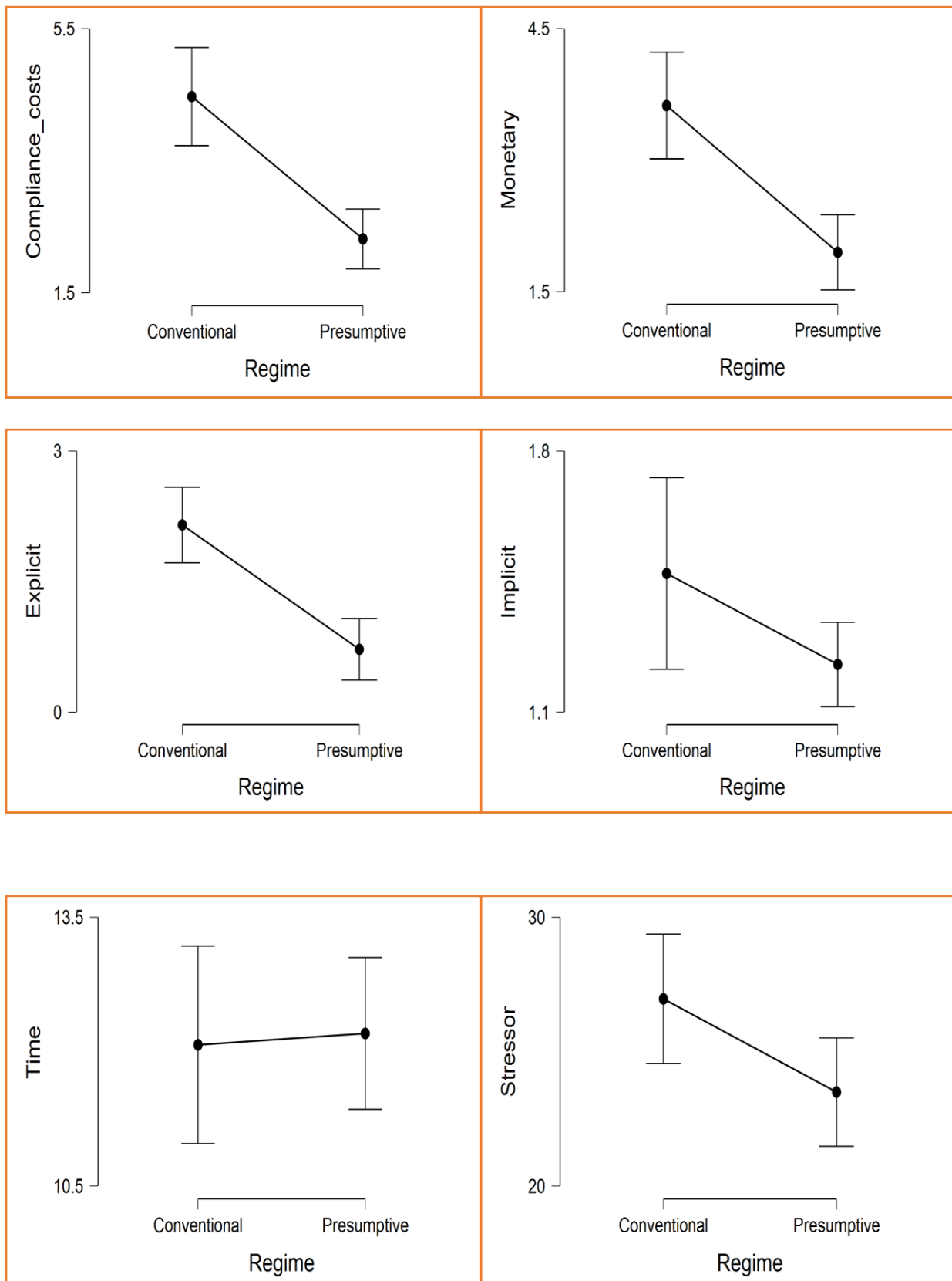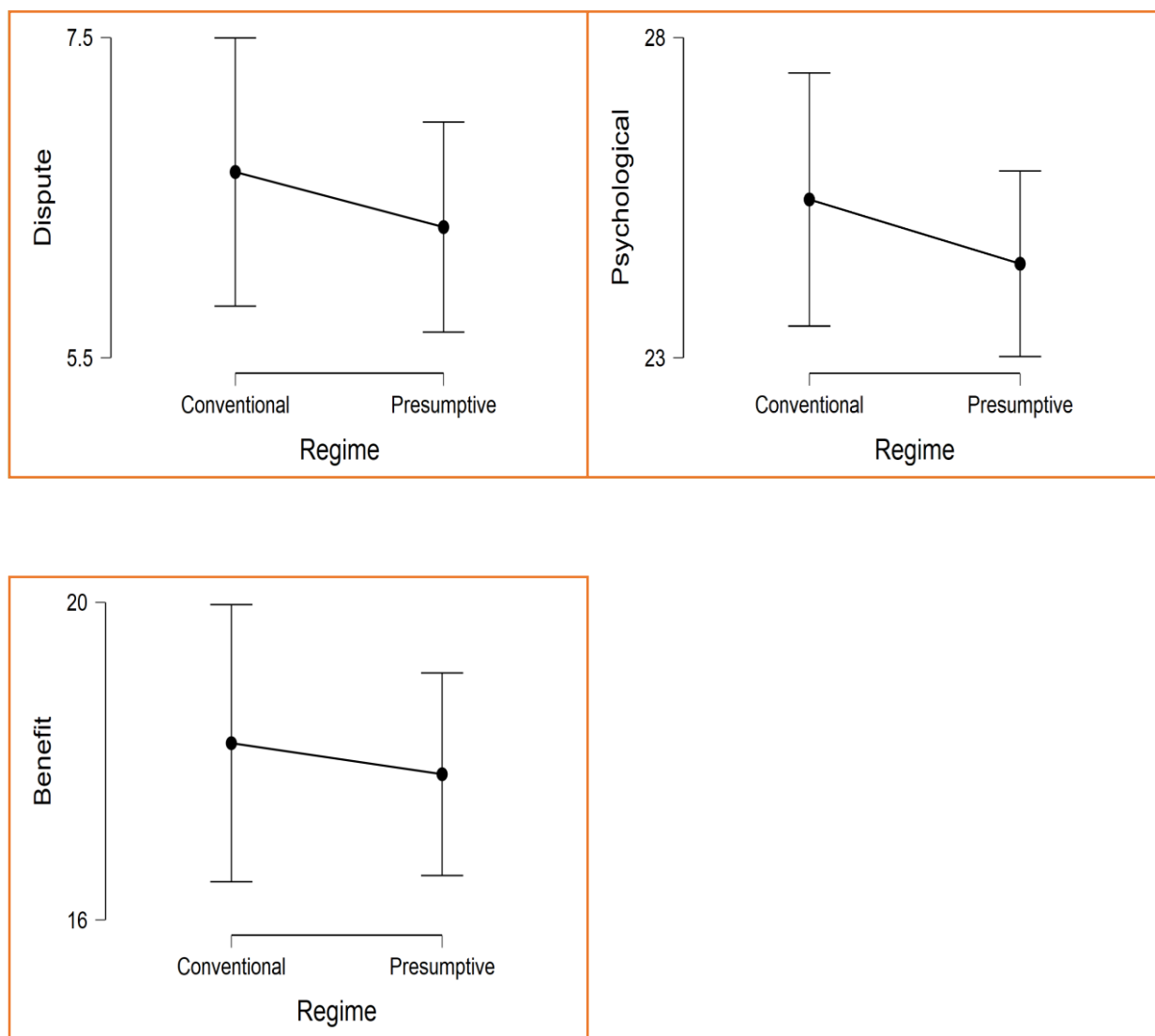
Appendix M: **REGRESSION ANALYSIS**

Implicit costs

Coefficients:

```
          Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.570769  0.434421  1.314  0.1914
Gender     -0.072177  0.116622 -0.619  0.5372
Regime      0.137045  0.126297  1.085  0.2801
Audited     0.151940  0.135918  1.118  0.2658
Adviser     0.092043  0.141924  0.649  0.5179
Age        -0.118804  0.059300 -2.003  0.0474 *
Edu        -0.033392  0.069657 -0.479  0.6325
Turnover    0.116558  0.058792  1.983  0.0497 *
Employees   0.025676  0.057262  0.448  0.6547
Experience  0.026598  0.052581  0.506  0.6139
Complexity -0.004838  0.053130 -0.091  0.9276
Time        0.072626  0.014536  4.996 2.01e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 0.6188 on 120 degrees of freedom
Multiple R-squared: 0.3141,   Adjusted R-squared: 0.2513
F-statistic: 4.996 on 11 and 120 DF, p-value: 2.261e-06

```
Variables Tolerance     VIF
1     Gender 0.9393893 1.064521
2     Regime 0.7567802 1.321388
3    Audited 0.8549859 1.169610
4    Adviser 0.7841498 1.275266
5        Age 0.7837490 1.275919
6        Edu 0.9595461 1.042159
7   Turnover 0.5058438 1.976895
8  Employees 0.5568245 1.795898
9 Experience 0.8240682 1.213492
10 Complexity 0.9243318 1.081863
11      Time 0.9297847 1.075518
```

```
  statistic p.value parameter method alternative
    <dbl>   <dbl>    <dbl> <chr>      <chr>
1    30.5   0.108      22 White's Test greater
```

Appendix M: **REGRESSION ANALYSIS**

Explicit costs

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	1.106554	0.712448	1.553	0.123016	
Gender	-0.333136	0.191259	-1.742	0.084105	.
Regime	0.983946	0.207127	4.750	5.68e-06	***
Audited	1.572968	0.222904	7.057	1.19e-10	***
Adviser	1.704845	0.232755	7.325	3.01e-11	***
Age	-0.339082	0.097252	-3.487	0.000684	***
Edu	-0.145067	0.114237	-1.270	0.206583	
Turnover	0.095073	0.096419	0.986	0.326096	
Employees	-0.018286	0.093909	-0.195	0.845938	
Experience	0.002812	0.086233	0.033	0.974037	
Complexity	-0.113797	0.087133	-1.306	0.194047	
Time	0.094449	0.023839	3.962	0.000127	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.015 on 120 degrees of freedom
Multiple R-squared: 0.6811,   Adjusted R-squared: 0.6518
F-statistic: 23.3 on 11 and 120 DF, p-value: < 2.2e-16

	Variables	Tolerance	VIF
1	Gender	0.9393893	1.064521
2	Regime	0.7567802	1.321388
3	Audited	0.8549859	1.169610
4	Adviser	0.7841498	1.275266
5	Age	0.7837490	1.275919
6	Edu	0.9595461	1.042159
7	Turnover	0.5058438	1.976895
8	Employees	0.5568245	1.795898
9	Experience	0.8240682	1.213492
10	Complexity	0.9243318	1.081863
11	Time	0.9297847	1.075518

	statistic	p.value	parameter	method	alternative
	<dbl>	<dbl>	<dbl>	<chr>	<chr>
1	39.6	0.0121	22	White's Test	greater

Opportunity monetary costs

Coefficients:

```
           Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.67732    0.98534   1.702 0.091293 .
Gender     -0.40531    0.26452  -1.532 0.128088
Regime      1.12099    0.28646   3.913 0.000152 ***
Audited     1.72491    0.30828   5.595 1.41e-07 ***
Adviser     1.79689    0.32191   5.582 1.50e-07 ***
Age        -0.45789    0.13450  -3.404 0.000903 ***
Edu        -0.17846    0.15799  -1.130 0.260924
Turnover    0.21163    0.13335   1.587 0.115139
Employees   0.00739    0.12988   0.057 0.954720
Experience  0.02941    0.11926   0.247 0.805639
Complexity -0.11863    0.12051  -0.984 0.326875
Time        0.16708    0.03297   5.067 1.48e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 1.404 on 120 degrees of freedom
Multiple R-squared: 0.623,   Adjusted R-squared: 0.5885
F-statistic: 18.03 on 11 and 120 DF, p-value: < 2.2e-16

```
Variables Tolerance     VIF
1      Gender 0.9393893 1.064521
2      Regime 0.7567802 1.321388
3     Audited 0.8549859 1.169610
4     Adviser 0.7841498 1.275266
5        Age 0.7837490 1.275919
6        Edu 0.9595461 1.042159
7    Turnover 0.5058438 1.976895
8   Employees 0.5568245 1.795898
9  Experience 0.8240682 1.213492
10 Complexity 0.9243318 1.081863
11       Time 0.9297847 1.075518
```

```
  statistic p.value parameter method alternative
    <dbl>   <dbl>    <dbl> <chr>       <chr>
1    40.3 0.00986       22 White's Test greater
```

Compliance costs

Coefficients:

```
          Estimate Std. Error t value Pr(>|t|)
(Intercept) 0.79554   1.14817   0.693  0.48973
Gender    -0.66688   0.30823  -2.164  0.03248 *
Regime     1.45676   0.33380   4.364 2.72e-05 ***
Audited    1.58159   0.35923   4.403 2.33e-05 ***
Adviser    1.81464   0.37511   4.838 3.94e-06 ***
Age       -0.43537   0.15673  -2.778  0.00635 **
Edu       -0.10555   0.18410  -0.573  0.56751
Turnover   0.30874   0.15539   1.987  0.04921 *
Employees  0.06339   0.15134   0.419  0.67609
Experience -0.08660  0.13897  -0.623  0.53437
Complexity 0.29616   0.14042   2.109  0.03702 *
Time       0.16399   0.03842   4.268 3.96e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 1.635 on 120 degrees of freedom

Multiple R-squared: 0.6195,   Adjusted R-squared: 0.5847

F-statistic: 17.76 on 11 and 120 DF, p-value: < 2.2e-16

```
Variables Tolerance     VIF
1     Gender 0.9393893 1.064521
2     Regime 0.7567802 1.321388
3    Audited 0.8549859 1.169610
4    Adviser 0.7841498 1.275266
5        Age 0.7837490 1.275919
6        Edu 0.9595461 1.042159
7   Turnover 0.5058438 1.976895
8  Employees 0.5568245 1.795898
9 Experience 0.8240682 1.213492
10 Complexity 0.9243318 1.081863
11      Time 0.9297847 1.075518
```

