

Small Businesses in South Africa

Who Outsources Tax Compliance Work and Why?

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Abstract

The authors use firm-level survey data on 998 small and medium enterprises registered for tax in South Africa regarding tax compliance costs to investigate the use of outsourcing to complete tax compliance tasks. Overall, about 43 percent of the enterprises do all their tax compliance work in-house, 11 percent outsource all their tax compliance work, and the remaining 46 percent use a combination of both (“partial outsourcing”).

The data display an inverted-U shape for outsourcing of tax compliance tasks: the smallest firms (those under R 300,000 turnover or well under US\$50,000) tend not to outsource, due to a combination of relatively higher cost-burden and less complexity. Relatively larger firms

(those with more than R 14 million turnover or about US\$2 million) report that they have sufficient in-house capacity and therefore do not need to outsource. Those in the middle are most likely to outsource at least some of their tax compliance work, mostly because tax is a specialist field and they presumably lack sufficient capacity in-house. The survey data show that the costs of tax compliance are clearly the highest for those who engage in partial outsourcing, as it appears there is likely duplication of effort. Most such firms could reduce their tax compliance costs (and probably minimize the incidence of post-filing problems) by moving from partial to full outsourcing of all tax compliance work.

This paper—a product of the Regulatory Simplification Division, Investment Climate Department—is part of a larger effort in the department to support business tax reform, improve the efficiency of business tax administration and reduce tax compliance costs for businesses. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at gkisunko@worldbank.org.

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Small Businesses in South Africa: Who outsources tax compliance work and why?¹

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Introduction

Background and motivation: At the request of the National Treasury of South Africa (NT) and the South Africa Revenue Service (SARS) in 2006, the Foreign Investment Advisory Service (FIAS, a multi-donor facility of the World Bank Group) initiated a set of surveys to measure the tax compliance burden for SMMEs.² NT and SARS have been developing tax policy and tax administration reforms, including a concerted effort to reduce the tax compliance burden on SMMEs. For purposes of this study, and in line with current tax legislation in South Africa, SMMEs are defined as those with an annual turnover under R 14 million.³

International research in both developed and developing countries has documented a consistent pattern of regressivity in tax compliance costs, such that the smallest firms typically face tax compliance costs that are a significantly higher proportion of their annual turnover than larger firms (see more detail below). Anecdotal evidence in South Africa suggested that many of the smallest firms struggle with tax compliance. A number of professional tax practitioners, in interviews with FIAS, stated that they had sometimes turned away potential micro- or small businesses because they “could not afford the fees.” Meanwhile, fear of “making mistakes” on taxes and the perceived risk of heavy penalties imposed by SARS (in addition to unwillingness to pay taxes) were said to be factors deterring formalization of many informal firms.

To document the extent of the problem in South Africa, FIAS worked with NT and SARS to design a set of three surveys:

- A survey of professional tax practitioners (TP) about their SMME clients
- A survey of SMMEs registered with SARS
- A survey of informal SMMEs regarding their perceptions of tax compliance costs

There have been two reports based on the TP survey – “Tax Compliance Burden for Small Businesses – a Survey of Tax Practitioners”, focused on different turnover bands within SMMEs⁴, and “Tax Compliance Costs for Small Businesses – Provincial Analysis” focused on provincial differences.⁵

The first report documented that SMMEs who use tax practitioners to prepare their filings for the four key business taxes in South Africa (CIT, provisional tax, VAT and employees’ taxes) pay an average of just over R 7,600 per year (about US\$1000), with

² Small Medium and Micro Enterprises

³ The exchange rate as of August 2008 was R7.7 = US\$1

⁴ FIAS (2007) “South Africa: Tax Compliance Burden for Small Businesses: A Survey of Tax Practitioners,” available at <http://www.fias.net>

⁵ Coolidge, Ilic and Kisunko (2008) “South Africa: Tax Compliance Burden for Small Businesses: Provincial Analysis”, forthcoming

relatively little difference across turnover bands.⁶ It also confirmed that tax compliance costs in South Africa, as in most other countries, are regressive and often burdensome for the smallest firms. The second report focused on differences in tax compliance costs between the nine provinces of South Africa.

The other two surveys listed above were both co-financed by USAID and carried out by Citizen Surveys of South Africa.⁷ The direct survey of SMMEs, based on a representative sample of almost 1000 SMMEs registered with SARS (and stratified based on turnover quintiles between R70,000 and R14 million in the SARS database for the year 2005), also confirmed the regressive pattern of tax compliance costs and broadly confirmed the costs of outsourcing. It showed that SMMEs devote in the range of 150 - 260 hours per year on general accounting and tax compliance.⁸

This paper utilizes the survey of formal SMMEs, and analyses their reported practices of outsourcing tax preparation to professional tax practitioners.

Brief overview of the survey

The fieldwork for the Tax Compliance Cost Survey of Formal SMMEs in South Africa was completed during the second half of 2007. Interviews were conducted over the phone. This effort has resulted in a nationally representative sample of 998 SMMEs registered with the South African Revenue Service (SARS) from all provinces of the country, all sectors of the economy and turnover groups from just over 70,000 rand to 14 million rand of reported turnover in 2005. The latter group proved to be rather upward moving, that is why the final sample has about 10% of respondents with turnover over 14 million rand. To ensure the maximum accuracy of data analysis a weighting factor was also computed ensuring fine tuning of sample characteristics.

Questionnaires were developed through a joint effort of the National Treasury, SARS, FIAS, the Public Sector Governance Group of the World Bank, and the contractors. Questionnaires were tested and adapted before the main fieldwork.

Research goal

This paper is aimed at providing a more detailed analysis of patterns and practices of tax compliance outsourcing followed by South African SMMEs. Specifically, we attempt to provide a more detailed analysis about which SMMEs do or do not outsource, what tasks are outsourced, why they are outsourced, the extent to which the use of IT may substitute

⁶ These tax compliance costs were clearly separated by the tax practitioners from the cost for general accounting services, which averaged about R12,000 per year for SMMEs who outsourced such work.

⁷ USAID (2008), "Formal SMME Tax compliance Survey Report: Prepared for National Treasury Republic of South Africa", available at <http://www.fias.net>

⁸ SMME respondents found it difficult to separate tax compliance from general accounting; those who provided an answer believed it was about half and half.

for outsourcing, and the costs of outsourcing compared to in-house tax preparation. We also attempt to determine whether outsourcing is associated with a lower incidence of “post-filing” problems with SARS (e.g., queries, inspections/audits, appeals, etc.).

We therefore start with an analysis of the relationship between respondents’ demographics (legal status, main economic activity, size, etc.) and their outsourcing “habits,” followed by a brief analysis of patterns of outsourcing specific tax compliance tasks. We then attempt to model and explain how outsourcing behavior affects overall tax compliance cost and finish with an analysis of the relationship between outsourcing and post-filing interactions with SARS.

The structure of this paper is as follows. After this introduction, Part 1 provides a summary of international tax compliance cost research for business taxpayers done to-date and briefly summarizes the research techniques used in the analysis for this paper; part 2 describes relations between outsourcing and firm demographics; part 3 presents the modeling of the cost of tax compliance; part 4 addresses issues of post-filing; and part 5 provides conclusions and suggests policy implications.

1. Previous research and analytical methods used in this paper

Literature review

There is a growing body of literature about tax compliance costs for businesses⁹ documenting the problem of regressive tax compliance costs, which can, in turn, represent a particular burden for many small businesses. This research took place primarily in the UK, US, Australia, and New Zealand (see in particular comprehensive literature reviews by Sanford (1989), James (2003), and Evans (2003)) and has since expanded to other OECD countries and (more recently) developing and transition countries such as Malaysia, India, Croatia, Brazil, and the Czech Republic, which all display the same regressive pattern.

Many governments, including UK, US, Australia, New Zealand, Canada and the Netherlands, have been working to reduce tax compliance costs for small businesses. For example, the Government of New Zealand has noted that “reducing tax compliance costs can help boost productivity and competitiveness as it would allow more resources to be applied to core business activities.” (Government of New Zealand, 2007)

On the other hand, the literature on tax compliance notes that one indirect benefit of tax compliance is the discipline imposed on small businesses to prepare and maintain accurate financial accounts (e.g., income statement, balance sheet). Sandford noted many

⁹ The most common used definition for tax compliance costs appears to be one offered by Sandford (1995): “Costs incurred by taxpayers in meeting the requirements laid on them by the tax law and the revenue authorities ... over and above the actual payment of tax; costs which would disappear if the tax was abolished.”

of the relevant benefits (particularly improvements in information systems and financial control), and these have been further documented by the tax compliance cost literature.

A recent World Bank study concluded that more tax compliance in developing countries “is significantly associated with more access to credit,” especially in countries that have a relatively larger formal sector. They suggest that “firms’ balance sheets are relatively more informative for financial institutions” although they could not firmly establish the direction of causation.¹⁰

Many SMMES (as noted by Turner, 1998), especially those in developing and transition countries, often state that they would not bother with formal accounting if not required to do so by tax legislation. If they lack the skills to undertake their own accounting and can’t afford to hire the necessary expertise, they can find themselves in a difficult situation.

The incidence of “outsourcing” – i.e., hiring external tax advisors to assist with various aspects of tax compliance – is noted in several of the tax compliance cost studies. Most commonly, it is noted that SMMES have a relatively high tendency to outsource some or all of their tax compliance activities, either because they lack the expertise or because the amount of work would be insufficient to warrant hiring a full-time accountant or bookkeeper (see more detailed examples below).

A small number of tax compliance cost studies have specifically examined SMMES’ experiences with outsourcing, most of them noting that medium and larger firms are more likely to have full time tax expertise in their own payroll and therefore are less likely to outsource their tax preparation work and related tax compliance tasks.

A key question is whether the smallest firms (e.g., micro-enterprises), who also appear somewhat less likely to outsource, do their tax preparation work in-house because they can’t afford to outsource (in which case both they and the tax authorities bear the risks of numerous “mistakes”) or because their tax compliance needs are simple enough – and their in-house capacity is correspondingly high enough - that they don’t need to outsource.

The most relevant such study is probably the Colmar Brunton report for New Zealand (2005), “Measuring the tax compliance costs of small and medium-sized businesses – a benchmark survey.” This survey concluded that 86 – 87% of “micro” (1 – 5 employees) and “small” (6 – 19 employees) outsourced at least some tax related services in the year before their survey. Businesses with “nil employees” and “medium” firms (over 20 employees) were somewhat less likely to outsource any tax related services (77% and 84%, respectively).