```
  statistic p.value parameter method alternative
     <dbl>  <dbl>    <dbl> <chr>       <chr>
1    26.6   0.229       22 White's Test greater
```

Psychological costs

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	20.62211	4.16184	4.955	2.40e-06	***
Gender	1.43162	1.11726	1.281	0.2025	
Regime	-0.26513	1.20995	-0.219	0.8269	
Audited	1.40569	1.30212	1.080	0.2825	
Adviser	2.12038	1.35966	1.559	0.1215	
Age	-0.05993	0.56811	-0.105	0.9162	
Edu	-1.66897	0.66732	-2.501	0.0137	*
Turnover	0.15819	0.56324	0.281	0.7793	
Employees	0.16278	0.54858	0.297	0.7672	
Experience	-0.04440	0.50374	-0.088	0.9299	
Complexity	2.45437	0.50900	4.822	4.21e-06	***
Time	0.15108	0.13926	1.085	0.2802	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5.928 on 120 degrees of freedom
Multiple R-squared: 0.2935,   Adjusted R-squared: 0.2287
F-statistic: 4.531 on 11 and 120 DF, p-value: 1.006e-05

	Variables	Tolerance	VIF
1	Gender	0.9393893	1.064521
2	Regime	0.7567802	1.321388
3	Audited	0.8549859	1.169610
4	Adviser	0.7841498	1.275266
5	Age	0.7837490	1.275919
6	Edu	0.9595461	1.042159
7	Turnover	0.5058438	1.976895
8	Employees	0.5568245	1.795898
9	Experience	0.8240682	1.213492
10	Complexity	0.9243318	1.081863
11	Time	0.9297847	1.075518

	statistic	p.value	parameter	method	alternative
	<dbl>	<dbl>	<dbl>	<chr>	<chr>
1	28.2	0.168	22	White's Test	greater

Summary of regression analysis – all taxpayers

Factor	Im	Ex	Opp	CC	Psy
Intercept	0.571	1.107	1.677	0.796	20.622
Gender	-0.072	-0.333	-0.405	-0.667*	1.432
Regime	0.137	0.984***	1.121***	1.457***	-0.265
Audited	0.152	1.573***	1.725***	1.582***	1.406
Adviser	0.092	1.705***	1.797***	1.815***	2.120
Age	-0.119*	-0.339***	-0.458***	-0.435**	-0.060
Edu	-0.033	-0.145	-0.178	-0.106	-1.669**
Turnover	0.117*	0.095	0.212	0.309*	0.158
Employees	0.026	-0.018	0.007	0.063	0.163
Experience	0.027	0.003*	0.029	-0.087	-0.044
Complexity	-0.005	-0.114	-0.119	0.296*	2.454***
Time	0.073***	0.094***	0.167***	0.164***	0.151
R-Square:	0.314	0.681	0.623	0.620	0.293
VIF	< 5	< 5	< 5	< 5	< 5
White's test p-value	0.108	0.0121	0.00986	0.229	0.168

Note: * p <.05, ** p <.01, *** p <.001;

VIF less than 5 means the model is free from extreme multicollinearity;

The White's test p-value less than 0.05 indicates that the regression model violates the homoscedasticity assumption.

Regression analysis with interaction – all taxpayers

Implicit costs

lm(formula = Implicit ~ Age + Gender + Regime * Turnover + Experience +
   Edu, data = stat)

Residuals:
   Min   1Q Median   3Q   Max
-1.1140 -0.3085 -0.1699 -0.0061 3.1762

Coefficients:
          Estimate Std. Error t value Pr(>|t|)
(Intercept)   1.657900 0.399818   4.147 6.21e-05 ***
Age   -0.089043 0.062135 -1.433   0.154
Gender   -0.124339 0.124698 -0.997   0.321
Regime   -0.364925 0.248583 -1.468   0.145
Turnover   0.006056 0.093755   0.065   0.949
Experience   0.010761 0.054884   0.196   0.845
Edu   -0.027454 0.074589 -0.368   0.713
Regime:Turnover 0.251945 0.110264   2.285   0.024 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6637 on 124 degrees of freedom
Multiple R-squared: 0.1848,   Adjusted R-squared: 0.1387
F-statistic: 4.015 on 7 and 124 DF, p-value: 0.0005403
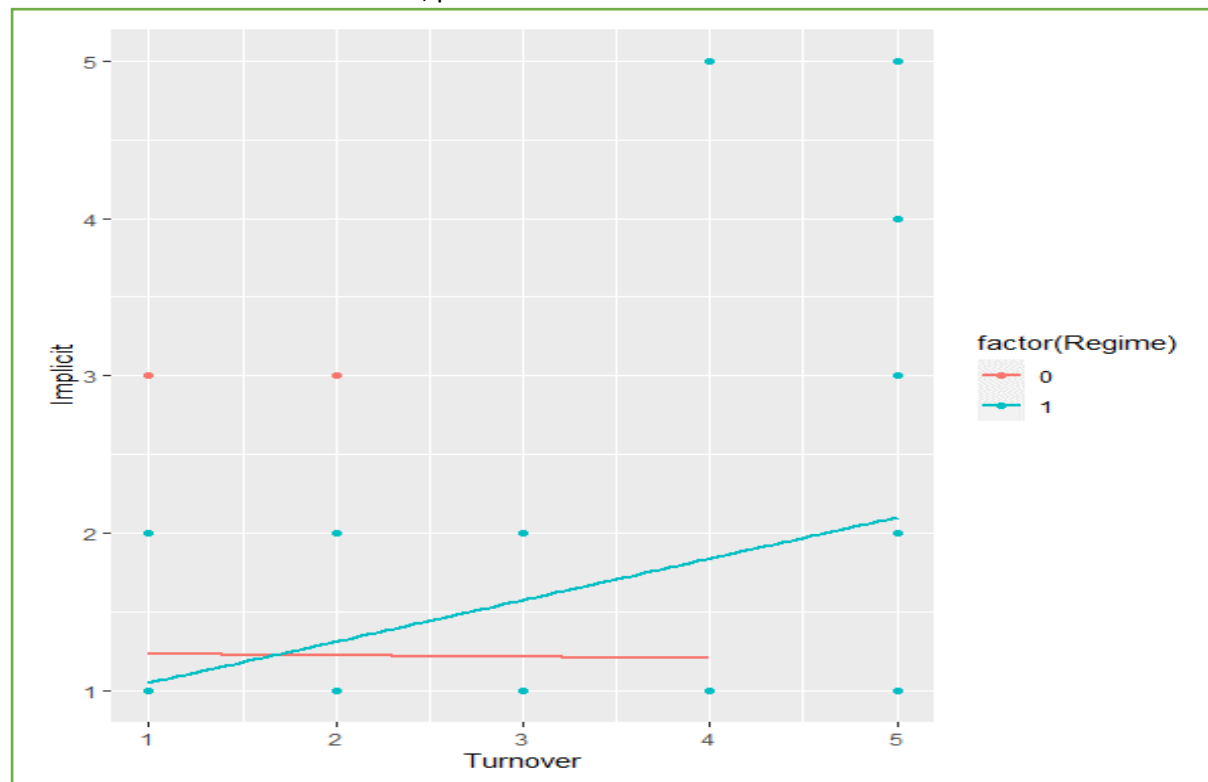
Explicit costs

lm(formula = Explicit ~ Age + Gender + Regime * Turnover + Experience +
    Edu, data = stat)

Residuals:
    Min   1Q Median   3Q   Max
-2.0915 -0.7958 -0.3547 0.2093 8.2034

Coefficients:
          Estimate Std. Error t value Pr(>|t|)
(Intercept)   2.9396   0.8961 3.280 0.00135 **
Age   -0.4367   0.1393 -3.136 0.00214 **
Gender   -0.3468   0.2795 -1.241 0.21699
Regime   1.5677   0.5572 2.814 0.00570 **
Turnover   0.4078   0.2101 1.940 0.05459 .
Experience   -0.0437   0.1230 -0.355 0.72304
Edu   -0.2731   0.1672 -1.634 0.10488
Regime:Turnover -0.1065   0.2471 -0.431 0.66735

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.488 on 124 degrees of freedom
Multiple R-squared: 0.2919,   Adjusted R-squared: 0.2519
F-statistic: 7.303 on 7 and 124 DF, p-value: 2.515e-07
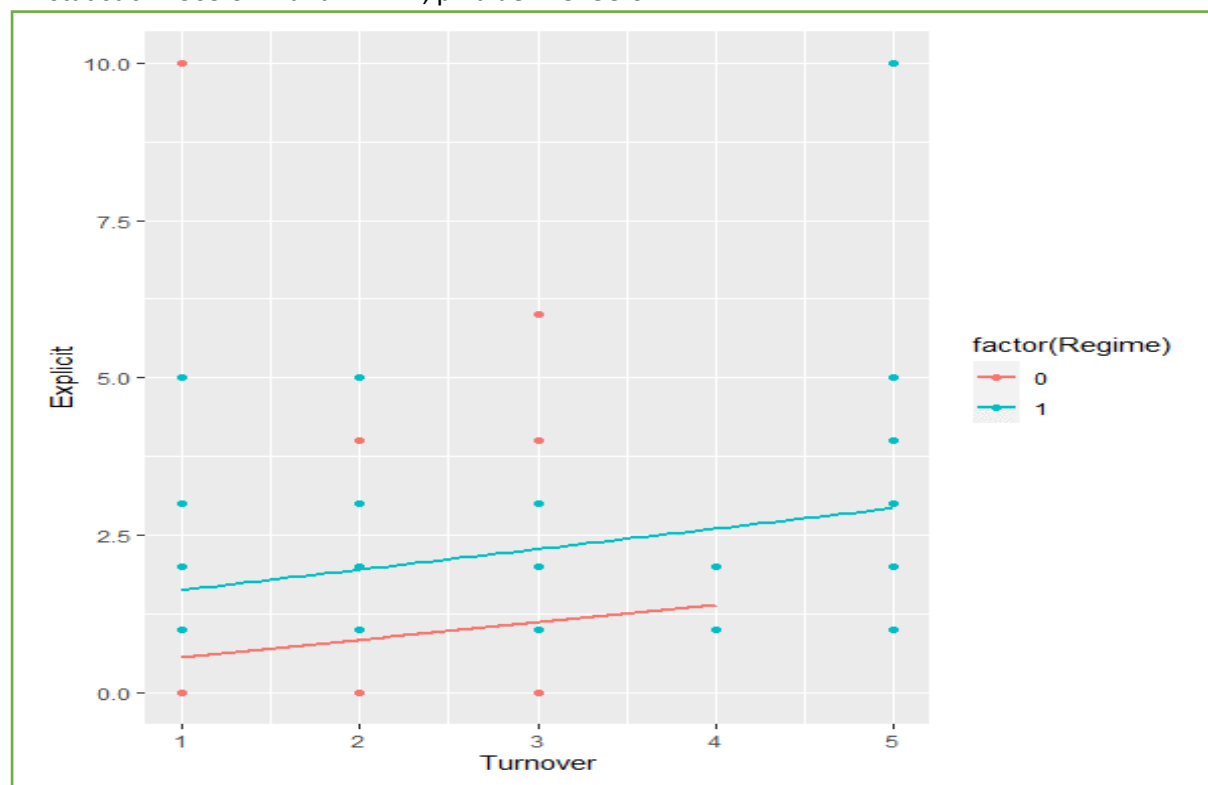
Opportunity costs

lm(formula = Monetary ~ Age + Gender + Regime * Turnover + Experience +
    Edu, data = stat)

Residuals:
    Min   1Q Median   3Q   Max
-3.0933 -1.0753 -0.4973 0.4841 9.7401

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)   4.59752   1.14206   4.026 9.82e-05 ***
Age   -0.52577   0.17748 -2.962 0.00366 **
Gender   -0.47116   0.35619 -1.323 0.18835
Regime   1.20281   0.71006   1.694 0.09278 .
Turnover   0.41383   0.26780   1.545 0.12483
Experience   -0.03293   0.15677 -0.210 0.83395
Edu   -0.30056   0.21306 -1.411 0.16083
Regime:Turnover 0.14547   0.31496   0.462 0.64498

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.896 on 124 degrees of freedom
Multiple R-squared: 0.2894,   Adjusted R-squared: 0.2492
F-statistic: 7.213 on 7 and 124 DF, p-value: 3.077e-07
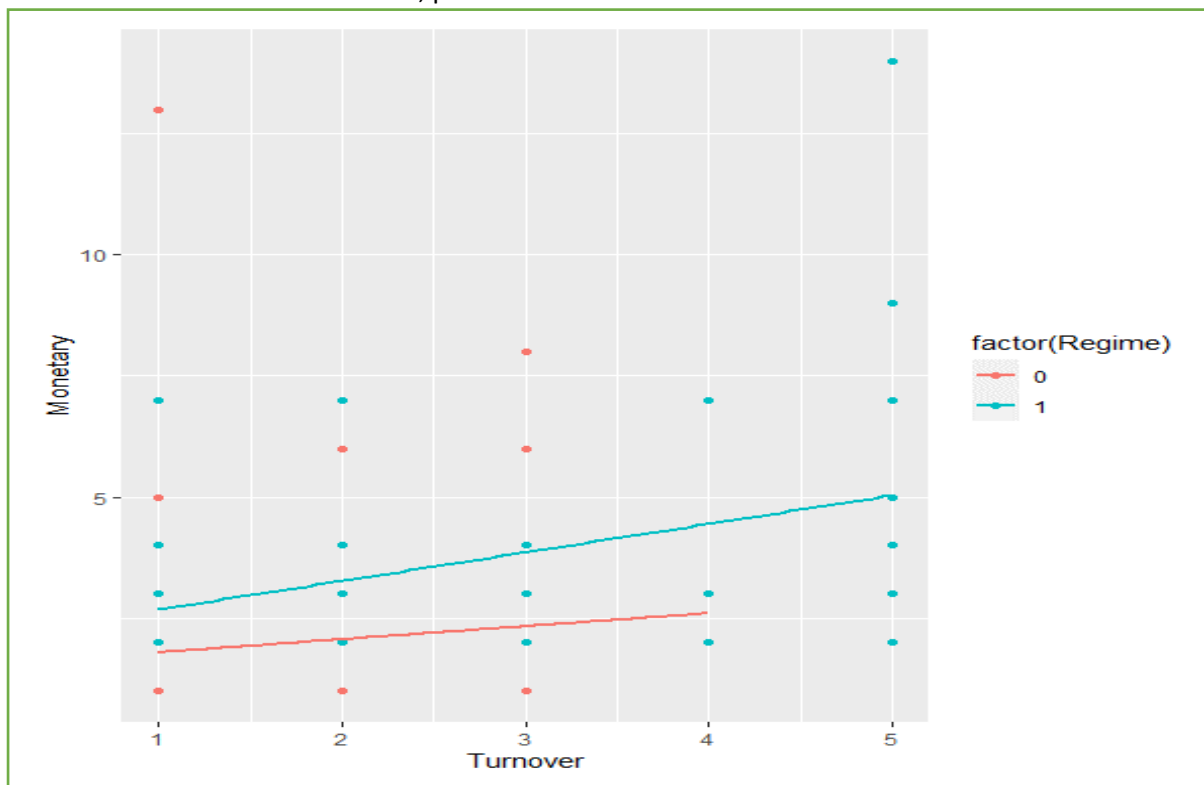
Tax compliance costs

lm(formula = Compliance_costs ~ Age + Gender + Regime * Turnover +
  Experience + Edu, data = stat)

Residuals:
   Min   1Q Median   3Q   Max
-3.2299 -1.3799 -0.5948 1.0876 6.7583

Coefficients:
          Estimate Std. Error t value Pr(>|t|)
(Intercept)   4.6993   1.2789   3.674 0.000353 ***
Age   -0.5638   0.1988 -2.837 0.005326 **
Gender   -0.6923   0.3989 -1.736 0.085100 .
Regime   2.1618   0.7952   2.719 0.007494 **
Turnover   0.7975   0.2999   2.659 0.008864 **
Experience   -0.1070   0.1756 -0.609 0.543371
Edu   -0.2727   0.2386 -1.143 0.255329
Regime:Turnover -0.1647   0.3527 -0.467 0.641386

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.123 on 124 degrees of freedom
Multiple R-squared: 0.3376,   Adjusted R-squared: 0.3002
F-statistic: 9.028 on 7 and 124 DF, p-value: 5.678e-09
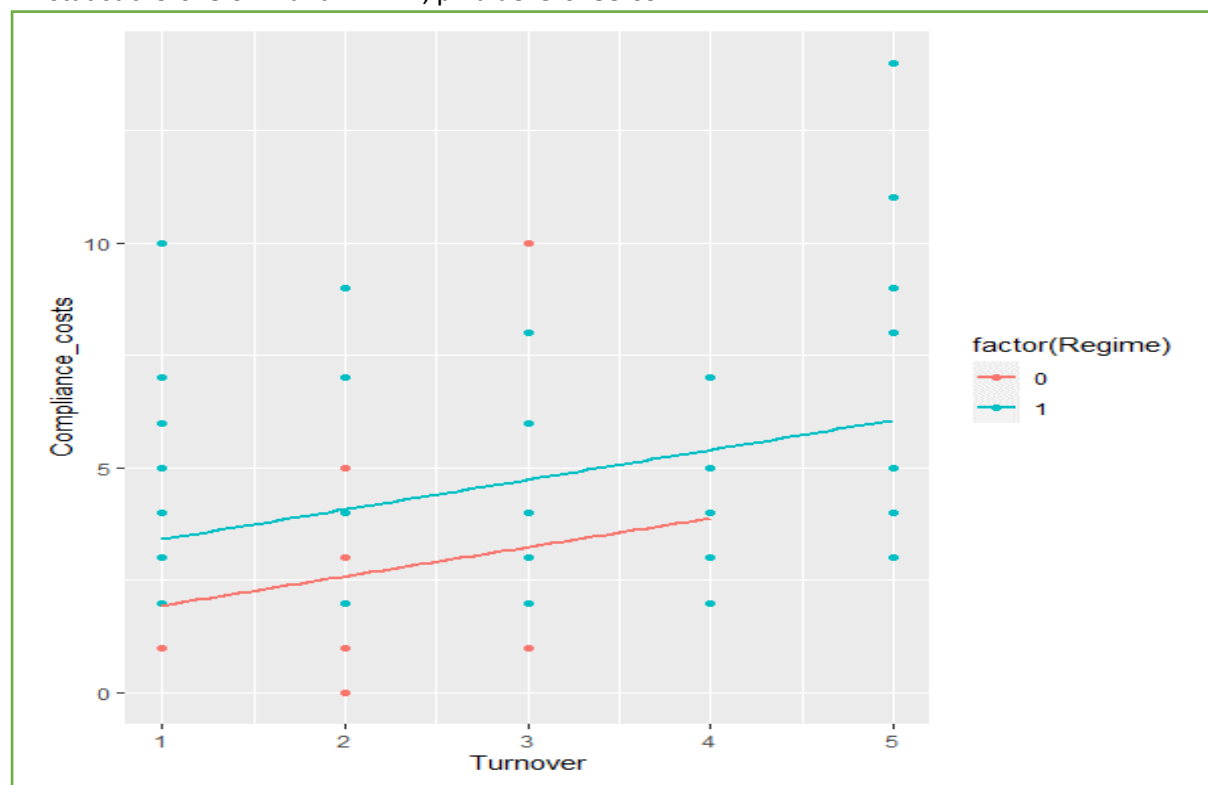
Psychological costs

lm(formula = Psychological ~ Age + Gender + Turnover + Experience +
  Edu * Complexity, data = stat)

Residuals:
```
   Min     1Q  Median     3Q     Max
-15.2756  -4.2612   0.6709   4.7685  11.9846
```

Coefficients:
```
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   23.53299   7.31390   3.218  0.00165 **
Age           -0.12467   0.55015  -0.227  0.82109
Gender         1.41944   1.11217   1.276  0.20424
Turnover       0.57884   0.41388   1.399  0.16444
Experience    -0.06989   0.49479  -0.141  0.88791
Edu           -1.95151   1.97641  -0.987  0.32537
Complexity     2.48585   2.34043   1.062  0.29024
Edu:Complexity 0.05638   0.64921   0.087  0.93094
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 5.976 on 124 degrees of freedom
Multiple R-squared: 0.2581,   Adjusted R-squared: 0.2163
F-statistic: 6.164 on 7 and 124 DF, p-value: 3.384e-06
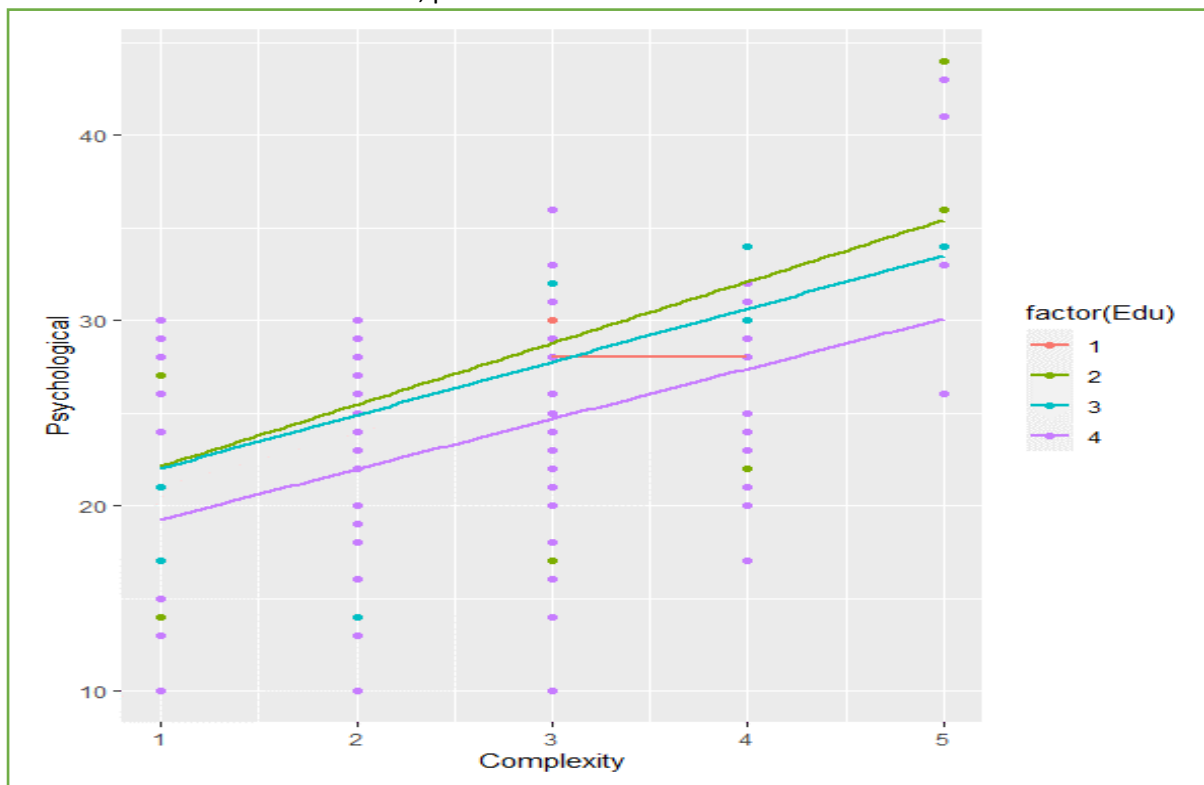
Psychological costs

lm(formula = Psychological ~ Age + Gender + Regime * Turnover +
    Experience + Edu, data = stat)

Residuals:
   Min   1Q Median   3Q   Max
-15.212 -4.804 1.053 4.273 15.973

Coefficients:
         Estimate Std. Error t value Pr(>|t|)
(Intercept)   30.1556   3.9834 7.570 7.37e-12 ***
Age   -0.4455   0.6191 -0.720 0.47310
Gender   1.5488   1.2424 1.247 0.21489
Regime   2.3325   2.4766 0.942 0.34812
Turnover   1.5074   0.9341 1.614 0.10913
Experience   0.1236   0.5468 0.226 0.82153
Edu   -2.0480   0.7431 -2.756 0.00674 **
Regime:Turnover -1.0196   1.0986 -0.928 0.35514

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 6.612 on 124 degrees of freedom
Multiple R-squared: 0.09176,   Adjusted R-squared: 0.04049
F-statistic: 1.79 on 7 and 124 DF, p-value: 0.09505
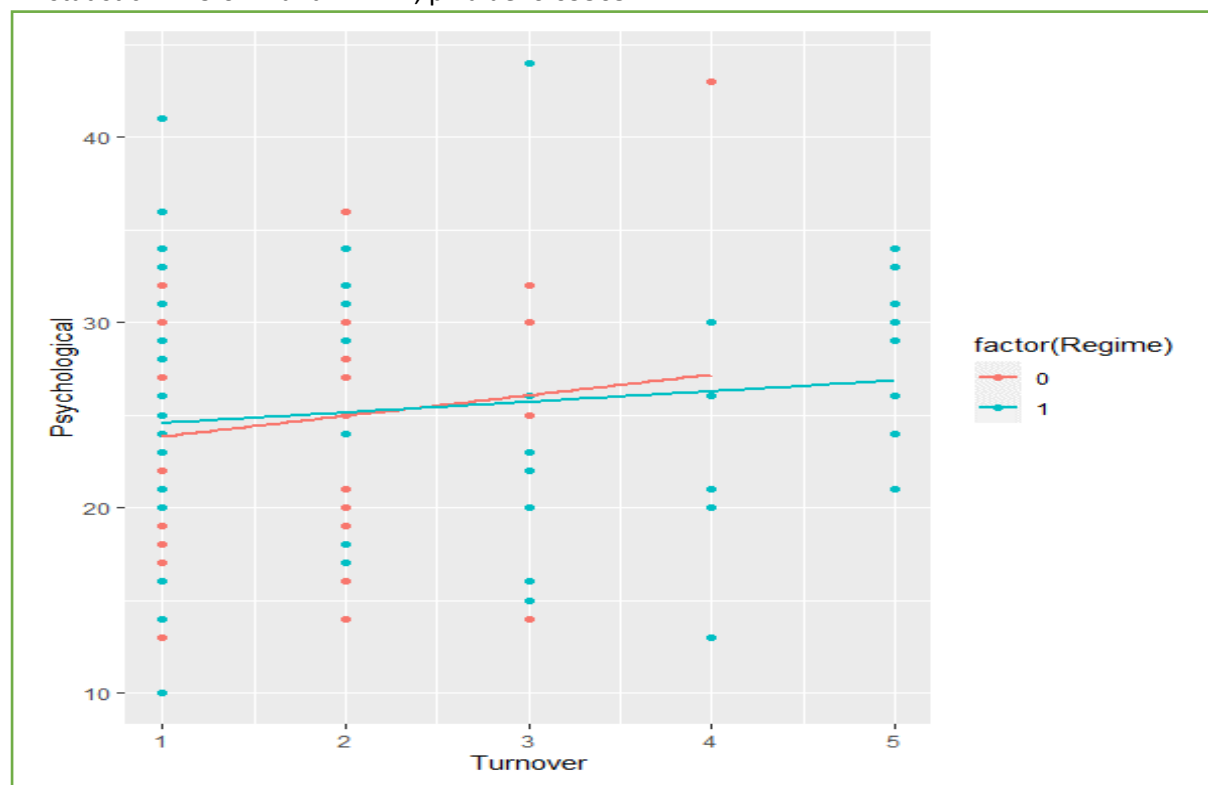
Summary of multiple linear regression analysis – influence of the hypothesised factors on the tax compliance costs