The report also examined the combined tax compliance costs of both “internal plus external” provision. More interestingly, when asked “Whether a business would still pay

¹⁰ Gatti, R. and M. Honorati, (2008) “Informality among Formal Firms: Firm-level, Cross-country Evidence on Tax Compliance and Access to Credit”

their external accountant to do their annual accounts if New Zealand were tax free”, fully 45% said “probably not” or “definitely not”, with 49% of the smallest firms giving these responses.¹¹

Reports from other developed countries display similar broad patterns. Erard (1997) stated for Canada that “the vast majority of small and medium-sized businesses report that they rely on outside professional assistance to comply with their corporate income and capital taxes.” At the same time, when asked about the aspects of CIT compliance that created most problems for businesses, the most frequently cited problem (cited by 58.5% of respondents) was “the cost of professional services.” While not legally required to use professional tax practitioners (as in the case, eg., in Peru), Erard noted:

Smaller businesses are likely to lack the technical knowledge to properly complete an income tax return; may not be familiar with the recent tax changes; and would in all probability find it cost-inefficient to attempt to develop this expertise in house. Although the availability of outside tax assistance undoubtedly reduces the overall compliance burden for these firms, the high cost of this assistance is nonetheless the most commonly reported source of compliance problems by respondents.

Similarly, Turner commented that “necessity forces the self-employed tradesman, farmer, shopkeeper, or consultant to engage an accountant, even though the cost of employing such professionals is often regarded as outrageous.”¹²

Patterns of outsourcing differ somewhat in developing and transition countries. In Malaysia, “72 percent of public listed companies rely on the use of paid external advisors ... In contrast, 75% of SMEs seem to rely on their internal resources to comply with the tax laws. The findings need to be treated cautiously because both studies were carried out prior to the introduction of the self-assessment system.” (Pope and Abdul-Jabbar, 2008) Similarly, in Yemen, which has not yet enacted “self-assessment” in tax filing except for “large taxpayers,” barely 5% of businesses registered with the tax authorities use any external help. (FIAS, forthcoming)

In some East European countries, with relatively complex tax systems, it is normal for companies (i.e., legal entities) of all sizes to have a full time bookkeeper or accountant on the payroll. In a recent survey in Ukraine, over 90% of companies had at least a part-time bookkeeper on the payroll and less than 4% of firms outsource any of their tax compliance work.(FIAS, forthcoming) In the Czech Republic, in a survey of tax compliance costs for businesses, 90% of respondents hired “an external supplier of services” for tax duties. (Vitek, 2004)

The question for South Africa is whether it might be beneficial to encourage more outsourcing by SMMEs. The survey results described below shed useful light on this question.

¹¹ Colmar Brunton (2005), pg. 89.

¹² Turner, et. al., pg. 69.

Analytical methods used

This paper is utilizing several relatively simple and straight-forward statistical methods.

1. T-tests for independent samples were used when analyses of continuous data were performed. T-test scores are quoted together with significance levels.
2. Chi-tests were used when analyses of categorical data had to be performed. Chi-test results are also quoted together with their significance levels. Chi-tests were performed only in cases when visual inspection of cross tabulation confirmed that the potential statistical significance could be interpreted, e.g. when the causality is clear and unambiguous.
3. Analysis of variance was performed to analyze relations of continuous and categorical variables. F-statistics were quoted with their significance levels. In addition Scheffe tests were also performed to determine the exact categories between which the significant difference exists.
4. Ordinary Least Square Regression models were used to test whether behavior of variables of interest affects the dependent variable (cost of compliance).

2. Outsourcing patterns

It is given that all companies that function as officially registered entities must register with the tax authorities and file tax returns on a regular basis. Tax compliance work can be done either entirely in-house, fully outsourced to outside specialists, or be a mixture of in-house efforts and fee-for-service outsourcing (referred to in this paper as “partial outsourcing”). The South Africa Survey of Formal SMMEs allows an analysis of these differences from various angles.¹³ Figure 1 shows that different legal forms of businesses have somewhat different approaches to their tax compliance work. The level of outsourcing is somewhat higher among sole proprietors and Close Corporations. Analysis of variance confirms that Close Corporations and sole proprietors have a significantly higher outsourcing index¹⁴ than companies (PTY Ltd, which are usually somewhat larger firms) and differences also exist between Partnerships and Close Corporations (see Table 1 below).

¹³ The full questionnaire is presented in Annex 1.

¹⁴ See Annex 2 for a discussion of how the Outsourcing index was constructed.

Figure 1: Outsourcing by the legal status of Survey respondents

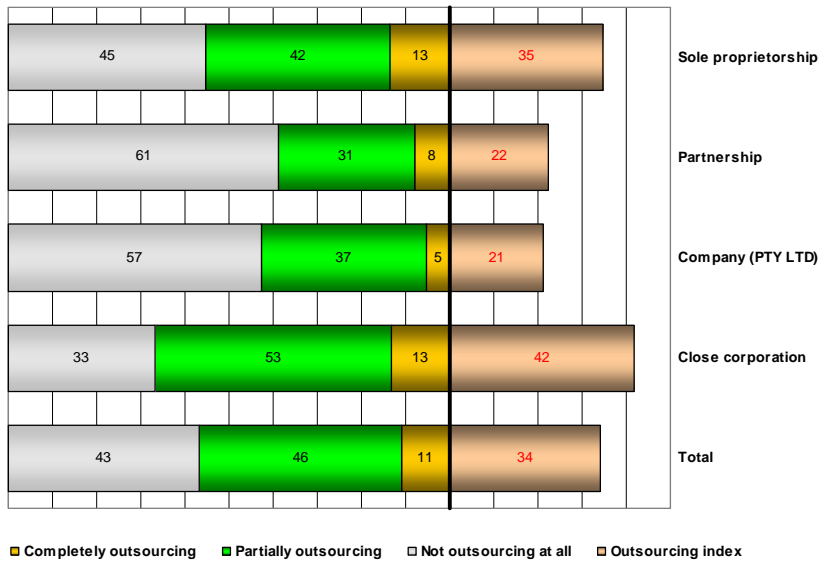


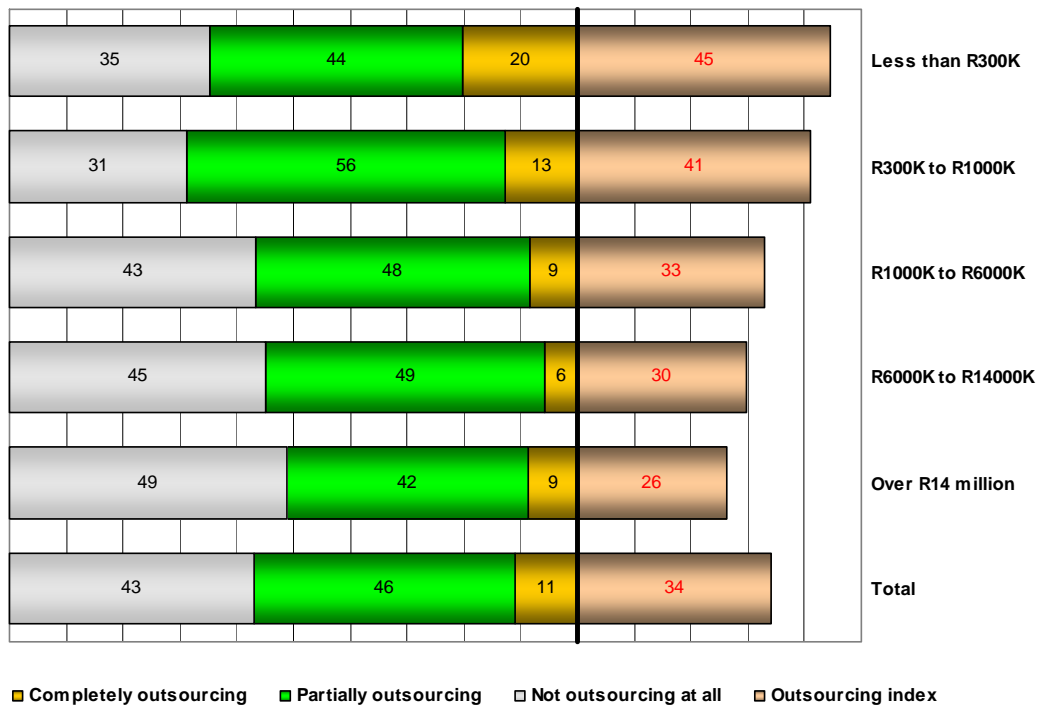
Table 1: Analysis of variance: Outsourcing index by the respondents legal status

| Analysis of variance | | F = 21.65*** | | |
|----------------------|------------------|---------------------------------|---------------------------------------|--|
| Scheffe | Sole proprietors | Partnership | Company | Close corporation |
| Sole proprietors | | MD = 12.215 St. err. = 5.118 | MD = 13.451 (***) St. err. = 3.491 | MD = -7.199 St. err. = 3.092 |
| Partnership | | | MD = 1.236 St. err. = 4.909 | MD = -19.414 (***) St. err. = 4.634 |
| Company | | | | MD = -20.650 (***) St. err. = 2.733 |

MD – Mean Difference; St. err. – Standard error; ***, **, * - statistical significance at 1%, 5%, and 10% level, respectively.

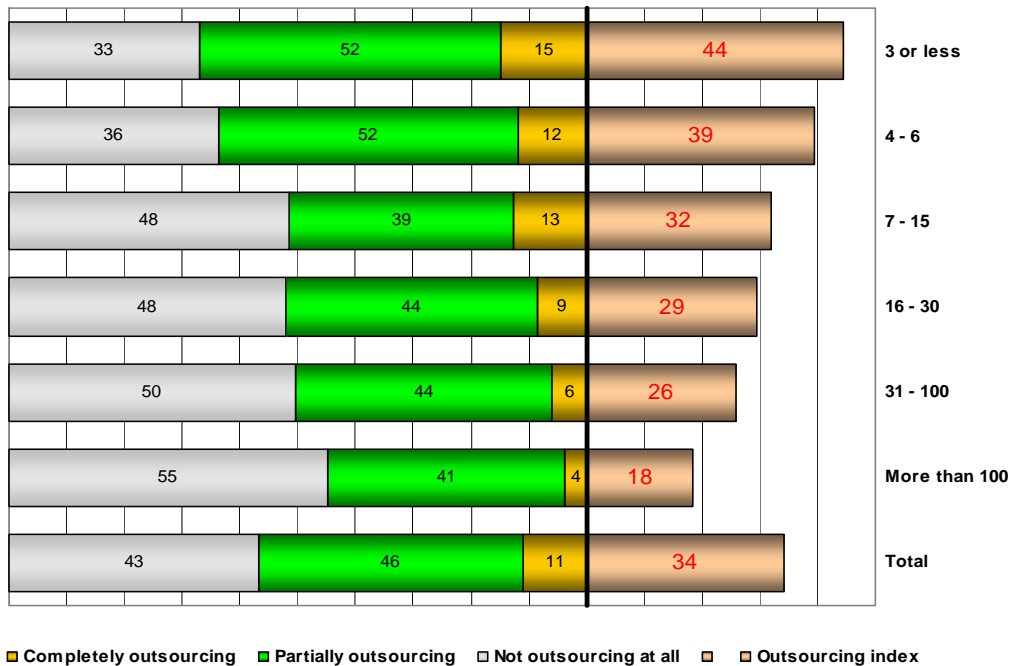
Apparently, businesses tend to use less outside help when they grow larger. Figure 2 shows that the propensity to outsource tax compliance activities drops as the turnover rises. Businesses in the lowest turnover band have an outsourcing index as high as 44 and it drops to 25 for businesses with turnover higher than 14 million rand. A correlation between turnover and the outsourcing index proves the significance of this relation (Pearson coefficient is -0.210 and significant at 1% level).

Figure 2: Outsourcing by turnover band



The relationship between employment in a business and outsourcing practice is almost monotonic: Figure 3 below shows that the larger the number of employed people (including part-timers and family members) the more likely tax compliance work will be done fully in-house and the less likely it will be fully outsourced. The Pearson correlation coefficient between number of employees and the outsourcing index is negative and significant ($r = 0.128$, significant at 1% level).

Figure 3: Outsourcing by total number of employees



An analysis of outsourcing habits by economic activity shows similar patterns of using outside help with tax compliance work for most sectors, except the “finance, real estate and business services” sector (Figure 4). The latter sector uses outside help significantly less frequently than respondents whose main activities are in other sectors of economy ($F = 16.850$, significant at the 1% level).

Figure 4: Outsourcing by the main economic activity

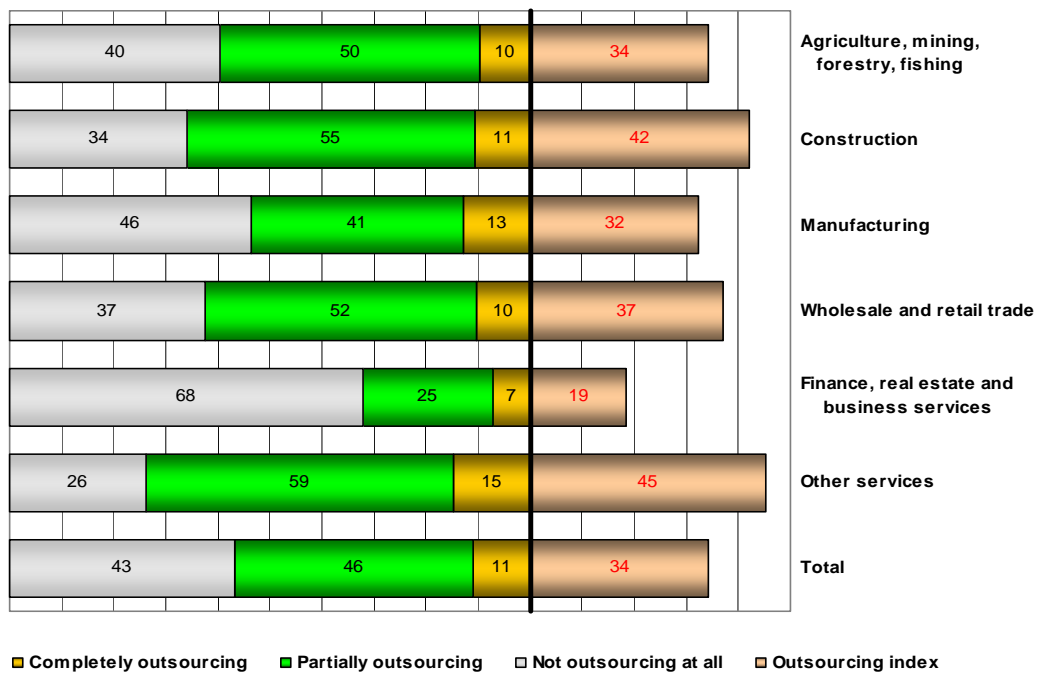
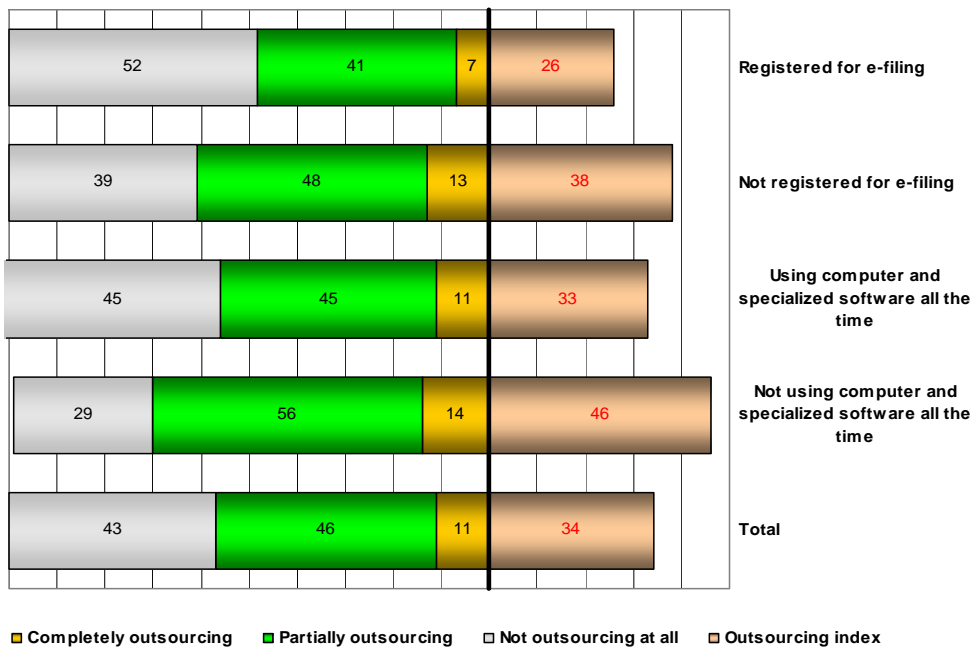


Figure 5 shows that businesses registered for e-filing seem to use outside help in order to comply with taxes significantly less than those not registered for e-filing ($t = -5.264$, significant at 1% level¹⁵). Also, businesses who do not always use computers and specialized software tend to outsource tax compliance work more frequently ($t = -3.765$, significant at 1% level). Thus outsourcing and IT appear to be rough substitutes for SMMEs.

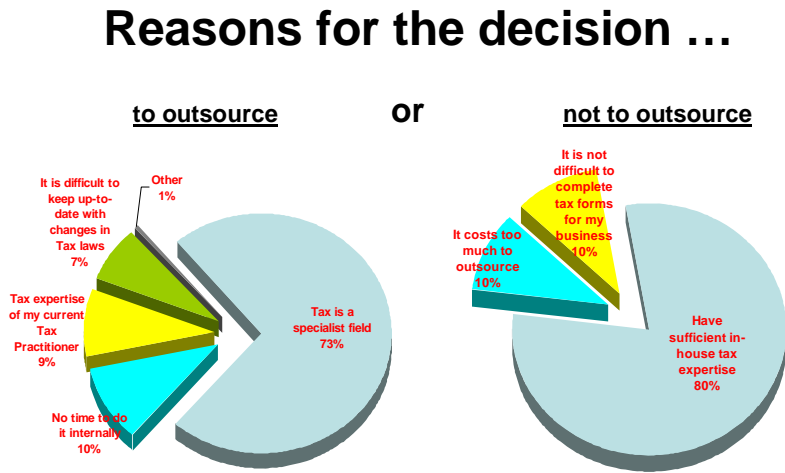
Figure 5: Outsourcing by usage of IT in tax compliance work



¹⁵ Significance of difference between groups was tested using the outsourcing index as a measure of outsourcing level

According to respondents overall, the main reason for not using outside help for tax compliance work is not the cost of these services. Figure 6 shows that only 10% of respondents suggested that the cost of tax practitioners is the main reason for not hiring them, while 80% report that they have sufficient in-house tax expertise. Conversely, 78% of those respondents who outsource report they do it because “tax is a specialist field.”

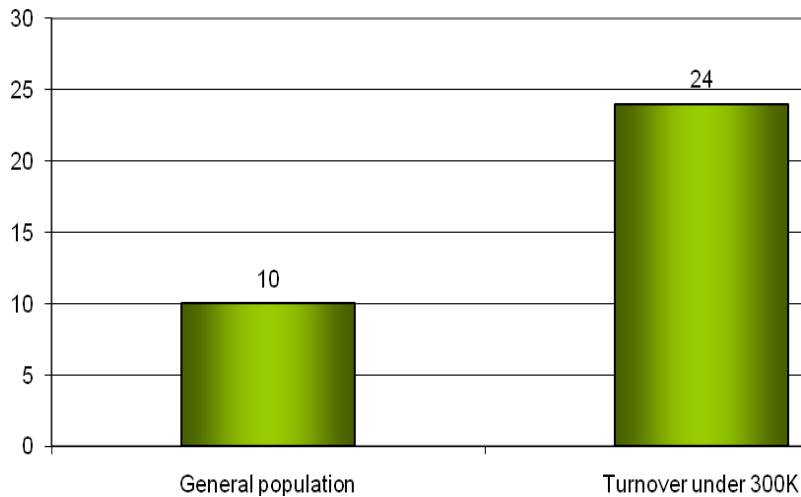
Figure 6: Why outsourcing is or is not used



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As expected, a larger proportion of the smallest firms who do not outsource reported that the reason was the high cost of outsourcing.” (See Figure 7.)

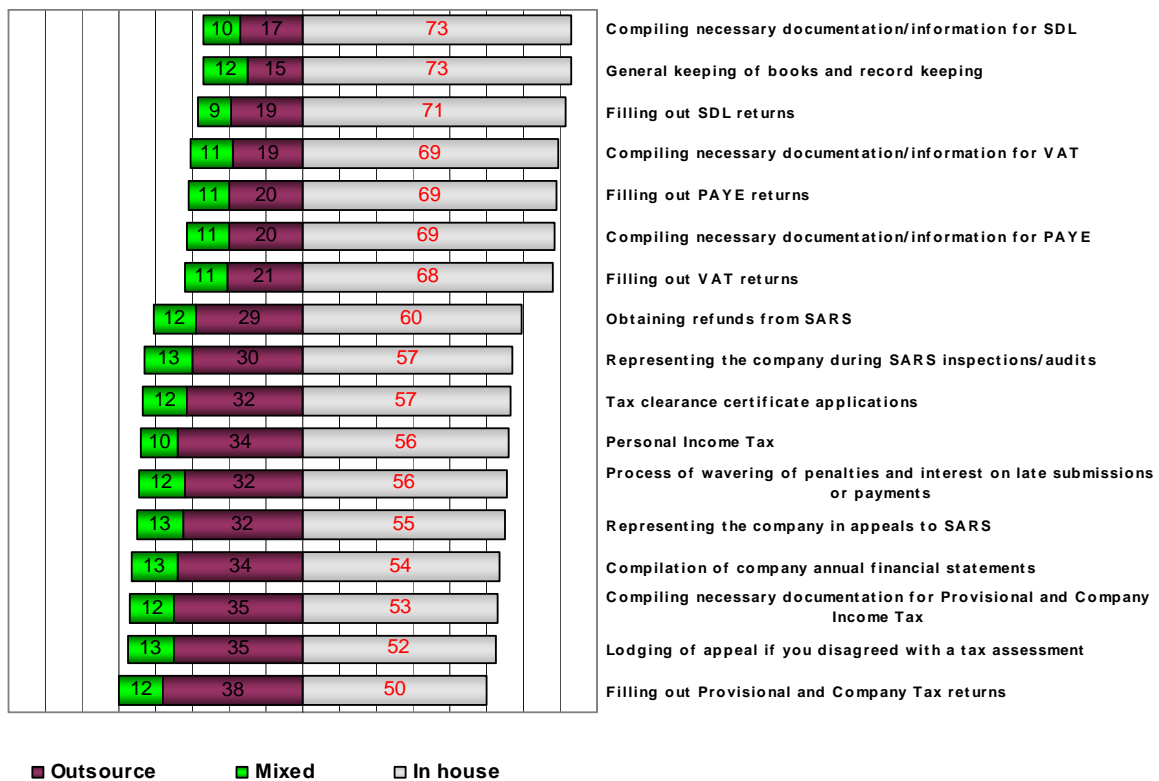
Figure 7: Firms reporting not outsourcing because of the cost



The frequency of using outside expertise for tax compliance work differs substantially by the type of tax compliance activity. Figure 8 shows that the lowest usage of outside help is for general bookkeeping, and preparation and submission of SDL, PAYE and VAT returns. These are tasks that are more frequent within a tax year, so perhaps they are done routinely and learned well by employees of reporting businesses.