Costs / Factor	Implicit			Explicit			Opportunity			Compliance_costs			Psychological		
	Pre	Con	All	Pre	Con	All	Pre	Con	All	Pre	Con	All	Pre	Con	All
Intercept	1.891***	0.838	1.396***	3.13**	3.51*	2.051*	5.02***	4.348	3.448**	4.346**	6.482*	3.469**	26.068***	40.672***	30.003***
Gender	0.138	-0.68**	-0.093	-0.374	-0.511	-0.165	-0.236	1.191*	-0.258	-0.434	-1.3	-0.45	1.479	1.984	1.494
Age	-0.114	-0.095	-0.095	-0.398*	-0.417	-0.294*	-0.512*	-0.512	-0.389*	-0.494*	-0.62	-0.364	-0.309	-0.773	-0.267
Edu	-0.158*	0.267	-0.041	-0.49*	0.052	-0.2	0.647**	0.319	-0.241	-0.411	-0.008	-0.173	-1.438	-3.297**	-1.967**
Turnover	0.021	0.267*	0.176**	0.298	0.423	0.412**	0.319	0.69*	0.588**	0.682*	0.576	0.773***	1.105	1.145	0.628
Employees	0.042	-0.001	0.045	0.283	-0.154	0.171	0.325	-0.155	0.216	0.336	0.086	0.255	0.7	-1.011	0.312
Experience	0.048	-0.101	0.003	-0.077	-0.055	-0.033	-0.029	-0.156	-0.03	-0.162	-0.171	-0.096	0.223	-0.163	0.104
R square	0.127	0.342	0.149	0.194	0.185	0.179	0.185	0.285	0.209	0.213	0.233	0.244	0.082	0.15	0.087
VIF	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
White's test p-value	0.93	0.15	0.03	0.13	0.30	0.02	0.14	0.25	0.01	0.05	0.74	0.54	0.19	0.05	0.69

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

VIF less than 5 means the model is free from extreme multicollinearity

The White's test p-value less than 0.05 indicates that the regression model violates the homoscedasticity assumption

Appendix N: **LAVAAN SYNTAX**

Hypothesised framework
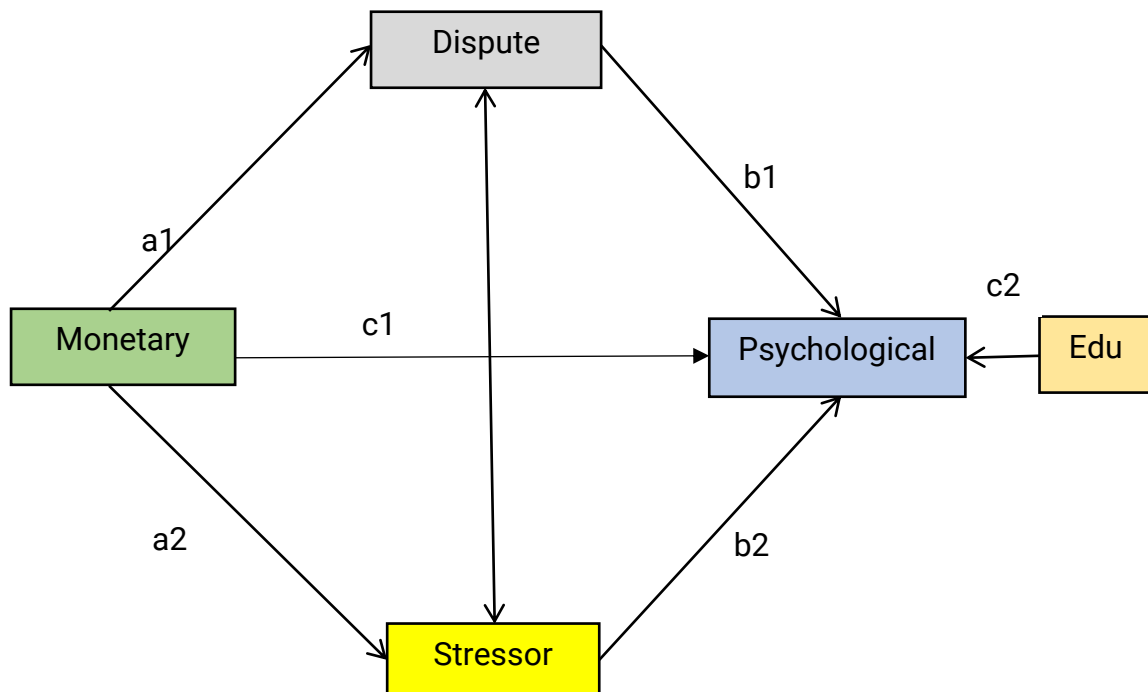
dependent regression

Psychological ~ b1*Dispute + b2*Stressor + c1*Monetary + c2*Edu

mediator regression

Dispute ~ a1*Monetary

Stressor ~ a2*Monetary

mediator residual covariance

Dispute ~~ Stressor

effect decomposition

y1 ~ x1

Ind_1 := a1*b1

Ind_2 := a2*b2

Tot_ind := Ind_1 + Ind_2

Tot_effects := Tot_ind + c1

Parameter Estimates

Parameter			Label	Estimate	Std. Error	z-value	P	CI lower	CI upper
Psychological	~	Dispute	b1	0.532	0.166	3.197	0.001	0.206	0.862
Psychological	~	Stressor	b2	0.396	0.063	6.262	0.000	0.269	0.515
Psychological	~	Monetary	c1	-0.089	0.207	-0.429	0.668	-0.521	0.306
Psychological	~	Edu	c2	-1.458	0.480	-3.037	0.002	-2.441	-0.526
Dispute	~	Monetary	a1	0.620	0.140	4.436	0.000	0.431	0.977
Stressor	~	Monetary	a2	1.321	0.341	3.869	0.000	0.771	2.131
Dispute	~~	Stressor		9.192	1.966	4.675	0.000	5.197	12.910
Ind_1	:=	a1*b1		0.330	0.135	2.449	0.014	0.118	0.649
Ind_2	:=	a2*b2		0.523	0.162	3.234	0.001	0.270	0.908
Tot_Ind	:=	Ind_1 + Ind_2		0.853	0.227	3.753	0.000	0.515	1.404
Tot_Effects	:=	Tot_Ind + c1		0.764	0.229	3.332	0.001	0.395	1.309

Note. Delta method standard errors, bias-corrected percentile (5000) bootstrap confidence intervals, ML estimator.

Proportion of indirect effects = Tot_Ind : Tot_Effects

= 0.853 : 0.764 = 112 per cent

Fit summary

Fit index	Reference	Threshold value	Coefficient value
P-value	Kline (2016)	≥ 0.05	0.692
CFI	Bentler (1990)	> 0.95	1.000
GFI	Jöreskog & Sörbom (1981)	> 0.95	0.996
NFI	Bentler & Bonett (1980)	> 0.95	0.995
RMSEA	Steiger (1990), Steiger & Lind (1980)	< 0.05	0.000
SRMR	Jöreskog & Sörbom (1981)	< 0.05	0.020

Source: calculated from survey data and adapted from "Testing structural equation models or detection of misspecifications?" (Saris, Satorra, & Van der Veld, 2009, p. 582).

Appendix O: **PEARSON'S CORRELATIONS**

	Sex	Reg	Aud	Adv	Age	Edu	Ato	Rgn	Emp	Exp	Cmp	TCC	Mon	Time	Str	Dis	Psy	Bft
Sex	—																	
Reg	0.115	—																
Aud	0.069	0.114	—															
Adv	-0.006	0.294***	0.216*	—														
Age	-0.077	0.214*	-0.177*	0.116	—													
Edu	0.01	0.068	-0.01	-0.077	-0.124	—												
Ato	-0.045	0.389***	0.099	0.346***	0.166	0.004	—											
Rgn	0.272**	0.05	-0.018	-0.085	-0.017	0.005	-0.104	—										
Emp	0.01	0.238**	0.147	0.33***	-0.004	0.045	0.629***	-0.123	—									
Exp	-0.152	0.134	-0.122	0.129	0.318***	0.007	0.137	-0.1	0.163	—								
Cmp	0.008	0.077	0.201*	0.117	-0.019	-0.036	0.11	-0.184*	0.064	0.076	—							
TCC	-0.084	0.418***	0.456***	0.512***	-0.083	-0.03	0.447***	-0.143	0.365***	-0.003	0.287***	—						
Mon	-0.055	0.376***	0.496***	0.528***	-0.116	-0.058	0.396***	-0.11	0.337***	0.002	0.13	0.902***	—					
Time	-0.083	-0.016	0.065	0.024	0.08	-0.031	0.17	-0.13	0.107	-0.03	0.127	0.314***	0.327***	—				
Str	0.069	0.189*	0.206*	0.198*	-0.136	-0.085	0.181*	-0.068	0.098	-0.019	0.607***	0.513***	0.32***	0.245**	—			
Dis	-0.01	0.057	0.475***	0.164	-0.124	-0.031	0.194*	-0.01	0.106	-0.058	0.36***	0.517***	0.457***	0.395***	0.493***	—		
Psy	0.099	0.073	0.219*	0.229**	0.005	-0.222*	0.147	-0.141	0.128	0.013	0.441***	0.428***	0.258**	0.15	0.65***	0.487***	—	
Bft	0.095	0.032	0.317***	0.093	-0.175*	0.168	0.183*	-0.068	0.345***	0.104	-0.005	0.244**	0.292***	0.273**	-0.007	0.221*	0.016	—

* p < .05, ** p < .01, *** p < .001

Pearson's r heatmap

	Gender	Age	Education	Turnover	Employees	Tax_experience	Monetary_costs	Tax_stressors	Tax_disputes	Psychological_costs
Gender		-0.077	0.01	-0.045	0.01	-0.152	-0.055	0.069	-0.01	0.099
Age	-0.077		-0.124	0.166	-0.004	0.318***	-0.116	-0.136	-0.124	0.005
Education	0.01	-0.124		0.004	0.045	0.007	-0.058	-0.085	-0.031	-0.222*
Turnover	-0.045	0.166	0.004		0.629***	0.137	0.396***	0.181*	0.194*	0.147
Employees	0.01	-0.004	0.045	0.629***		0.163	0.337***	0.098	0.106	0.128
Tax_experience	-0.152	0.318***	0.007	0.137	0.163		0.002	-0.019	-0.058	0.013
Monetary_costs	-0.055	-0.116	-0.058	0.396***	0.337***	0.002		0.32***	0.457***	0.258**
Tax_stressors	0.069	-0.136	-0.085	0.181*	0.098	-0.019	0.32***		0.493***	0.65***
Tax_disputes	-0.01	-0.124	-0.031	0.194*	0.106	-0.058	0.457***	0.493***		0.487***
Psychological_costs	0.099	0.005	-0.222*	0.147	0.128	0.013	0.258**	0.65***	0.487***	

Appendix P: **HISTOGRAM**

Compliance Costs and Monetary Costs
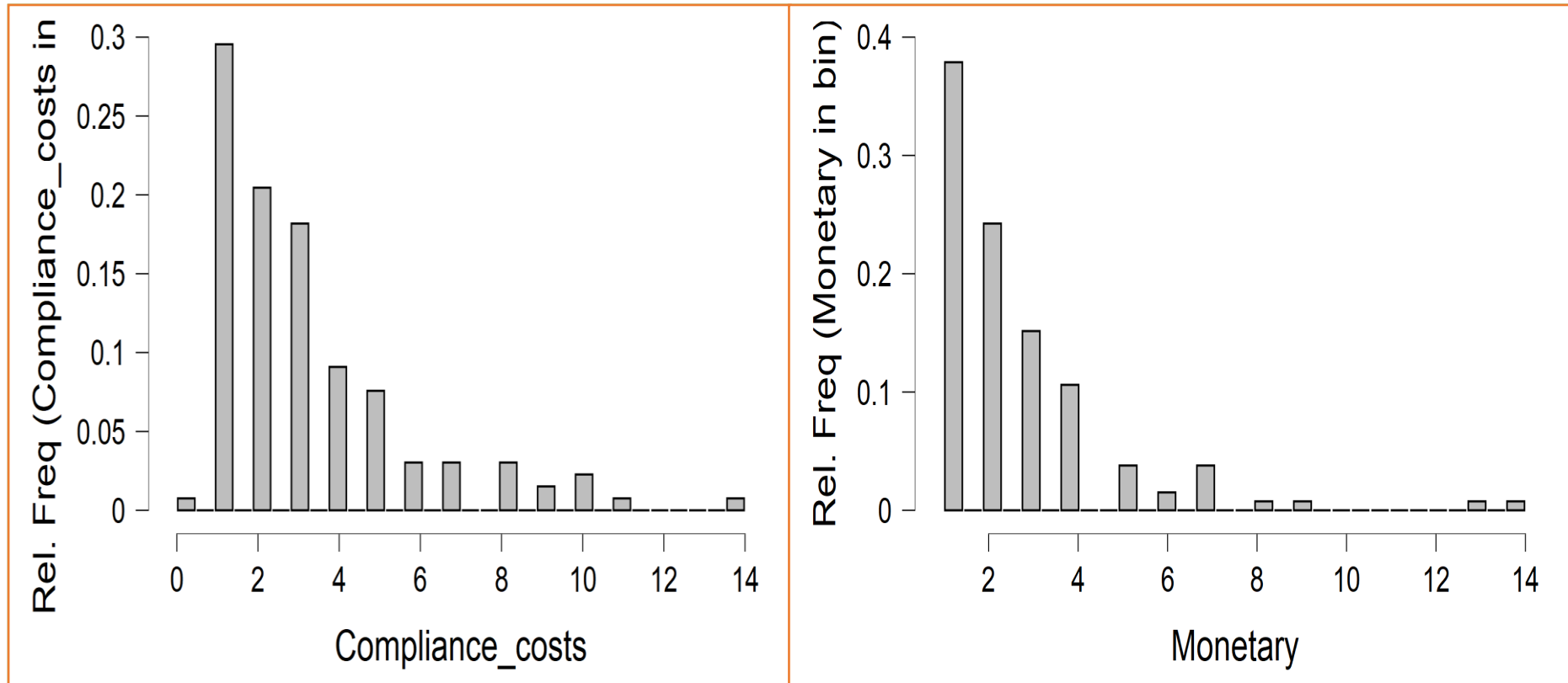
Total Time and Tax Disputes
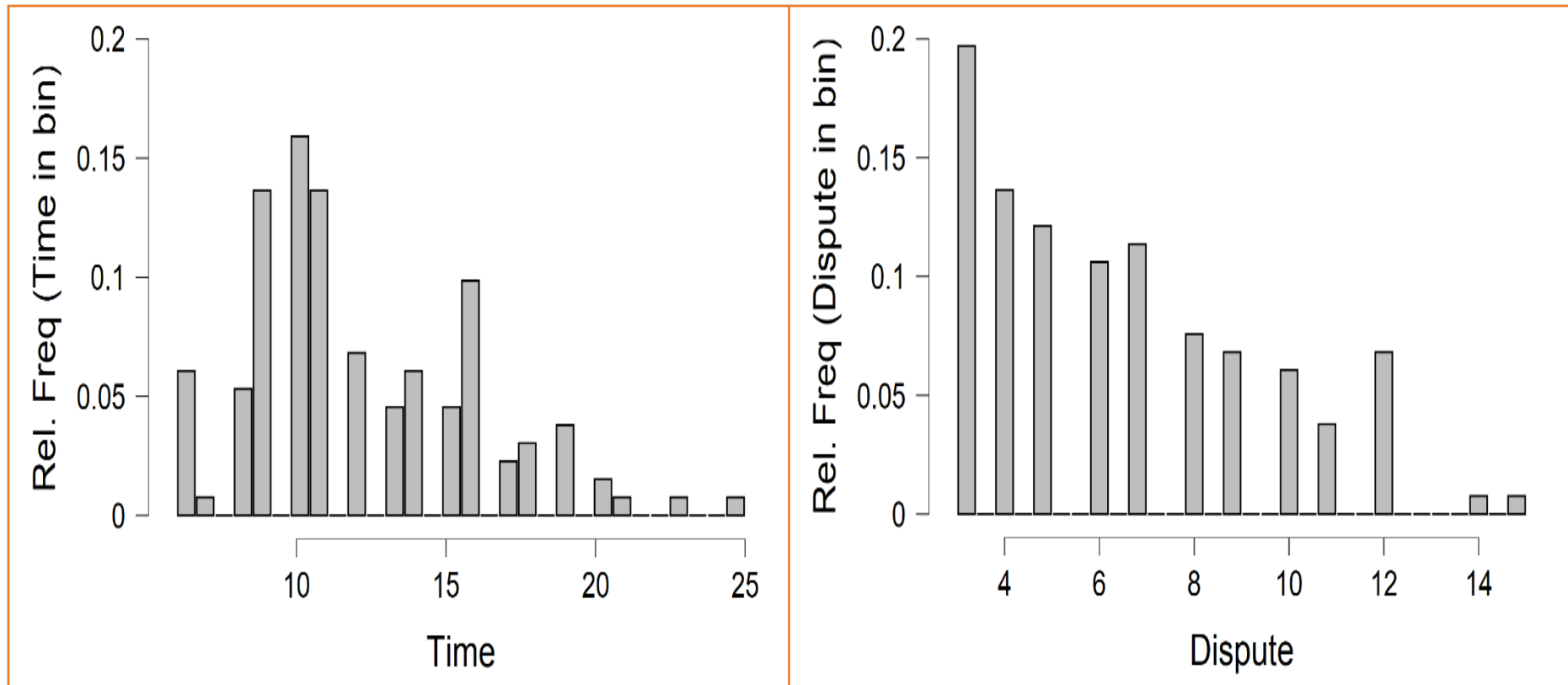
Tax Stressors and Psychological Costs
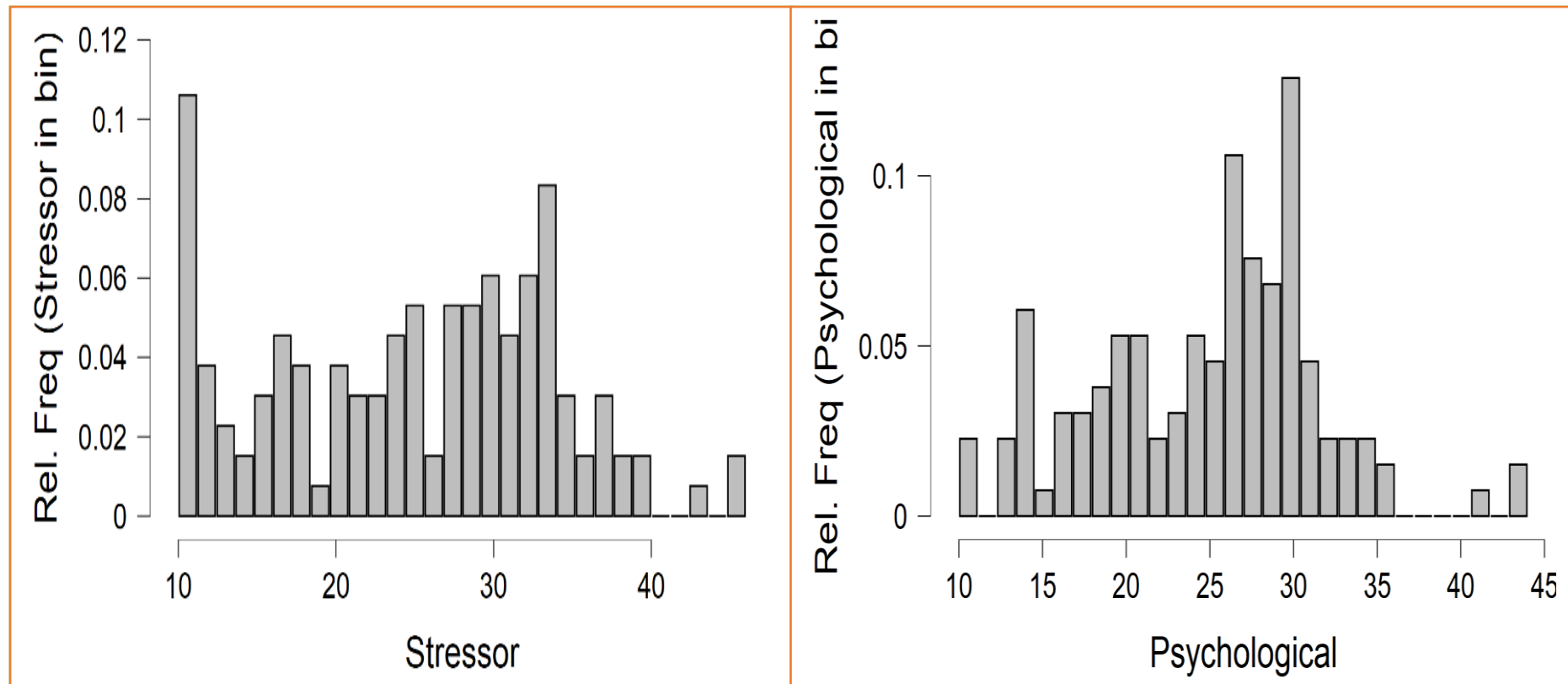
Appendix Q: **Q-Q PLOTS**