The highest usage of the outside help is for less frequent (and perhaps more complex) tax compliance tasks such as preparing, filling and submitting provisional and income tax returns, preparing and lodging appeals and preparing annual statements. It is interesting to note that while full outsourcing of specific tax compliance tasks fluctuates greatly among various types of tax compliance-related activities (from 15% of respondents fully outsourcing general record keeping to 38% outsourcing filling out provisional company tax returns), partial outsourcing within specific tax compliance tasks remains practically the same (fluctuates from 9% to 13% of activities).

Figure 8: Outsourcing of various types of tax compliance work



Further analysis of partial outsourcing shows that it is practiced for all kinds of tax activities, and there seems to be no special determinant of who will choose to partially outsource. The only interesting and significant finding shows that partial outsourcing is significantly more frequent among companies experiencing any kind of problem (disagreement with SARS assessment, inspections and queries and penalties and interest

as a result of late payments). A more rigorous analysis of this phenomenon is not possible due to the low number of relevant survey responses who reported such experiences. Nevertheless, where possible we tried to provide few illustrations of SMMEs' post-filing experiences in part four of this paper.

3. Modeling the costs of outsourcing

Tax compliance is a time-consuming and costly endeavor. A number of South African SMMEs complained that it suppresses their growth. The results of the Formal SMMEs Tax Compliance Cost Survey provided a rich database that allows for analysis of the incidence and cost of tax compliance in South Africa.

In order to understand what drives the cost of tax compliance we formulated a base hypothesis:

Hypothesis 1: Outsourcing of tax compliance work to tax professionals saves money.

In order to test this hypothesis in several settings we created an estimate of total compliance cost (see Annex 1 for details), indexes of outsourcing of tax compliance work (see Annex 2 for details) and a number of dummy variables.

To test the hypothesis we used the following OLS model:

$$\ln(C) = \ln(\text{Turn}) + \ln(\text{Emp}) + H + O_{\text{part}} + O + D_{\text{province}} + D_{\text{legal}} + D_{\text{taxes}} + D_{\text{activities}} + d_{\text{e-file}} + d_{\text{full}} + e$$

where:

$\ln(C)$ – ln total cost of tax compliance,

$\ln(\text{Turn})$ – ln total turnover,

$\ln(\text{Emp})$ – ln of total employment

H – share of tax compliance work done in house,

O_{part} – share of tax compliance work that is partially outsourced,

O – share of tax activities fully outsourced;

D_{province} – dummy variables for provinces,

D_{legal} – dummy variables for legal of businesses,

D_{taxes} – dummy variables for taxes paid,

$D_{\text{activities}}$ – dummy variables for tax compliance activities undertaken,

$d_{\text{e-file}}$ – dummy for businesses using e-filing,

d_{full} – dummy for businesses using either only in-house (0) expertise or fully outsourcing tax compliance work.

From the beginning we have noticed that while both $\ln(\text{Turnov})$ and $\ln(\text{Empl})$ variables are significant and robust in the regression model, and the former has 266 missing values (out of 998 observations in the sample), while the latter has none. We tested logarithms of full-time employment, total employment and turnover as controls for firms' size and came to the conclusion that using logarithm turnover and full-time employment as controls provides for a better model fit.

In order to increase number of observations that can be used in the regression model it was decided to impute most of missing values for turnover. Turnover volumes for 247 respondents who refused to provide an exact number for annual turnover were replaced with regression-based estimates. The remaining respondents (19 respondents) answered “Do not know” to the turnover question. These values were not imputed. Imputed values were calculated using a linear regression model that explains 87% of turnover variation (see Annex 3 for details).

Table 2 below shows results of multivariate regression models of total cost of tax compliance. The first regression – “Basic” model - shows that the sign of coefficients for variables of interest – partial outsourcing and full outsourcing indexes - are positive in the basic specification model that contains turnover and employment as additional right-hand side variables. The coefficients are significant at the 1% level.

This Basic model was then tested for sensitivity to the inclusion of additional explanatory variables (as specified in the description above). The results proved to be robust. Eventually we extended the Basic model to what is called “Base” model in Table 2 to include other explanatory variables from the above list. In the Base model, variables of interest, i.e. shares of activities partially/completely outsources proved to be significant in explaining the dependent variable (Table 2, Base model).

The Basic model (and supporting statistical analysis that is not shown in this paper) suggests that there a significant difference in the cost of compliance between those businesses doing everything “in house” and those outsourcing at least something. These findings show that, since the cost is significantly lower in the group of businesses not outsourcing, these two groups are actually two separate subpopulations of businesses and more specific analysis is needed to determine the influence of the level of outsourcing on the cost of compliance. For this reason the “Restricted” Model was developed to analyze only respondents already using at least some outsourcing.

The Base model was therefore restricted to include only businesses that outsource (fully or partially) at least one of the seventeen tax compliance activities covered by the survey.¹⁶ This was done to separate those respondents who use only “in-house” expertise to fulfill tax compliance requirements and those who look outside for help and or expertise for at least some of their tax compliance tasks (Table 2, Restricted model).

Finally, based on the testing of the Base and Restricted models, we excluded from the analysis those companies that used outside help for some (but not all) of their tax compliance activities, thus we created a “Polarized” model that would analyze only the tax compliance cost for companies that either have done all their tax compliance work in-house or fully outsourced it to an external consultant (Table 2, Polarized model).

It is also important to note that the three outsourcing indexes (H, O_{partial} , and O) add up to 1 and, thus, cannot appear together in the same model, that the e-filing dummy variable is

¹⁶ For details please refer to:
<http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaFormalSMETaxComplianceReport2008>

not significant and thus is not used in the regressions, and that in the “restricted” model regression the Western Cape Province dummy loses its significance. This dummy remains insignificant in the polarized model; several other variables also became insignificant in the latter model, i.e. VAT dummy and dummies for legal form are losing significance. We did not use these dummies in the polarized model mostly because their presence reduces the significance of our target variable - the full outsourcing dummy.

The Basic and Base models show that while it is cheaper to complete tax compliance work in-house (i.e. positive coefficients for both partial and full outsourcing indexes), it is, indeed, more expensive to have various tax compliance activities being partially outsourced rather than do full outsourcing of each of these activities. To an extent it may be seen as paying twice – first for in-house work and then for outside consultants/tax practitioners.

Table 2. OLS results

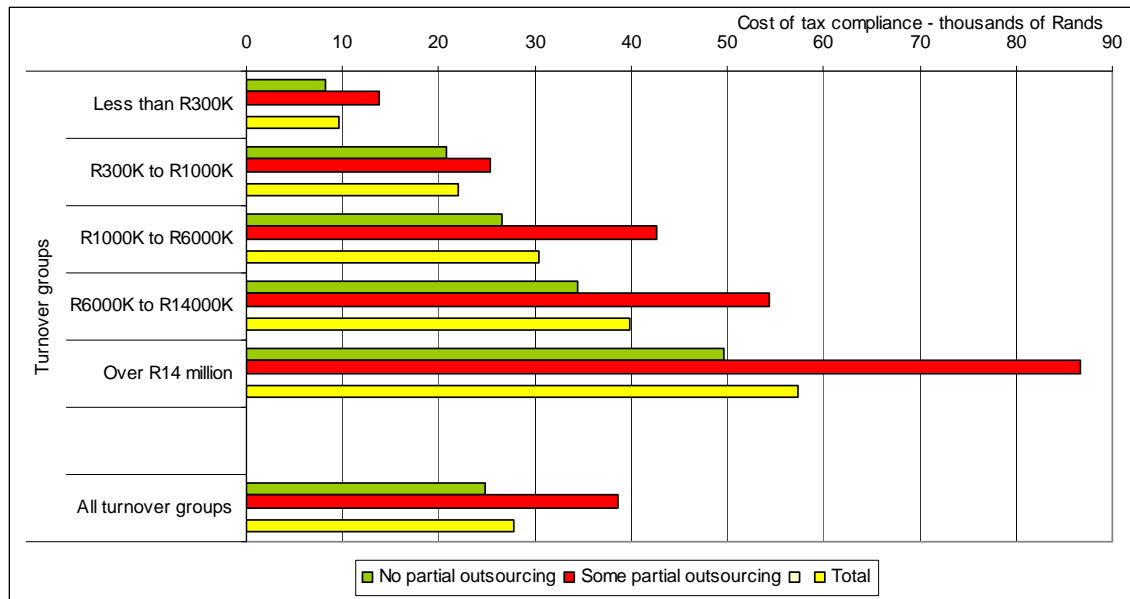
Dependent variable: Logarithm of total cost of tax compliance

| | Basic model | Base model | Restricted model | Polarized model |
|---|---------------------|----------------------|----------------------|---------------------|
| Constant | 6.240*** (0.287) | 6.621*** (0.297) | 7.202*** (0.362) | 6.455*** (0.377) |
| LN of total number of full-time workers | 0.147*** (0.029) | 0.128*** (0.030) | 0.086** (0.035) | 0.171*** (0.039) |
| LN of turnover | 0.210*** (0.022) | 0.165*** (0.023) | 0.191*** (0.027) | 0.142*** (0.030) |
| Share of activities completely outsourced | 0.154* (0.086) | 0.196** (0.086) | -0.855*** (0.130) | |
| Share of activities partially outsourced | 0.721*** (0.105) | 0.681*** (0.103) | -0.222* (0.126) | |
| Dummy for full in-house (0)/full outsourcing(1) | | | | -0.186* (0.106) |
| Guateng provincial dummy | | 0.182*** (0.066) | 0.167** (0.075) | 0.366*** (0.086) |
| Western Cape provincial dummy | | -0.151* (0.078) | 0.064 (0.098) | |
| sole proprietor dummy | | -0.322*** (0.094) | -0.531*** (0.116) | |
| Close corporation dummy | | -0.158** (0.072) | -0.202** (0.087) | |
| Manufacturing dummy | | -0.187** (0.089) | -0.189* (0.105) | -0.241** (0.119) |
| VAT | | 0.199* (0.114) | 0.220* (0.120) | |
| PAYE | | 0.275*** (0.099) | 0.236** (0.101) | 0.537*** (0.140) |
| Adj. R2 | 0.256 | 0.294 | 0.448 | 0.276 |
| N | 911 | 911 | 490 | 521 |
| Mean of the dependent variable | 9.700 | 9.700 | 9.864 | 9.421 |

*, **, *** Significance level of 10%, 5%, and 1%, respectively

Another way of looking at the influence of partial outsourcing on the overall cost of tax compliance is to look at it by different turnover groups. Figure 9 shows the results of the analysis by turnover groups.