Monetary Costs
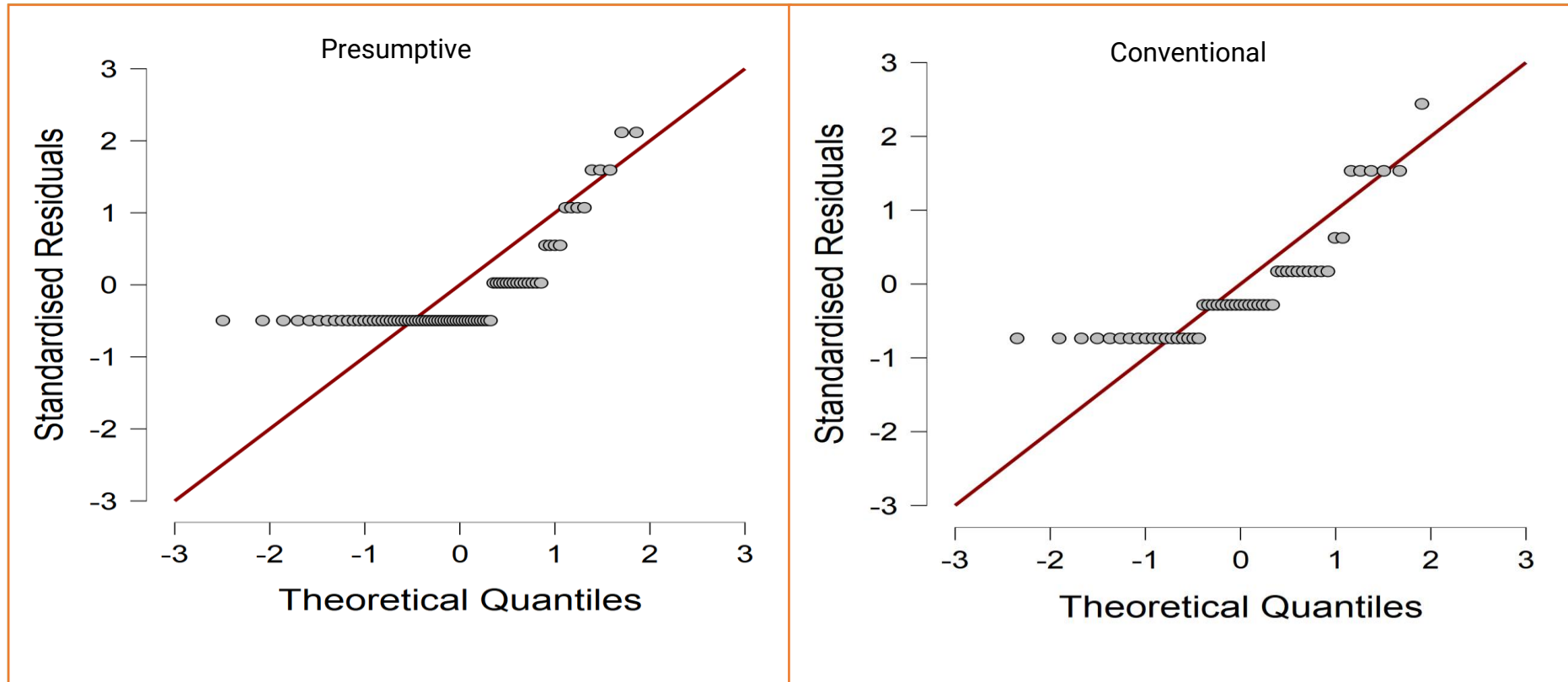
Tax Stressors
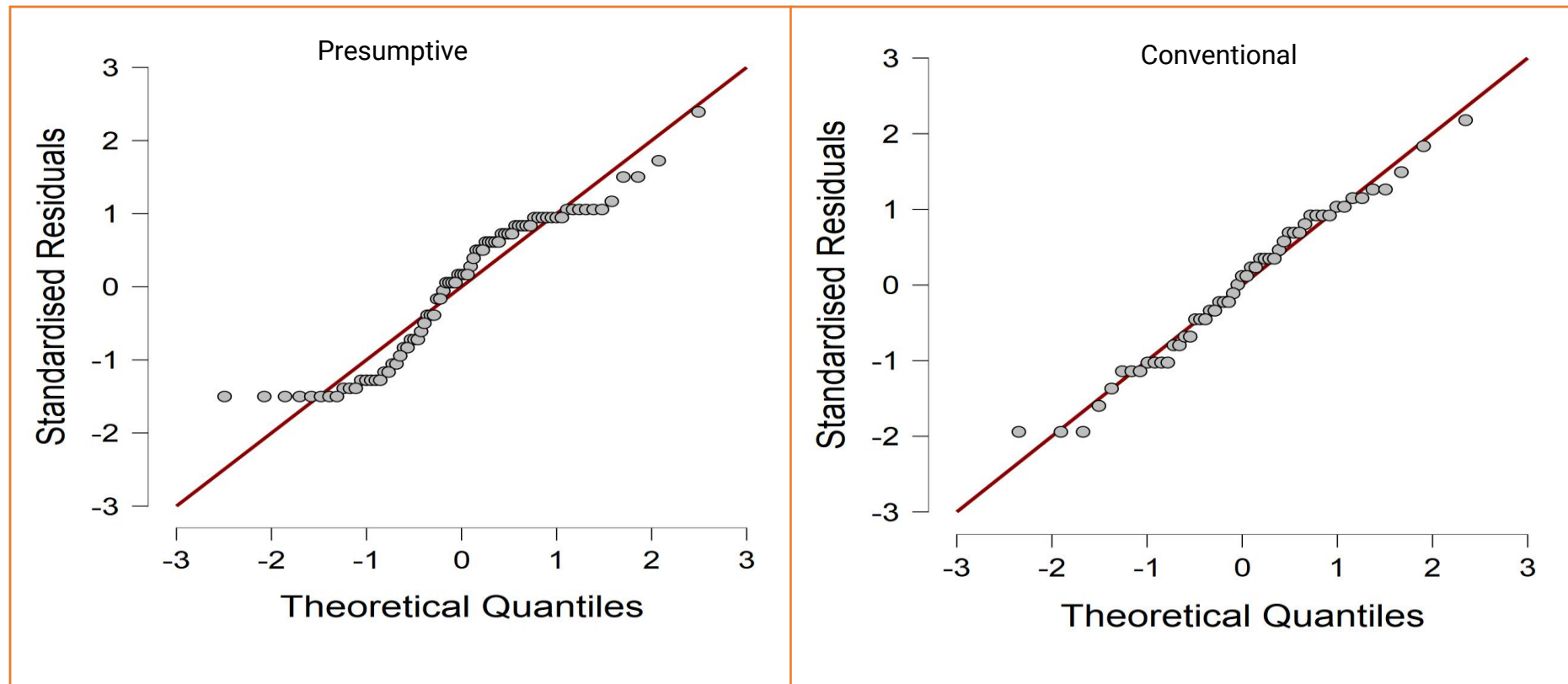
Tax Disputes
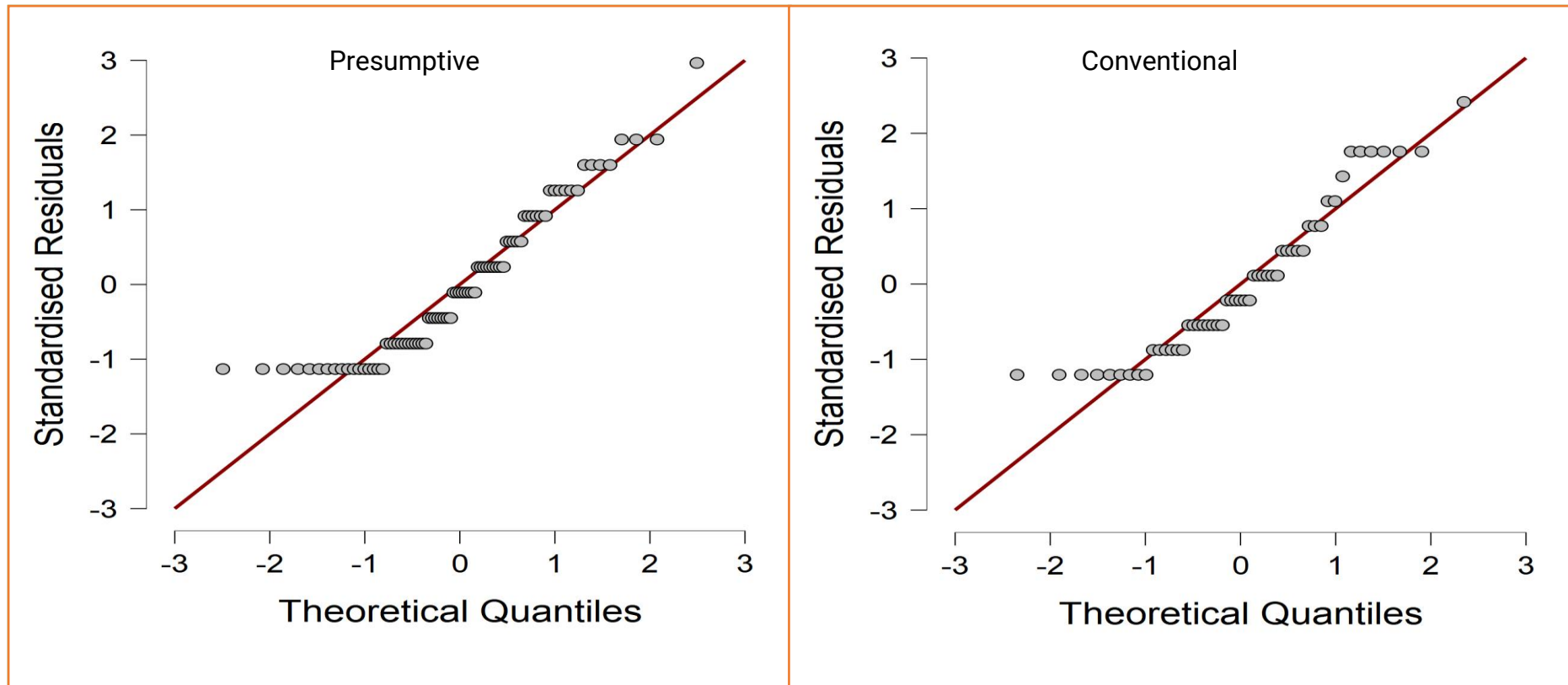
Psychological Costs
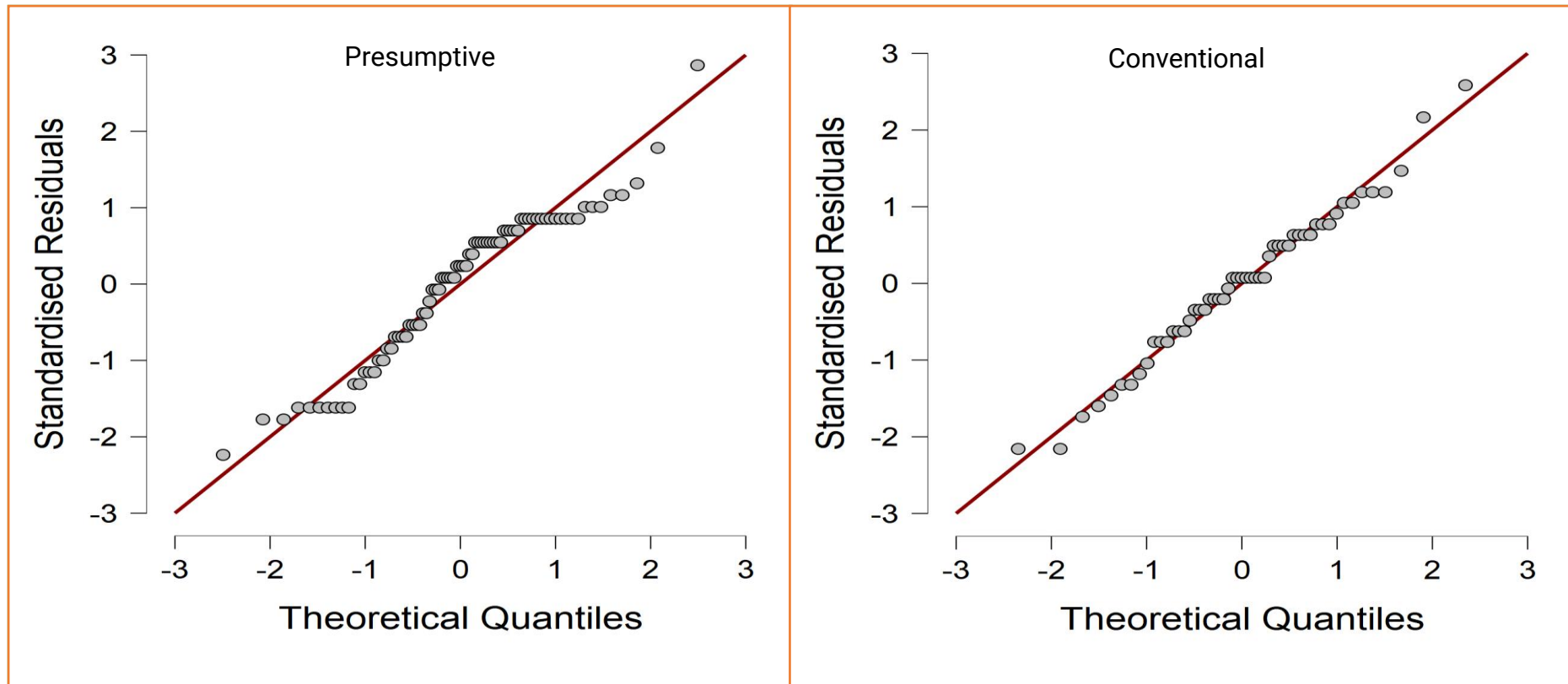
Total Time
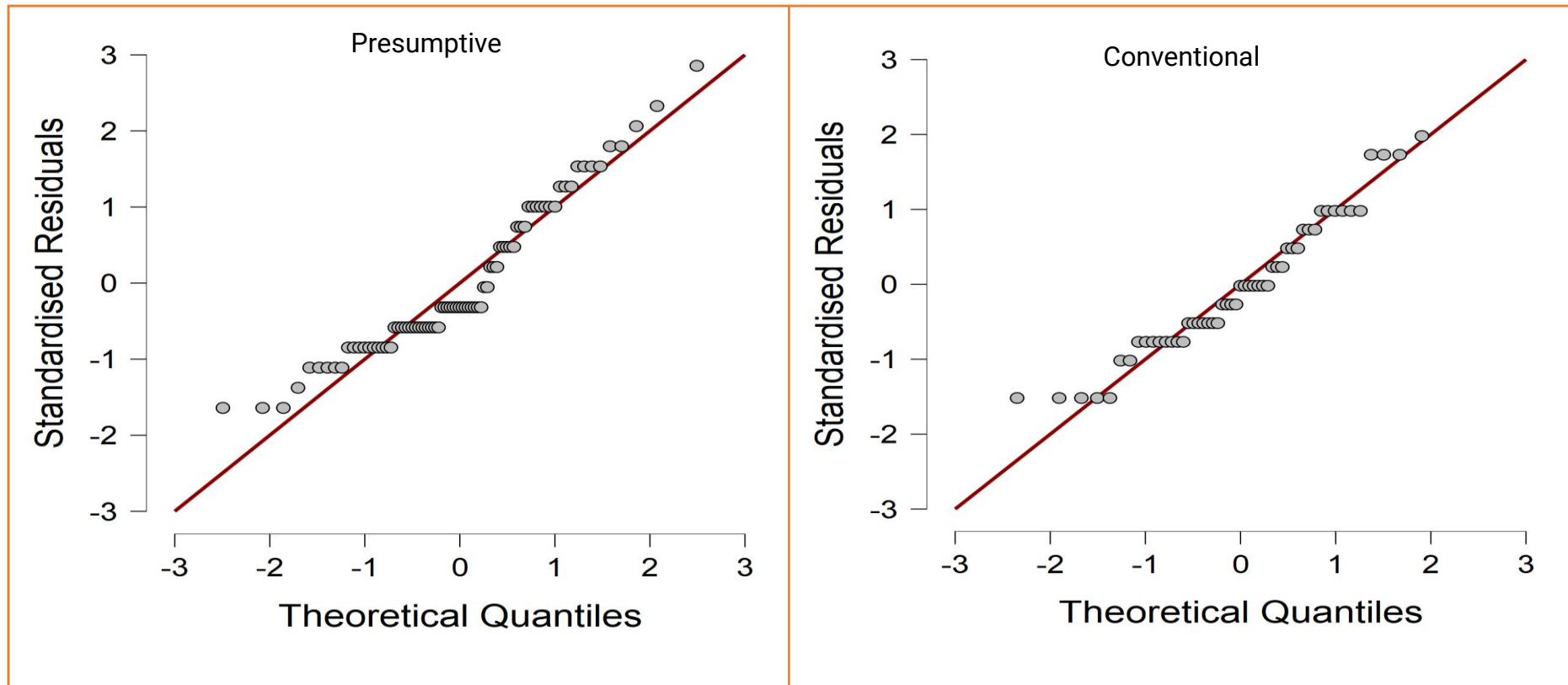
Appendix R: **SPEARMAN CORRELATION ANALYSIS**

Implicit costs

Gender	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.17	79	1.47	77	0.14	NO
Conventional	- 0.24	53	1.79	51	0.08	NO
All	- 0.01	132	0.07	130	0.94	NO
Age	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.15	79	1.34	77	0.18	NO
Conventional	0.07	53	0.52	51	0.61	NO
All	- 0.02	132	0.25	130	0.80	NO
Education	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.26	79	2.39	77	0.02	YES
Conventional	0.00	53	0.03	51	0.98	NO
All	- 0.13	132	1.49	130	0.14	NO
Turnover	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.01	79	0.06	77	0.95	NO
Conventional	0.42	53	3.33	51	0.00	YES
All	0.21	132	2.49	130	0.01	YES
Employee	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.07	79	0.66	77	0.51	NO
Conventional	0.27	53	1.99	51	0.05	NO

All		0.18	132	2.11	130	0.04	YES

Experience	Correlation	N	t-statistics	df	p-value	significant
Presumptive		0.02	79	0.15	77	0.88	NO
Conventional	-	0.18	53	1.32	51	0.19	NO
All	-	0.05	132	0.51	130	0.61	NO

Explicit costs

Gender	Correlation	N	t-statistics	Df	p-value	significant
Presumptive	-	0.13	79	1.14	77	0.26	NO
Conventional		0.07	53	0.48	51	0.64	NO
All		0.02	132	0.28	130	0.78	NO

Age	Correlation	N	t-statistics	Df	p-value	significant
Presumptive	-	0.11	79	0.99	77	0.33	NO
Conventional	-	0.16	53	1.15	51	0.26	NO
All		0.03	132	0.31	130	0.75	NO

Education	Correlation	N	t-statistics	Df	p-value	significant
Presumptive	-	0.18	79	1.59	77	0.12	NO
Conventional	-	0.08	53	0.59	51	0.56	NO
All	-	0.07	132	0.76	130	0.45	NO

Turnover	Correlation	N	t-statistics	Df	p-value	significant
Presumptive		0.19	79	1.69	77	0.09	NO
Conventional		0.33	53	2.53	51	0.01	YES
All		0.35	132	4.29	130	0.00	YES

Employee	Correlation	N	t-statistics	Df	p-value	significant
Presumptive	0.22	79	1.93	77	0.06	NO
Conventional	0.24	53	1.76	51	0.09	NO
All	0.31	132	3.72	130	0.00	YES
Experience	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.03	79	0.30	77	0.76	NO
Conventional	- 0.10	53	0.74	51	0.46	NO
All	0.03	132	0.31	130	0.75	NO

Monetary opportunity costs

Gender	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.04	79	0.38	77	0.70	NO
Conventional	- 0.02	53	0.16	51	0.88	NO
All	0.04	132	0.45	130	0.65	NO
Age	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.11	79	1.00	77	0.32	NO
Conventional	- 0.10	53	0.73	51	0.47	NO
All	0.03	132	0.31	130	0.76	NO
Education	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.25	79	2.31	77	0.02	YES
Conventional	- 0.03	53	0.20	51	0.84	NO
All	- 0.09	132	1.06	130	0.29	NO
Turnover	Correlation	N	t-statistics	df	p-value	significant

Presumptive	0.13	79	1.19	77	0.24	NO
Conventional	0.40	53	3.13	51	0.00	YES
All	0.34	132	4.13	130	0.00	YES
Employee	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.18	79	1.62	77	0.11	NO
Conventional	0.27	53	2.03	51	0.05	YES
All	0.30	132	3.64	130	0.00	YES
Experience	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.01	79	0.08	77	0.94	NO
Conventional	- 0.14	53	1.02	51	0.31	NO
All	0.03	132	0.37	130	0.71	NO

Tax compliance costs

Gender	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.08	79	0.70	77	0.49	NO
Conventional	- 0.06	53	0.45	51	0.66	NO
All	- 0.00	132	0.00	130	1.00	NO
Age	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.11	79	0.99	77	0.33	NO
Conventional	- 0.12	53	0.89	51	0.38	NO
All	- 0.01	132	0.09	130	0.92	NO
Education	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.15	79	1.36	77	0.18	NO

Conventional	- 0.18	53	1.34	51	0.19	NO
All	- 0.09	132	1.02	130	0.31	NO
Turnover	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.19	79	1.65	77	0.10	NO
Conventional	0.41	53	3.23	51	0.00	YES
All	0.38	132	4.62	130	0.00	YES
Employee	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.14	79	1.27	77	0.21	NO
Conventional	0.34	53	2.60	51	0.01	YES
All	0.32	132	3.87	130	0.00	YES
Experience	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.03	79	0.23	77	0.82	NO
Conventional	0.00	53	0.01	51	0.99	NO
All	0.04	132	0.48	130	0.63	NO

Psychological costs

Gender	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.15	79	1.32	77	0.19	NO
Conventional	0.04	53	0.31	51	0.76	NO
All	0.11	132	1.24	130	0.22	NO
Age	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.02	79	0.14	77	0.89	NO
Conventional	- 0.02	53	0.15	51	0.88	NO

All	- 0.01	132	0.12	130	0.90	NO
Education	Correlation	N	t-statistics	df	p-value	significant
Presumptive	- 0.17	79	1.53	77	0.13	NO
Conventional	- 0.40	53	3.08	51	0.00	YES
All	- 0.25	132	2.89	130	0.00	YES
Turnover	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.04	79	0.32	77	0.75	NO
Conventional	0.13	53	0.97	51	0.34	NO
All	0.09	132	1.07	130	0.28	NO
Employee	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.12	79	1.03	77	0.30	NO
Conventional	0.06	53	0.45	51	0.65	NO
All	0.11	132	1.27	130	0.21	NO
Experience	Correlation	N	t-statistics	df	p-value	significant
Presumptive	0.02	79	0.22	77	0.83	NO
Conventional	- 0.13	53	0.95	51	0.35	NO
All	- 0.02	132	0.19	130	0.85	NO

Appendix S: **KRUSKAL-WALLIS' ANALYSIS**

Effect size (ε^2) has been argued as: $\mathrm{H}(n+1)/(n^2-1)$ where H = the Kruskal-Wallis H-test statistic, n = number of observations, and ε^2 = the coefficient value from 0 (means non-effects) to 1 (means strong effects) (Tomczak & Tomczak, 2014, p. 24).