Figure 9: Cost of outsourcing by turnover group (rand)



It can be seen that cost of compliance is higher if partial outsourcing is practiced (compared to firms who either use full outsourcing or do everything fully in-house). This trend exists in all turnover groups. Table 3 shows that these differences are statistically significant for most of the turnover groups (for all groups but 300 thousand - 1 million the difference is statistically significant on at least 5% level).

Table 3: T-test of mean difference: partial outsourcing by turnover group¹⁷

| Turnover group | N | T-test value |
|--------------------------|-----|----------------------|
| Less than 300 thousand | 173 | -4.445*** |
| 300 thousand – 1 million | 166 | -1.154 ¹⁸ |
| 1 – 6 million | 297 | -2.763*** |
| 6 – 14 million | 106 | -2.173** |
| Over 14 million | 90 | -2.079** |
| All turnover groups | 927 | -4.426*** |

** Significance at 5% level

*** Significance at 1% level

¹⁷ The difference was tested on the total cost of compliance comparing means of respondents using partial outsourcing and those not practicing it

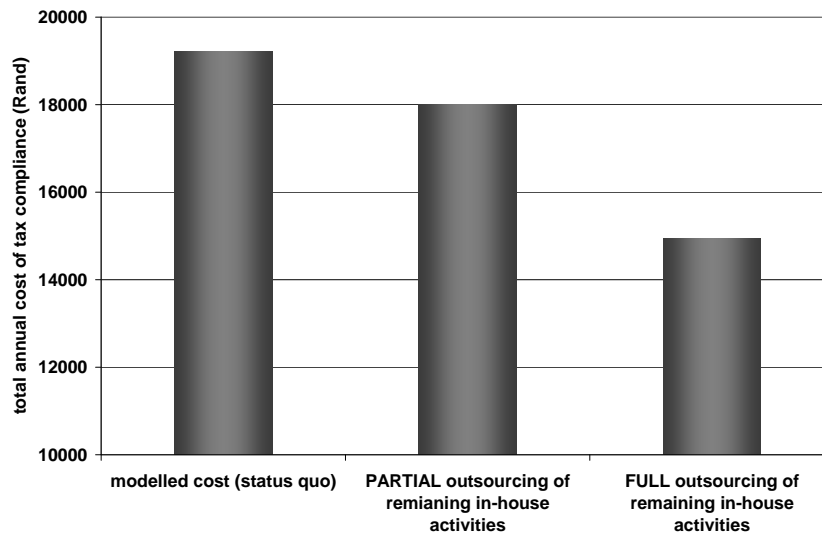
¹⁸ Although the difference is not significant for this group, if the group is split into subgroups by using Rand 500K as a split point, the difference is significant in both sub-groups on at least the 5% level.

The Restricted model includes only businesses that have outsourced at least some of their tax compliance activities, thus, have already engaged in the outsourcing. The results show that while increasing the share of outsourcing (either partial or full) would save business some money, the saving from full outsourcing is substantially higher.

It is also worth noting that the Restricted model increases the level of variation explained by the regression, while the Western Cape provincial dummy has lost significance and the regression coefficient flipped its sign to positive.

Figure 10 presents the results of the Restricted model graphically. This chart is based on values estimated based on results of testing the Restricted model. On average, for firms that have already started outsourcing some of their tax compliance work, 29.4% of activities are still completed in-house, 22.3% are partially outsourced, and 48.3% are fully outsourced. If the remaining work done in-house would be done using outside help, i.e. partially outsourced, then estimated cost would be reduced by about 6%; if it is fully outsourced, the cost could be reduced by 22%. It is important to keep in mind that these estimates are true for only those firms that are already outsourcing at least some of their tax compliance work.

Figure 10: Estimated cost of tax compliance for firms that are already outsourcing

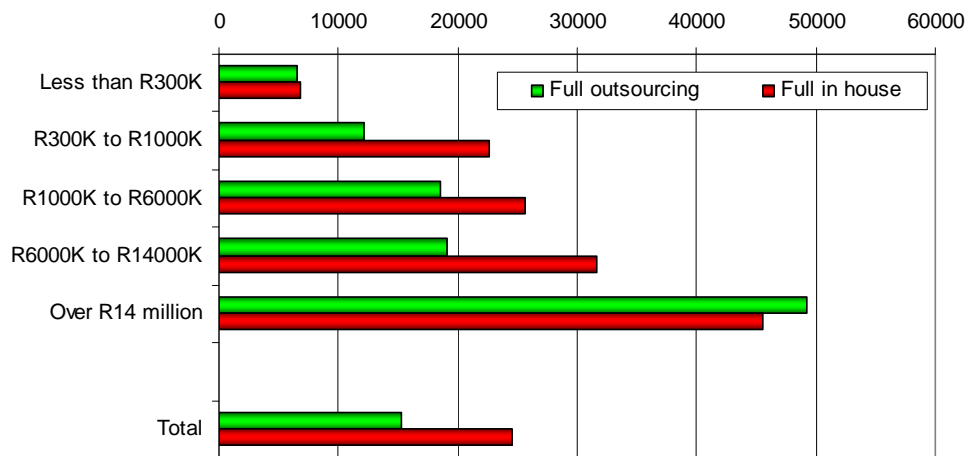


The Polarized model (i.e., excluding any partial outsourcing of activities) shows that on average, businesses that fully outsource tax compliance work have lower tax compliance cost than businesses that do all their tax compliance work in-house.

Figure 11 show that for every turnover group in the SMME sector, i.e. businesses with turnover under R14 million, full outsourcing of tax compliance work proves to be cheaper than having a full in-house service.

The overall conclusion from the Restricted and Polarized models is as follows. If a firm can do all tax compliance work in-house (mostly larger firms who can afford a full-time, qualified accountant and small firms without VAT or significant payroll taxes) it should continue doing so. If a firm has started to outsource (e.g., because it has grown larger and more complicated in terms of tax compliance), it is better to go all the way and fully outsource as much of tax the compliance work as it can.

Figure 11: Average cost of tax compliance work done fully in-house and fully outsourced



Based on the regression results discussed in this section we can not reject Hypothesis 1, i.e. it is unlikely that outsourcing of tax compliance work is more expensive than doing this work in-house for the majority of SMMEs in South Africa.

In order to strengthen the above conclusion, we also tested the sensitivity of our model to changes in “prices” of internal accounting services (i.e., salaries for in-house staff carrying out tax compliance work). Estimates of the total tax compliance cost used certain levels of gross monthly salaries for internal accountants (see Annex 1 for details). In order to test how sensitive our results are to changes in such costs, we adjusted prices up and down to 150% and 50% of the levels used for estimates of the above.

The results are summarized in the Table 4 below. The full set of results is given in Annex 5. Table 4 shows that for Basic, Base and Restricted models, *lower salaries* for in-house accountants (- 10%, -20%, etc.) do not change the fact that complete outsourcing of tax compliance work is cheaper than it partial outsourcing, though for obvious reasons the relative difference is getting smaller.

Table 4: Sensitivity analysis (coefficient and significance)

| | 50% | 40% | 30% | 20% | 10% | 0% | -10% | -20% | -30% | -40% | -50% |
|-----------------------------|--------|--------|--------|-------|--------|---------------|--------|-------|--------|--------|--------|
| Basic | | | | | | | | | | | |
| Share completely outsourced | -0.175 | -0.120 | -0.061 | 0.004 | 0.075 | 0.154 | 0.242 | 0.342 | 0.457 | 0.592 | 0.755 |
| significance | ** | | | | | * | *** | *** | *** | *** | *** |
| Share partially outsourced | 0.551 | 0.578 | 0.608 | 0.641 | 0.679 | 0.721 | 0.770 | 0.827 | 0.895 | 0.977 | 1.080 |
| significance | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| Base | | | | | | | | | | | |
| Share completely outsourced | -0.136 | -0.081 | -0.021 | 0.045 | 0.117 | 0.196 | 0.285 | 0.386 | 0.502 | 0.637 | 0.801 |
| significance | ~* | | | | | ** | *** | *** | *** | *** | *** |
| Share partially outsourced | 0.510 | 0.537 | 0.567 | 0.600 | 0.638 | 0.681 | 0.730 | 0.787 | 0.855 | 0.937 | 1.040 |
| significance | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| Restricted | | | | | | | | | | | |
| Share completely outsourced | -1.133 | -1.084 | -1.032 | - | -0.918 | -0.855 | -0.787 | - | -0.634 | -0.546 | -0.447 |
| significance | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| Share partially outsourced | -0.344 | -0.323 | -0.300 | - | -0.250 | -0.222 | -0.192 | - | -0.123 | -0.082 | -0.036 |
| significance | *** | ** | ** | ** | ** | * | | | | | |
| Polarized | | | | | | | | | | | |
| Dummy: full in-house (0) | -0.571 | -0.506 | -0.436 | - | -0.277 | -0.186 | -0.086 | 0.027 | 0.154 | 0.302 | 0.477 |
| significance | *** | *** | *** | *** | *** | * | | | | *** | *** |

*, **, *** Significance level of 10%, 5%, and 1%, respectively

When the *salaries of in-house accountants increase* (+10%, +20%, etc.) the benefits of full outsourcing become even more pronounced. For example, in the case of the Basic model, if the cost of internal accountants would go up by about 21% it would become cheaper to completely outsource tax compliance work than to have an accountant on payroll, i.e. coefficient for the share of complete outsourcing variable becomes negative (though this variable would be insignificant in the model until the cost would go up by 50%). In the case of the Base model, the pattern is about the same – when the in-house cost goes up by about 27%, the coefficient for the complete outsourcing variable changes its sign. In the case of the restricted model, higher salaries for in-house accountants do not change the fact that complete outsourcing of tax compliance work is cheaper than partial outsourcing, and both types of outsourcing are cheaper than doing tax compliance work fully in house, though for obvious reasons the relative difference between full and partial outsourcing is getting smaller.

In the case of the polarized model, an increase in the cost of in-house accountants makes full outsourcing more and more attractive compared to doing tax compliance work fully in-house. At the same time, a reduction of the cost of in-house accounting by about 17% would make it cheaper to do all tax compliance work in-house than to outsource it completely (and when the in-house cost goes down by about 35%, the relevant dummy variable again becomes significant in the polarized regression model).