Power was calculated by using G*Power and undertaking the following protocols:

χ² tests - **Goodness-of-fit tests: Contingency tables**			
Analysis:	**Post hoc: Compute achieved power**		
Input:	**Effect size w**	=	0.20
	α err prob	=	0.05
	Total sample size	=	132
	Df	=	4
Output:	**Noncentrality parameter λ =**		5.2800000
	Critical χ²	=	9.4877290
	Power (1-β err prob)	=	0.4171943

Summary of the Kruskal-Wallis' analysis

Taxpayer / Factor	Presumptive					Conventional					All taxpayers				
	χ2	df	p	ε²	Pwr	χ2	df	p	ε²	Pwr	χ2	df	p	ε²	Pwr
Gender --> Implicit	2.14	1	0.14	0.03		3.06	1	0.08	0.06		0.01	1	0.94	0.00	
Gender --> Explicit	1.30	1	0.25	0.02		0.23	1	0.63	0.00		0.08	1	0.78	0.00	
Gender --> Opportunity	0.15	1	0.70	0.00		0.03	1	0.87	0.00		0.21	1	0.65	0.00	
Gender --> Compliance	0.49	1	0.48	0.01		0.20	1	0.65	0.00		0.00	1	1.00	0.00	
Gender --> Psychological	1.73	1	0.19	0.02		0.09	1	0.76	0.00		1.53	1	0.22	0.01	
Age --> Implicit	2.39	4	0.66	0.03		12.25	4	0.02	0.24	0.25	8.86	4	0.06	0.07	
Age --> Explicit	1.87	4	0.76	0.02		3.52	4	0.48	0.07		1.77	4	0.78	0.01	
Age --> Opportunity	1.57	4	0.81	0.02		6.60	4	0.16	0.13		2.36	4	0.67	0.02	
Age --> Compliance	1.64	4	0.80	0.02		3.22	4	0.52	0.06		0.69	4	0.95	0.01	
Age --> Psychological	4.92	4	0.30	0.02		6.61	4	0.16	0.00		6.06	4	0.19	0.05	
Turnover --> Implicit	2.43	3	0.49	0.03		18.13	4	0.00	0.35	0.51	24.70	4	0.00	0.19	0.38
Turnover --> Explicit	7.90	3	0.05	0.10	0.10	11.73	4	0.02	0.23	0.23	24.32	4	0.00	0.19	0.38
Turnover --> Opportunity	5.31	3	0.15	0.07		14.36	4	0.01	0.28	0.33	25.35	4	0.00	0.19	0.38
Turnover --> Compliance	4.85	3	0.18	0.06		10.84	4	0.03	0.21	0.20	25.53	4	0.00	0.20	0.42

Turnover --> Psychological	2.55	3	0.47	0.03		4.96	4	0.29	0.10		4.57	4	0.33	0.03	
Employees --> Implicit	2.50	4	0.64	0.03		5.37	4	0.25	0.10		5.42	4	0.25	0.04	
Employees --> Explicit	11.33	4	0.02	0.15	0.16	8.15	4	0.09	0.16		17.52	4	0.00	0.13	0.19
Employees --> Opportunity	7.92	4	0.09	0.10		8.12	4	0.09	0.16		16.22	4	0.00	0.12	0.16
Employees --> Compliance	6.88	4	0.14	0.09		6.99	4	0.14	0.13		18.15	4	0.00	0.14	0.21
Employees --> Psychological	3.21	4	0.52	0.04		2.90	4	0.57	0.06		1.73	4	0.79	0.01	
Tax experience --> Implicit	3.77	4	0.44	0.05		3.49	4	0.48	0.07		4.31	4	0.37	0.03	
Tax experience --> Explicit	4.16	4	0.39	0.05		3.77	4	0.44	0.07		4.21	4	0.38	0.03	
Tax experience --> Opportunity	3.51	4	0.48	0.05		3.44	4	0.49	0.07		4.93	4	0.29	0.04	
Tax experience --> Compliance	3.68	4	0.45	0.05		2.11	4	0.72	0.04		5.78	4	0.22	0.04	
Tax experience --> Psychological	0.87	4	0.93	0.01		5.55	4	0.24	0.11		3.07	4	0.55	0.02	
Education --> Implicit	7.47	3	0.06	0.10		6.85	3	0.08	0.13		4.35	3	0.23	0.03	
Education --> Explicit	4.48	3	0.21	0.06		7.74	3	0.05	0.15		3.82	3	0.28	0.03	
Education --> Opportunity	6.09	3	0.11	0.08		8.25	3	0.04	0.16	0.14	4.51	3	0.21	0.03	
Education --> Compliance	3.25	3	0.35	0.04		4.43	3	0.22	0.09		3.36	3	0.34	0.03	
Education --> Psychological	3.39	3	0.34	0.04		10.32	3	0.02	0.20	0.20	7.93	3	0.05	0.06	0.08

Appendix T: **TESTED (UNFIT) MODELS**
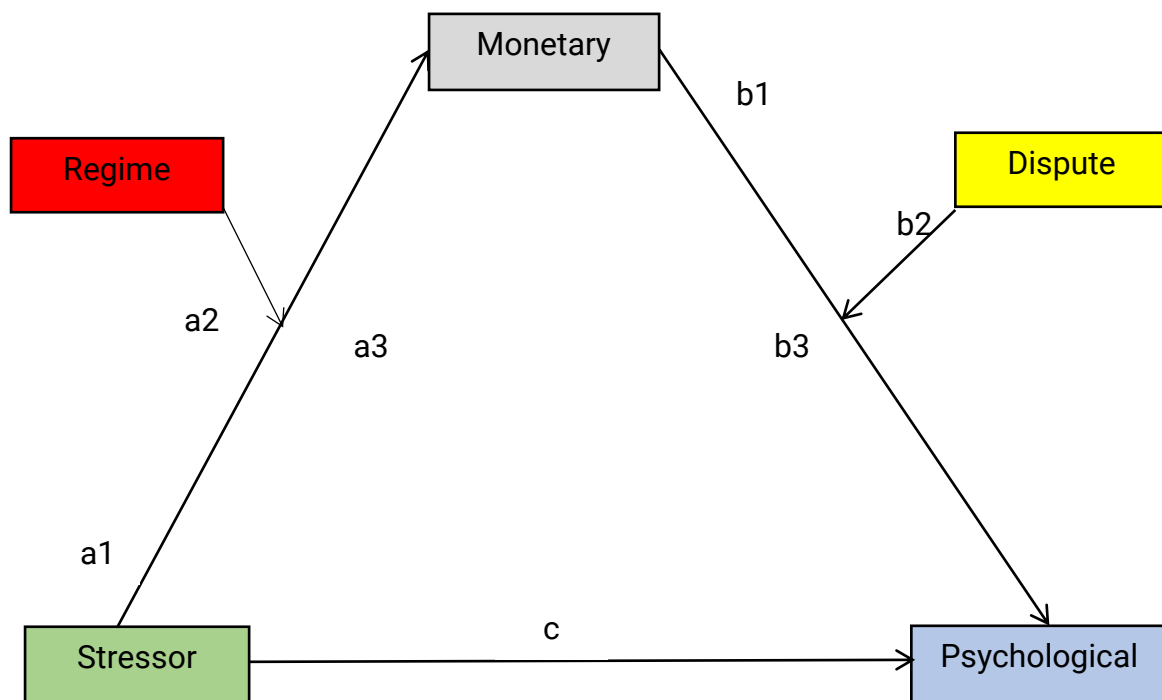

```
# dependent regression
Psychological~c*Stressor+b1*Monetary+b2*Dispute+b3*Monetary:Dispute


# mediator regression

Monetary~a1*Stressor+a2*Regime+a3*Stressor:Regime


# moderator residual covariance

Regime ~ Regime.mean*1

Regime ~~ Regime.var*Regime

Dispute ~ Dispute.mean*1

Dispute ~~ Dispute.var*Dispute


# effect decomposition

Ind_1 := a1+a3*Regime.mean

Ind_2 := b1+b3*Dispute.mean

Tot_ind := Ind_1*Ind_2

Tot_effects := Tot_ind + c
```

Parameter Estimates

Parameter			Label	Estimate	Std. Error	z-value	P	CI lower	CI upper
Psychological	~	Monetary	b1	3.140	0.731	4.296	0.000	1.763	4.641
Psychological	~	Dispute	b2	1.762	0.262	6.718	0.000	1.273	2.293
Psychological	~	Mon:Dis	b3	-0.382	0.074	5.165	0.000	0.539	0.244
Psychological	~	Stressor	c	0.497	0.068	7.281	0.000	0.357	0.626
Monetary	~	Stressor	a1	0.080	0.010	8.021	0.000	0.062	0.101
Monetary	~	Regime	a2	1.706	0.670	2.545	0.011	0.365	2.982
Monetary	~	Str:Reg	a3	-0.009	0.029	0.296	0.767	0.062	0.051
Regime	~	Regime.mean		0.402	0.043	9.363	0.000	0.318	0.485
Regime	~~	Regime.var		0.240	0.009	7.321	0.000	0.217	0.250
Dispute	~	Dispute.mean		6.455	0.263	4.553	0.000	5.962	6.974
Dispute	~~	Dispute.var		8.733	0.947	9.219	0.000	6.977	0.655
Ind_1	:=	a1+a3*Regime.mean		0.076	0.012	6.197	0.000	0.053	0.102
Ind_2	:=	b1+b3*Dispute.mean		0.677	0.332	2.040	0.041	0.023	1.336
Tot_Ind	:=	Ind_1 * Ind_2		0.052	0.028	1.848	0.065	0.002	0.111
Tot_Effects	:=	Tot_Ind + c		0.548	0.058	9.412	0.000	0.429	0.660

*Note.* Delta method standard errors, bias-corrected percentile (5000) bootstrap confidence intervals, ML estimator.

Proportion of indirect effects = Tot_Ind : Tot_Effects

$$= 0.052 : 0.548 = 9 \text{ per cent}$$

Fit summary

Fit index	Reference	Threshold value	Coefficient value
P-value	Kline (2016)	≥ 0.05	0.000
CFI	Bentler (1990)	> 0.95	0.090
GFI	Jöreskog & Sörbom (1981)	> 0.95	0.821
NFI	Bentler & Bonett (1980)	> 0.95	0.094
RMSEA	Steiger (1990), Steiger & Lind (1980)	< 0.05	0.678
SRMR	Jöreskog & Sörbom (1981)	< 0.05	0.642

Source: calculated from survey data and adapted from "Testing structural equation models or detection of misspecifications?" (Saris et al., 2009, p. 582).

Conceptual framework
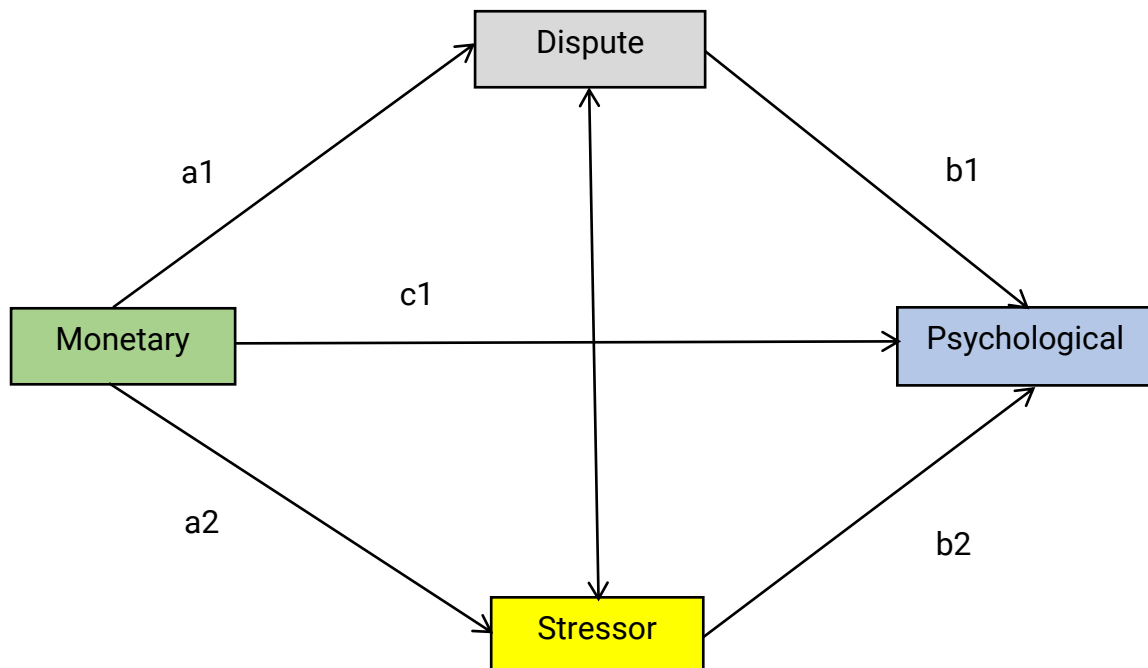

```
# dependent regression
Psychological ~ b1*Dispute + b2*Stressor + c1*Monetary

# mediator regression
Dispute ~ a1*Monetary
Stressor ~ a2*Monetary

# mediator residual covariance
Dispute ~~ Stressor

# effect decomposition
# y1 ~ x1
Ind_1 := a1*b1
Ind_2 := a2*b2
Tot_ind := Ind_1 + Ind_2
Tot_effects := Tot_ind + c1
```