4. Use of outsourcing at the post-filing stage of tax compliance procedures

A related set of questions about outsourcing of tax compliance work concerns post-filing issues such as queries from SARS, disagreement over assessments, inspections, and appeals. Since only about 6% of respondents reported any such experiences, the data were insufficient for rigorous testing of hypotheses. Nevertheless, analysis of the available data was suggestive.

When it comes to disagreeing with SARS assessments, it seems that outsourcing has no significant influence on a business whether to disagree with an assessment or not.

Analysis of *queries, inspections and audits* and their relation to outsourcing reveals that business having queries have a significantly higher outsourcing index¹⁹ (31% and 24%, respectively) than firms not having queries and similarly for inspections and audits²⁰ (32% and 25%, respectively).

One possible explanation for this is that some businesses have overall more complex tax accounting leading to both higher level of outsourcing and more frequent SARS

¹⁹ $t = 2.039$, significant at 5% level.

²⁰ $t = 1.812$, significant 10% level.

inspections and queries. The other explanation is related to direction of causality. It is possible that more frequent inspections, audits and queries actually stimulate the higher level of outsourcing.

Partial outsourcing may not be the result of any plan, but often instead results when a firm planning on doing everything in-house encounters unforeseen problems they can't handle. Available data do not allow us to test whether such a firm would have been better off fully outsourcing from the beginning or acquiring more in-house expertise from the beginning, but it's definitely easier to outsource on a short notice than to acquire an in-house expertise.

And finally, perhaps firms were taking a calculated risk. Many more may have taken the same risk and not encountered any unforeseen problems. In short, the survey results look at partial outsourcing *ex post*, thus partial outsourcing may look suboptimal, because firms that partially outsource disproportionately include firms encountering unforeseen problems. But a priori, it may have been optimal to plan on relying on in-house expertise but taking a risk that outsourcing might be necessary if a problem arose. The in-house sample includes the firms who took that risk and lucked out, so their costs *ex post* are lower. Unfortunately, in order to properly test the latter hypothesis one would need to randomly assign a large number of new firms to three groups (full outsourcing, partial outsourcing and in-house accounting) and run a long-term experimental study.

It is also possible that both explanations have their role in this phenomenon.

A similar effect is observed in the case of ***penalties and interests imposed*** as a result of late CIT and provisional tax submissions. Penalties and interest are more frequently²¹ imposed on businesses that outsource income and provisional tax compliance tasks (business who outsource these tasks are about 30% more likely to have these sanctions imposed than business that do not outsource these tasks).

Reverse causality may again be the most plausible explanation of this phenomenon - not that outsourcing causes lower or higher incidence of late submissions, but the incidence of these late submissions may lead to higher levels of outsourcing (although analyses of similar relations for VAT and PAYE/ UIF/ SDL have not shown the same tendency).²²

Another finding speaking in favor of reversed causality is connected to the relationship between ***e-filing*** and problems with SARS. It seems that businesses registered for e-filing tend to have problems with SARS more frequently.²³ The interpretation of this finding might be that businesses having problems with SARS are more likely to register for e-filing in an attempt to avoid or mitigate post filing problems (e.g., because it would remove one step which could allow for introduction of errors). Since the data suggests that e-filing and outsourcing are roughly substitutes for one another, it might also be

²¹ Chi square = 3.268, significant at about 8% level.

²² Some anecdotes from TPs suggest that some clients are slow in delivering documentation, leaving little time for the TPs, especially those with a large client base to meet all SARS deadlines.

²³ Chi square = 10.818, significant at 1% level.

possible that those who don't use e-filing are more likely to outsource and are less likely to make mistakes that would lead to problems with SARS.

Businesses requesting interest and penalties to be waived have a significantly lower outsourcing index than those who decided not to do so²⁴ (26% and 37% percent, respectively), i.e. businesses that are heavier users of tax consultant/tax practitioner expertise are significantly less likely to submit waiver requests than those who are relying more on in-house tax expertise²⁵. Businesses that do not outsource are 60% more likely to submit such a request.

An explanation for these results is similar to those suggested above for lodging an assessment appeal: it is either that for businesses outsourcing this activity, a request for waiver represents a direct monetary cost and they may be more reluctant to undertake it; or that a tax practitioner is more knowledgeable and thus knows when such a request would not have a positive result. Another possibility is that SARS may be more likely to accept tax returns prepared by professional TPs.

The number of observations for analysis of *success of requests to have penalties and interest waived* is too low for reliable analysis, however the ratio of success for requests handled by outsourced practitioners is approximately 2:3 (13 successes out of 19 attempts or success ratio of 0.68) and if handled by in house staff, the success ratio is approximately 7:8 (22 successes out of 25 attempts or success ratio of 0.88). A possible explanation of this finding is that tax practitioners are being hired in "more problematic" situations when chances of success are lower, thus their illusive lower efficiency.

When it comes to *lodging an appeal* to income and provisional tax assessments, the results show that the ratio of businesses outsourcing income and provisional tax tasks is lower among businesses deciding to lodge an appeal than it is in overall population. In other words businesses preparing income and provisional taxes "in house" are significantly²⁶ more likely to lodge an appeal than those outsourcing these tasks (2.6 times more likely, to be precise, though the overall share of business that lodged an appeal among all respondents is only about 4.5%).

There are two possible explanations for this phenomenon: one is that if this task is outsourced, lodging an appeal presents direct monetary cost (i.e., for the assistance of the TP) which some businesses might be reluctant to accept. Another explanation might be that tax practitioners have better knowledge about whether lodging an appeal is justified and they undertake this action less frequently knowing it would not yield positive results.

The last, but not least observation regarding the post-filing aspects of tax compliance is shown in Figure 12 below. It is clear that respondents who outsourced all their tax compliance work have the fewest problems with SARS: none to be precise. This finding supports a finding described earlier in this paper – partial outsourcing of tax compliance

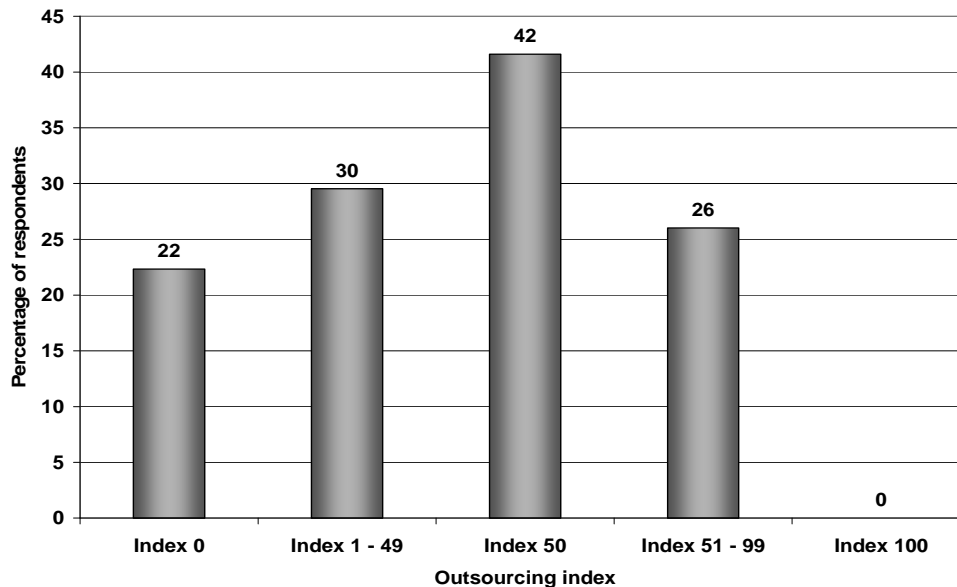
²⁴ $t = 2.281$, significant at 5% level.

²⁵ Chi square = 6.709, significant at 5% level.

²⁶ Chi square = 10.038, significant at 1% level.

work is the costliest solution – both in terms of monetary cost and potential problems with SARS.

Figure 12: Respondents reporting post-filing problems



5. Conclusions and Policy Implications

Conclusions

The SMME survey clearly showed TPs are an important resource for SMMEs, with 57% of respondents reporting at least some outsourcing of tax compliance work. While many of the larger SMMEs say they have the necessary tax expertise on their staff, smaller firms often find it more cost-effective to outsource tax preparation and related activities on a fee-for-service basis, although some respondents claimed they could not afford it.

The decision whether or not to outsource in South Africa is dominated by the availability of the necessary expertise. Almost three quarters of SMMEs who outsource say they do it because “tax is a specialized field” and they presumably lack such specialized skills among their own staff. Conversely, for those giving reasons for not outsourcing, 80% reported that they “have sufficient in-house expertise.”

However, ten percent of SMMEs who were not outsourcing tax-related tasks said the reason was that “it costs too much to outsource.” As expected, these responses were mostly to be found among the lowest turnover bands: 24% of firms with a turnover under R300,000 gave this response.

Looking at SMMEs by size, the outsourcing index is highest for firms with the lowest turnover, and it falls steadily as turnover increases. For all but the largest SMMEs, the largest category is “partial outsourcing” followed by “in house only.” The pattern is even more pronounced gauging firm size by the number of employees. While only 45% of firms with over 100 employees engage in any outsourcing, 67% of firms with three or fewer employees outsource at least some of their tax work, and a majority of them use a mix of outsourcing and in-house resources.

The survey asked about outsourcing of 17 different tax-related activities, from filling out basic tax returns for key taxes to lodging appeals against SARS assessments. As expected, the most routine tasks are most likely to be undertaken in-house, e.g., general bookkeeping and preparing regular tax returns for VAT and payroll taxes, for which two-thirds of firms report using in-house resources exclusively. Tasks that are less routine and more complicated are more likely to be outsourced. Reliance on in-house resources drops to 50 – 55% of firms for compilation of annual financial statements, CIT and provisional tax, (as well as filing appeals with SARS).

It is also worth noting that for any individual activity, only a small minority (9 – 13%) of SMMEs report “partial outsourcing” (i.e., a mix of in-house and outsourcing).

A closer examination of SMMEs who “partially outsource” some or all of their tax work (i.e., those who report some outsourcing and some in-house work for their accounting and/or tax compliance tasks) shows that this approach to tax compliance is both quite common in South Africa (46% of all SMMEs, the largest single category) and apparently the most expensive.

If we compare SMMEs who outsource fully (11% of SMMEs) with those who utilize only in-house resources (43% of SMMEs), we see that the largest firms (those over R14 million turnover) find in-house work slightly less expensive than outsourcing. For the smallest firms (those under R300,000 annual turnover, who are less likely to be registered for VAT and probably have smaller/simpler payroll), the cost of in-house vs. outsourcing is almost the same. However, for most SMMEs between R300,000 and R 14 million, full outsourcing appears to be significantly cheaper than full in-house work.

Further, when we compare “full outsourcing” with “partial outsourcing” (among firms who do any outsourcing at all), we see that full outsourcing would be much more cost-effective for them. For firms that do any outsourcing, the status quo is (on average) over R19,000 per year. If they fully outsourced all their activities currently done fully in-house, this figure could be reduced to just over R15,000 per year. Sensitivity analysis on costs of in-house tax compliance work shows the signs of the coefficients are robust.