Parameter Estimates

Parameter			Label	Estimate	Std. Error	z-value	P	CI lower	CI upper
Psychological	~	Dispute	b1	0.52	0.174	2.991	0.003	0.178	0.869
Psychological	~	Stressor	b2	0.407	0.066	6.184	< .001	0.275	0.535
Psychological	~	Monetary	c1	-0.065	0.201	-0.322	0.748	-0.494	0.312
Dispute	~	Monetary	a1	0.62	0.141	4.389	< .001	0.433	0.991
Stressor	~	Monetary	a2	1.321	0.351	3.765	< .001	0.773	2.164
Dispute	~~	Stressor		9.192	1.968	4.67	< .001	5.159	12.98
Ind_1	:=	a1*b1		0.322	0.139	2.317	0.021	0.105	0.654
Ind_2	:=	a2*b2		0.538	0.168	3.191	0.001	0.276	0.935
Tot_Ind	:=	Ind_1 + Ind_2		0.86	0.233	3.693	< .001	0.514	1.434
Tot_Effects	:=	Tot_Ind + c1		0.795	0.237	3.348	< .001	0.41	1.371

Note. Delta method standard errors, bias-corrected percentile (5000) bootstrap confidence intervals, ML estimator.
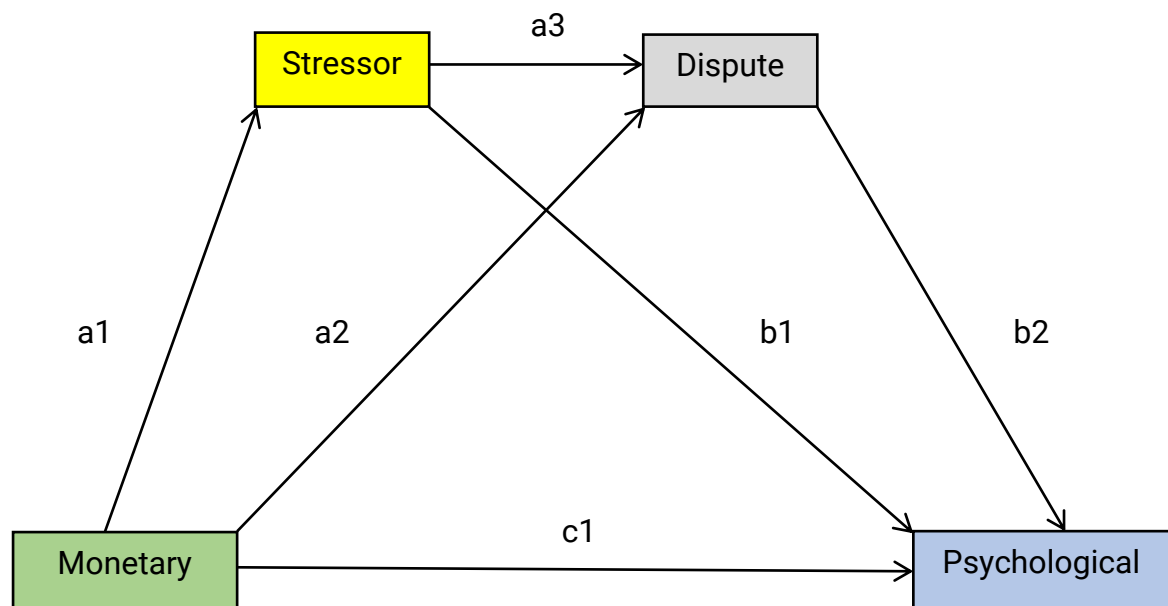
Proportion of indirect effects = Tot_Ind : Tot_Effects

= 0.86 : 0.795 = 108 per cent

Fit summary

Fit index	Reference	Threshold value	Coefficient value
P-value	Kline (2016)	≥ 0.05	0.000
CFI	Bentler (1990)	> 0.95	1.000
GFI	Jöreskog & Sörbom (1981)	> 0.95	1.000
NFI	Bentler & Bonett (1980)	> 0.95	1.000
RMSEA	Steiger (1990), Steiger & Lind (1980)	< 0.05	0.000
SRMR	Jöreskog & Sörbom (1981)	< 0.05	0.000

Source: calculated from survey data and adapted from "Testing structural equation models or detection of misspecifications?" (Saris et al., 2009, p. 582).

Conceptual framework

dependent regression

Psychological ~ b1*Stressor + b2*Dispute + c1*Monetary

mediator regression

Stressor ~ a1*Monetary

Dispute ~ a2*Monetary + a3*Stressor

effect decomposition

y1 ~ x1

Ind_1 := a1*b1

Ind_2 := a2*b2

Ind_3 := a1*a3*b2

Tot_Ind := Ind_1 + Ind_2 + Ind_3

Tot_Effects := Tot_Ind + c1

Parameter Estimates

Parameter			Label	Estimate	Std. Error	z-value	P	CI lower	CI upper
Psychological	~	Dispute	b2	0.52	0.176	2.955	0.003	0.186	0.869
Psychological	~	Stressor	b1	0.407	0.065	6.243	< .001	0.279	0.534
Psychological	~	Monetary	c1	-0.065	0.202	-0.321	0.748	-0.47	0.322
Dispute	~	Stressor	a3	0.127	0.028	4.547	< .001	0.073	0.182
Dispute	~	Monetary	a2	0.452	0.125	3.608	< .001	0.276	0.768
Stressor	~	Monetary	a1	1.321	0.35	3.773	< .001	0.772	2.143
Ind_1	:=	a1*b1		0.538	0.168	3.208	0.001	0.285	0.937
Ind_2	:=	a2*b2		0.235	0.105	2.238	0.025	0.079	0.484
Ind_3	:=	a1*a3*b2		0.087	0.046	1.881	0.06	0.023	0.201
Tot_Ind	:=	Ind_1 + Ind_2 + Ind_3		0.86	0.227	3.781	< .001	0.511	1.405
Tot_Effects	:=	Tot_Ind + c1		0.795	0.237	3.355	< .001	0.419	1.368

Note. Delta method standard errors, bias-corrected percentile (5000) bootstrap confidence intervals, ML estimator.
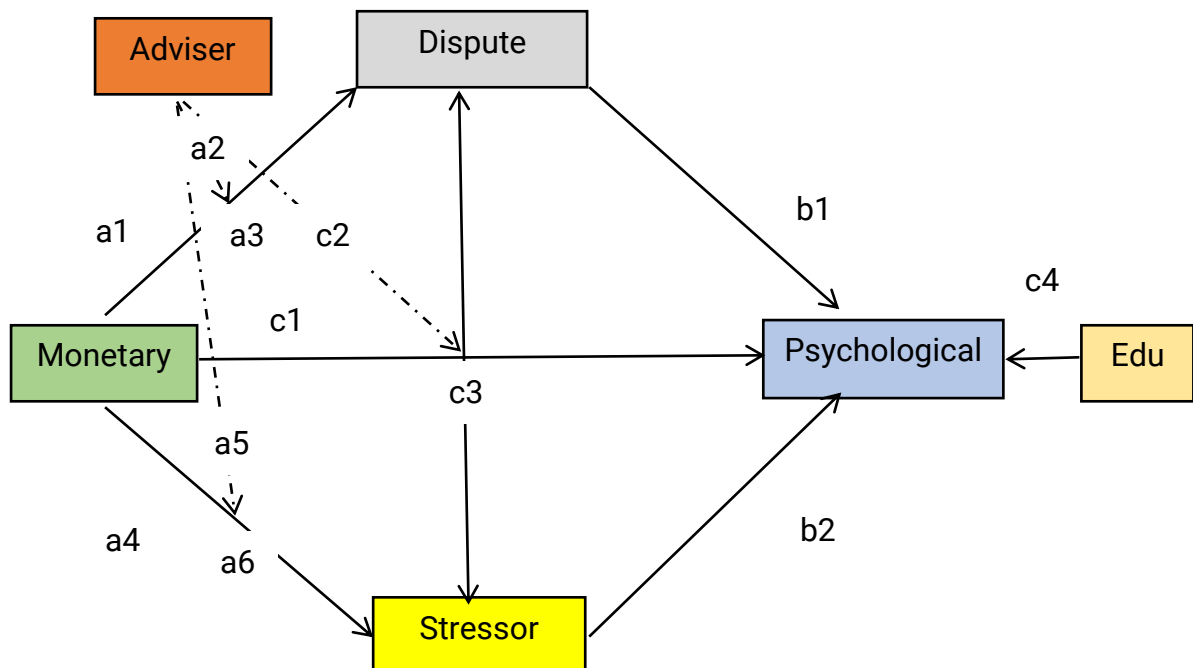
Proportion of indirect effects = Tot_Ind : Tot_Effects

= 0.86 : 0.795 = 108 per cent

Fit summary

Fit index	Reference	Threshold value	Coefficient value
P-value	Kline (2016)	≥ 0.05	0.000
CFI	Bentler (1990)	> 0.95	1.000
GFI	Jöreskog & Sörbom (1981)	> 0.95	1.000
NFI	Bentler & Bonett (1980)	> 0.95	1.000
RMSEA	Steiger (1990), Steiger & Lind (1980)	< 0.05	0.000
SRMR	Jöreskog & Sörbom (1981)	< 0.05	0.000

Source: calculated from survey data and adapted from "Testing structural equation models or detection of misspecifications?" (Saris et al., 2009, p. 582).

Conceptual framework

dependent regression

Psychological ~ c1*Monetary + c2*Adviser + c3*Monetary:Adviser + b1*Dispute +
    b2*Stressor + c4*Edu

moderated mediation regression

Dispute ~ a1*Monetary + a2*Adviser + a3*Monetary:Adviser

Stressor ~ a4*Monetary + a5*Adviser + a6*Monetary:Adviser

Adviser ~ Adviser.mean*1

residual covariance

Dispute ~~ Stressor

Adviser ~~ Adviser.var*Adviser

effect decomposition

CE.XonM1 := a1+a3*Adviser.mean

Indirect1 := (a1+a3*Adviser.mean)*(b1)

Index.mod.med1 := a3*b1

CE.XonM2 := a4+a6*Adviser.mean

Indirect2 :=(a4+a6*Adviser.mean)*(b2)

Index.mod.med2 := a6*b2

Indirect := indirect1+indirect2

Direct := c1+c3*Adviser.mean

Total := direct + indirect

Parameter Estimates

Parameter			Label	Estimate	Std. Error	z-value	P	CI lower	CI upper
Psychological	~	Monetary	c1	0.098	0.538	0.181	0.856	-0.908	1.205
Psychological	~	Adviser	c2	3.984	2.219	1.795	0.073	-0.013	8.657
Psychological	~	Mon:Adv	c3	-0.593	0.593	-1.000	0.317	-1.884	0.427
Psychological	~	Dispute	b1	0.712	0.211	3.375	0.001	0.305	1.141
Psychological	~	Stressor	b2	0.532	0.072	7.418	0.000	0.382	0.665
Psychological	~	Edu	c4	1.674	0.367	4.565	0.000	0.965	2.386
Dispute	~	Monetary	a1	2.448	0.228	10.720	0.000	2.064	2.954
Dispute	~	Adviser	a2	4.851	1.123	4.318	0.000	1.939	6.609
Dispute	~	Mon:Adv	a3	-1.919	0.330	-5.811	0.000	-2.477	-1.137
Stressor	~	Monetary	a4	8.929	0.850	10.508	0.000	7.534	10.905
Stressor	~	Adviser	a5	24.634	2.560	9.622	0.000	19.270	29.391
Stressor	~	Mon:Adv	a6	-8.200	0.936	-8.760	0.000	-10.268	-6.552
Dispute	~~	Stressor		29.327	5.353	5.479	0.000	18.241	39.036
CE.XonM1	:=	a1 + a3*Adviser.mean		1.983	0.196	10.126	0.000	1.660	2.436
Indirect1	:=	(a1 + a3*Adviser.mean) * (b1)		1.412	0.442	3.194	0.001	0.619	2.382
Index.mod.med1	:=	a3*b1		-1.367	0.438	-3.125	0.002	-2.266	-0.532
CE.XonM2	:=	a4 + a6*Adviser.mean		6.942	0.716	9.689	0.000	5.753	8.580
Indirect2	:=	(a4 + a6*Adviser.mean) * (b2)		3.690	0.671	5.495	0.000	2.517	5.167
Index.mod.med2	:=	a6*b2		-4.358	0.844	-5.162	0.000	-6.249	-2.888
Indirect	:=	Indirect1 + Indirect2		5.102	0.670	7.619	0.000	4.003	6.643
Direct	:=	c1 + c3*Adviser.mean		-0.046	0.426	-0.108	0.914	-0.888	0.805
Total	:=	Direct + Indirect		5.056	0.660	7.657	0.000	3.951	6.490

Note. Delta method standard errors, bias-corrected percentile (5000) bootstrap confidence intervals, ML estimator.

Proportion of indirect effects = Indirect : Total   = 5.102 : 5.056 = 101 per cent

Fit summary

Fit index	Reference	Threshold value	Coefficient value
P-value	Kline (2016)	≥ 0.05	0.000
CFI	Bentler (1990)	> 0.95	0.000
GFI	Jöreskog & Sörbom (1981)	> 0.95	0.507
NFI	Bentler & Bonett (1980)	> 0.95	-1.254
RMSEA	Steiger (1990), Steiger & Lind (1980)	< 0.05	0.712
SRMR	Jöreskog & Sörbom (1981)	< 0.05	5.477

Source: calculated from survey data and adapted from "Testing structural equation models or detection of misspecifications?" (Saris et al., 2009, p. 582)