Thus the survey data suggest that “partial outsourcing” appears to involve a substantial amount of duplicated work. On the basis of interviews with FIAs, several TPs have described many SMME clients who provide them with their bookkeeping and perhaps some initial effort at preparing tax documents. However, before the tax returns (or similar tax-related documents) can be finalized, the TP must, at a minimum, check the quality of

the work done by their client and often go back and correct errors (due to misunderstandings about SARS regulations, calculation errors, etc.). Thus work is carried out twice – once by the SMME using in-house resources and then re-done (or at least re-checked, which also takes time) by the TP. In this situation, most SMMEs would have been better off outsourcing all the work from the outset to a professional tax practitioner.

However, it is also possible that partial outsourcing may appear more expensive than in-house tax compliance work “after the fact” if such firms tend to resort to TPs only after they have started to encounter problems. Therefore, the next questions addressed in this analysis were differences between SMMEs who outsourced various “post-filing” activities and those who did them in-house. As noted above, post-filing tasks are more likely to be outsourced than more simple and routine tax returns. However, these tasks are themselves relatively rare, with only about 6% of SMMEs reporting any experience with them in the survey. In general, the incidence of post-filing issues is positively associated with outsourcing (except that firms that fully outsource everything reported no post-filing issues at all).

With regard to late submissions and related penalties/interest, TPs interviewed by FIAS noted that many clients wait until the last minute to bring their accounts and documentation to their TP, who are then overwhelmed and unable to complete all the work by the statutory deadlines.

With regard to other “post-filing issues”, one possibility is that SMMEs are more likely to hire an outside TP when their business activities are relatively more complicated and/or when they have started to encounter problems. In this view, the causality runs from “complications” to “hire a TP”. If so, the best approach would be to encourage businesses to bring in the necessary expertise sooner rather than later – better to avoid and prepare for possible problems than try to fix them after they have occurred.

Another possible interpretation of the positive relationship between outsourcing and post-filing issues, however, is that there may be a number of poorly-qualified TPs serving SMMEs, including TPs who may have been certified in the past but fail to keep up with changing tax laws, regulations and interpretations.

Policy Implications

The data on SMEs in South Africa display an inverted “U” shape for outsourcing of tax compliance tasks: the smallest firms – (those under R 300,000 turnover or well under US\$50,000) tend not to outsource, due to a combination of relatively higher cost-burden and less complexity (e.g., less likelihood to be registered for VAT, smaller/simpler payroll), while relatively larger firms (e.g., those with over R14 million turnover or about US\$ 2 million) report they have sufficient in-house capacity and therefore no need to outsource. Those in the middle are most likely to outsource at least some of their tax compliance work. Further, those who engage in “partial outsourcing” appear to be duplicating efforts: it appears work is first attempted in-house and then external (and

presumably more highly-qualified) assistance is recruited. The external tax practitioner must, at a minimum, check the work done in-house and may have to correct errors. Thus, it appears that for any firm that has felt the need to resort to outsourcing, it would be more cost-effective for them to fully outsource all their tax compliance activities. Those who do, also appear to avoid post-filing problems as well.

In the case of South Africa, the NT and SARS have designed a new, optional “turnover tax” to replace corporate income tax and provisional tax for firms with a turnover under R 1 million (about US\$150,000), and are also raising the threshold for mandatory VAT registration to R 1 million as of early 2009. This is intended to simplify tax compliance for the smallest firms, with the hope they can manage tax compliance without the need to hire expensive tax practitioners. However, the survey evidence suggests that many firms between R1 - 14 million turnover (as well as those under R 1 million who may feel the need to register for VAT, as well as the regular CIT and provisional tax) are currently facing unnecessarily high tax compliance costs by employing partial outsourcing, and that they would be better off fully outsourcing (at least until it becomes cost-effective for them to hire a qualified, full-time accountant).

How to encourage this?

In the case of South Africa, a first step could be to publicize the results of the survey and try to ensure that SMMEs are aware first of the need to ensure they (or their staff or their tax practitioner) have the requisite skills to carry out the work, and also of the cost savings of “full outsourcing” vs. “partial outsourcing.”²⁷

It would also be a good idea to try to expand the ranks of qualified TPs in South Africa, especially those likely to serve the SMME sector. This could include a combination of expansion of “certificate” courses offered by the education system, the relevant accounting/bookkeeping Associations, and/or SARS itself. It may be helpful to make a distinction between general bookkeeping skills needed by entrepreneurs running small businesses and likely to use the new simplified tax regime (i.e., so they may be able to handle their tax compliance work in-house without necessarily having to hire a TP) and “certificate” courses (at various levels) for bookkeepers and accountants who may need to handle the regular CIT, provisional tax, VAT and payroll taxes.

Other options, especially those that may involve subsidies, “tax breaks” or further reforms to tax administration or tax policy should probably wait until after the new small business tax regime has been enacted and small businesses have had an opportunity to learn to work with it. Further monitoring after that may yield more useful information to guide future reforms in South Africa.

²⁷ South Africa already allows businesses to deduct the cost of a TP as an expense in the calculation of taxable income.

Annex 1: Calculation of total tax compliance cost

Calculation of the total tax compliance cost

1. Q16a was recoded²⁸. For all respondents who didn't provide exact answer and did provide a category a middle category point was taken as a value.
2. One outlier (15 million rand) was taken out of the calculation.
3. The highest category was replaced with the minimal recorded value of those respondents providing exact figure - 200K rand (the new variable in the database is a16a).
4. Q17a and b were combined and variable was created with sum of all employees time shares spent on tax accounting (the new variable in the database is a17ab).
5. Gross monthly salaries of inside accountants were estimated based on firm turnover band. The assumption is that accountants in the larger firms have higher salaries. The following estimates were used:
 - (a) Up to 300 K rand the salary is estimated at 6 000 rand
 - (b) 300K – 1 million – 10 000 rand
 - (c) 1 – 6 million – 12 000 rand
 - (d) More than 6 million – 15 000 rand
6. For respondents not providing information about their turnover, number of employees was taken as a proxy based on the analysis of cross-tabulation between number of employees and turnover (the new variable in the database is “salary”):
 - (a) 3 or less employees – 6 000 rand
 - (b) 4 – 6 employees – 11 000 rand (approximately same share of respondents belonged to groups 2 and 3 in above turnover categories)
 - (c) 7 – 15 employees – 12 000 rand
 - (d) 16 – 30 employees – 12 000 rand
 - (e) 31 employees or more – 15 000 rand.
7. Annual cost of staff was calculated by multiplying monthly gross salary by 12 (months) and adding 20% for overhead (the new variable in the database is “salary2”).
8. The full salary variable (“salary2”) was multiplied by the value of “sum of employees’ time shares spent on tax accounting (variable a17ab in the database)

²⁸ For details, please refer to:

[http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaFormalSMMETaxComplianceReport2008/\\$FILE/Formal+SMME+Tax+Compliance+Report1.pdf](http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaFormalSMMETaxComplianceReport2008/$FILE/Formal+SMME+Tax+Compliance+Report1.pdf)

- to get the cost of “in-house” part of tax accounting cost, i.e. accounting work that was not outsources (the variable in the database is “inside”).
9. In-house part was added to the cost of outsourcing (variable a16a) to get the total cost of tax compliance (the new variable in the database is “totcost”)²⁹.
 10. Cost per employee was also calculated (the new variable in the database is “totcosthead”).

Calculation of compliance cost for specific taxes

11. Cost of processing and submitting income and provisional tax returns on annual base was calculated, but only for respondents doing everything “in house” (the new variable in the database is “costprovincome”). Parameters used in previous calculation were used here as well.
12. Similarly, cost of processing and submitting of the VAT tax forms was estimates for respondents who has done everything “in-house (the new variable in the database is “costVAT”).
13. The values of the above two variables were caqlculated as follows: number of submissions multiplied by the number of hours per submission multiplied by the cost of an hour of work. The latter was calculated from salary cost calculated in previous section based on 1840 working hours per year.

²⁹ Excluding any deductions of compliance costs in the calculations for Corporate Income Tax.

Annex 2: Calculation of outsourcing indexes

Overall outsourcing index

1. The overall outsourcing index was calculated by assigning scores to values registered in various items under question 14.³⁰ Score 0 was assigned if certain activity was completed by employees of the respondent company (in-house), score 1 was assigned if activity was completed by both employees and outside consultant (partial outsourcing), and score 2 was assigned if the activity was completed entirely by outside consultant (full outsourcing). These scores were summed up for all 17 activities covered in the question 14 and divided by a maximum possible number of points for each respondent (e.g. if a certain respondent was involved in 15 out of 17 activities than the maximum number of points is 30). The number was multiplied by 100 to achieve results on a scale with the minimum of 0 points (for respondents who did everything in-house) and a maximum of 100 points (for respondents who completely outsourced all tasks). (the new variable in the database is “io100”)

Complete outsourcing index

2. This index actually represents a share of specific activities defined under question 14 completely outsourced (code 3 in question 14) for each specific respondent. It must be noticed that this is a share of all tasks specific respondent *was involved in*, not of all 17 possible tasks (the new variable in the database is indexoutside).

Partial outsourcing index

3. This index was calculated in the same manner as the previous one, but for the tasks which were partially outsourced, i.e. it represents the share of partially outsourced tasks (code 4 in question 14). (the new variable in the database is “indexpartial”)

“In house” index

This index was calculated in the same manner as the previous two, only it represents the share of activities done exclusively “in house” (codes 1, 2 and 6 in question 14). (the new variable in the database is “indexalone”)

³⁰ For details please refer to:
[http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaFormalSMMETaxComplianceReport2008/\\$FILE/Formal+SMME+Tax+Compliance+Report1.pdf](http://www.ifc.org/ifcext/fias.nsf/AttachmentsByTitle/SouthAfricaFormalSMMETaxComplianceReport2008/$FILE/Formal+SMME+Tax+Compliance+Report1.pdf)

Annex 3: Imputation procedure for Turnover

The survey sample of formal business in South Africa was derived using SARS information on firms' reported turnover in 2005. These turnover numbers were provided in the form of turnover bands (i.e., under R70 thousand, R70 to R300 thousand, and so on in the same fashion as being used in the analysis presented in this paper). In order to estimate turnover values for businesses that refused to provide such information to interviewers we used the following OLS model.

For the test we used the following OLS model:

$$\ln(\text{Turn}) = \ln(\text{Emp}_{\text{full-time}}) + D_{\text{turnover}} + e, \text{ where:}$$

$\ln(\text{Turn}_{\text{full-time}})$ – ln total turnover,

$\ln(\text{Emp}_{\text{full-time}})$ – ln fill-time employment,

D_{turnover} – dummy variables for turnover bands, including DK/Refusal/Unsure.

The results are shown in the tables below.

Table A4.1: OLS Regression Results (Dependent Variable: LN turnover (q55))

| | Coeff. (unstand.) | Std. Error | Signif. |
|--------------------------------|-------------------|------------|---------|
| (Constant) | 10.682 | 0.126 | *** |
| LN full-time employees | 0.147 | 0.023 | *** |
| 70K to 300K | 1.291 | 0.138 | *** |
| 300K to 1,000K | 2.547 | 0.135 | *** |
| 1,000K to 6,000K | 3.894 | 0.133 | *** |
| 6,000K to 14,000K | 4.947 | 0.147 | *** |
| over 14,000K | 5.970 | 0.158 | *** |
| DK/Unsure/Refusal | 2.961 | 0.311 | *** |
| Adj. R2 | 0.873 | | |
| N | 734 | | |
| Mean of the dependent variable | 14.442 | | |

Table A4.2: Residuals statistics

| | Minimum | Maximum | Mean | Std. Deviation | N |
|----------------------|---------|---------|--------|----------------|-----|
| Predicted Value | 10.682 | 17.637 | 14.442 | 1.672 | 734 |
| Residual | -4.594 | 4.377 | 0.000 | 0.635 | 734 |
| Std. Predicted Value | -2.248 | 1.911 | 0.000 | 1.000 | 734 |
| Std. Residual | -7.202 | 6.862 | 0.000 | 0.995 | 734 |

Based on the high explanatory power of the model above we decided to use predicted turnover values for imputation. Predictions were used only to replace missing turnover values for respondents who refused to provide exact volumes of turnover in rand (247 respondents). Missing values for respondents who stated that they do not know turnover volumes (19 respondents) were not imputed.

Annex 4: Sensitivity analysis

Sensitivity analysis: Basic model

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|---------------|------|
| (Constant) | 6.672 | 0.288 | 0.0% |
| LN full-time employees | 0.144 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.208 | 0.022 | 0.0% |
| Share of activities completely outsourced | -0.175 | 0.087 | 4.4% |
| Share of activities partially outsourced | 0.551 | 0.105 | 0.0% |
| Adj. R2 | 0.261 | | |
| Mean of the dependent variable | 9.990 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|---------------|-------|
| (Constant) | 6.599 | 0.288 | 0.0% |
| LN full-time employees | 0.145 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.208 | 0.022 | 0.0% |
| Share of activities completely outsourced | -0.120 | 0.087 | 16.5% |
| Share of activities partially outsourced | 0.578 | 0.105 | 0.0% |
| Adj. R2 | 0.259 | | |
| Mean of the dependent variable | 9.940 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|---------------|-------|
| (Constant) | 6.520 | 0.287 | 0.0% |
| LN full-time employees | 0.145 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.209 | 0.022 | 0.0% |
| Share of activities completely outsourced | -0.061 | 0.086 | 48.2% |
| Share of activities partially outsourced | 0.608 | 0.105 | 0.0% |
| Adj. R2 | 0.257 | | |
| Mean of the dependent variable | 9.886 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|---------------|-------|
| (Constant) | 6.435 | 0.287 | 0.0% |
| LN full-time employees | 0.146 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.209 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.004 | 0.086 | 96.3% |
| Share of activities partially outsourced | 0.641 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.256 |
| Mean of the dependent variable | 9.828 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.342 | 0.287 | 0.0% |
| LN full-time employees | 0.146 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.209 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.075 | 0.086 | 38.4% |
| Share of activities partially outsourced | 0.679 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.256 |
| Mean of the dependent variable | 9.766 |

Dependent Variable: LN of total cost of tax compliance

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.240 | 0.287 | 0.0% |
| LN full-time employees | 0.147 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.210 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.154 | 0.086 | 7.5% |
| Share of activities partially outsourced | 0.721 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.256 |
| Mean of the dependent variable | 9.699 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.126 | 0.287 | 0.0% |
| LN full-time employees | 0.148 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.211 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.242 | 0.086 | 0.5% |
| Share of activities partially outsourced | 0.770 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.258 |
| Mean of the dependent variable | 9.626 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.999 | 0.288 | 0.0% |
| LN full-time employees | 0.148 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.212 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.342 | 0.087 | 0.0% |
| Share of activities partially outsourced | 0.827 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.261 |
| Mean of the dependent variable | 9.545 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.854 | 0.289 | 0.0% |
| LN full-time employees | 0.149 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.213 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.457 | 0.087 | 0.0% |
| Share of activities partially outsourced | 0.895 | 0.105 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.267 |
| Mean of the dependent variable | 9.455 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.686 | 0.291 | 0.0% |
| LN full-time employees | 0.150 | 0.029 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.214 | 0.022 | 0.0% |
| Share of activities completely outsourced | 0.592 | 0.087 | 0.0% |
| Share of activities partially outsourced | 0.977 | 0.106 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.276 |
| Mean of the dependent variable | 9.353 |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.487 | 0.293 | 0.0% |
| LN full-time employees | 0.151 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.216 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.755 | 0.088 | 0.0% |
| Share of activities partially outsourced | 1.080 | 0.107 | 0.0% |

| | |
|--------------------------------|-------|
| Adj. R2 | 0.289 |
| Mean of the dependent variable | 9.237 |

Sensitivity analysis: Base model

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.042 | 0.298 | 0.0% |
| LN full-time employees | 0.126 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.164 | 0.023 | 0.0% |
| Share of activities completely outsourced | -0.136 | 0.086 | 11.4% |

| | | | |
|--|--------|-------|-------|
| Share of activities partially outsourced | 0.510 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.174 | 0.067 | 0.9% |
| Western Cape provincial dummy | -0.164 | 0.078 | 3.7% |
| sole proprietor dummy | -0.312 | 0.094 | 0.1% |
| close corporation dummy | -0.142 | 0.072 | 4.8% |
| Manufacturing | -0.197 | 0.089 | 2.7% |
| VAT | 0.180 | 0.114 | 11.4% |
| PAYE | 0.292 | 0.099 | 0.3% |
| Adj. R2 | 0.298 | | |
| Mean of the dependent variable | 9.990 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.971 | 0.298 | 0.0% |
| LN full-time employees | 0.127 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.164 | 0.023 | 0.0% |
| Share of activities completely outsourced | -0.081 | 0.086 | 34.8% |
| Share of activities partially outsourced | 0.537 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.176 | 0.067 | 0.8% |
| Western Cape provincial dummy | -0.161 | 0.078 | 4.0% |
| sole proprietor dummy | -0.314 | 0.094 | 0.1% |
| close corporation dummy | -0.145 | 0.072 | 4.4% |
| Manufacturing | -0.195 | 0.089 | 2.8% |
| VAT | 0.183 | 0.114 | 10.8% |
| PAYE | 0.290 | 0.099 | 0.4% |
| Adj. R2 | 0.296 | | |
| Mean of the dependent variable | 9.940 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.895 | 0.297 | 0.0% |
| LN full-time employees | 0.127 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.164 | 0.023 | 0.0% |
| Share of activities completely outsourced | -0.021 | 0.086 | 80.9% |
| Share of activities partially outsourced | 0.567 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.177 | 0.067 | 0.8% |
| Western Cape provincial dummy | -0.159 | 0.078 | 4.3% |
| sole proprietor dummy | -0.315 | 0.094 | 0.1% |
| close corporation dummy | -0.148 | 0.072 | 3.9% |
| Manufacturing | -0.193 | 0.089 | 3.0% |
| VAT | 0.187 | 0.114 | 10.1% |
| PAYE | 0.287 | 0.099 | 0.4% |
| Adj. R2 | 0.295 | | |
| Mean of the dependent variable | 9.886 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+20% across the board)

| | Coeff. | Std. Error | Sig. |
|------------|--------|------------|------|
| (Constant) | 6.811 | 0.297 | 0.0% |

| | | | |
|--|--------|-------|-------|
| LN full-time employees | 0.127 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.164 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.045 | 0.086 | 60.4% |
| Share of activities partially outsourced | 0.600 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.179 | 0.066 | 0.7% |
| Western Cape provincial dummy | -0.156 | 0.078 | 4.7% |
| sole proprietor dummy | -0.317 | 0.094 | 0.1% |
| close corporation dummy | -0.151 | 0.072 | 3.5% |
| Manufacturing | -0.191 | 0.089 | 3.1% |
| VAT | 0.190 | 0.114 | 9.5% |
| PAYE | 0.283 | 0.099 | 0.4% |
| Adj. R2 | 0.294 | | |
| Mean of the dependent variable | 9.828 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.721 | 0.297 | 0.0% |
| LN full-time employees | 0.128 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.165 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.117 | 0.086 | 17.6% |
| Share of activities partially outsourced | 0.638 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.180 | 0.066 | 0.7% |
| Western Cape provincial dummy | -0.153 | 0.078 | 5.0% |
| sole proprietor dummy | -0.319 | 0.094 | 0.1% |
| close corporation dummy | -0.155 | 0.072 | 3.1% |
| Manufacturing | -0.189 | 0.089 | 3.3% |
| VAT | 0.194 | 0.114 | 8.8% |
| PAYE | 0.280 | 0.099 | 0.5% |
| Adj. R2 | 0.293 | | |
| Mean of the dependent variable | 9.766 | | |

Dependent Variable: LN of total cost of tax compliance

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.621 | 0.297 | 0.0% |
| LN full-time employees | 0.128 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.165 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.196 | 0.086 | 2.3% |
| Share of activities partially outsourced | 0.681 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.182 | 0.066 | 0.6% |
| Western Cape provincial dummy | -0.151 | 0.078 | 5.4% |
| sole proprietor dummy | -0.321 | 0.094 | 0.1% |
| close corporation dummy | -0.158 | 0.072 | 2.8% |
| Manufacturing | -0.187 | 0.089 | 3.6% |
| VAT | 0.199 | 0.114 | 8.1% |
| PAYE | 0.275 | 0.099 | 0.6% |
| Adj. R2 | 0.294 | | |
| Mean of the dependent variable | 9.699 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.510 | 0.297 | 0.0% |
| LN full-time employees | 0.128 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.166 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.285 | 0.086 | 0.1% |
| Share of activities partially outsourced | 0.730 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.183 | 0.067 | 0.6% |
| Western Cape provincial dummy | -0.148 | 0.078 | 5.8% |
| sole proprietor dummy | -0.323 | 0.094 | 0.1% |
| close corporation dummy | -0.162 | 0.072 | 2.4% |
| Manufacturing | -0.184 | 0.089 | 3.8% |
| VAT | 0.204 | 0.114 | 7.4% |
| PAYE | 0.271 | 0.099 | 0.6% |
| Adj. R2 | 0.295 | | |
| Mean of the dependent variable | 9.626 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.386 | 0.298 | 0.0% |
| LN full-time employees | 0.128 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.166 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.386 | 0.086 | 0.0% |
| Share of activities partially outsourced | 0.787 | 0.103 | 0.0% |
| Guateng provincial dummy | 0.185 | 0.067 | 0.6% |
| Western Cape provincial dummy | -0.146 | 0.078 | 6.3% |
| sole proprietor dummy | -0.326 | 0.094 | 0.1% |
| close corporation dummy | -0.166 | 0.072 | 2.1% |
| Manufacturing | -0.181 | 0.089 | 4.2% |
| VAT | 0.210 | 0.114 | 6.6% |
| PAYE | 0.265 | 0.099 | 0.8% |
| Adj. R2 | 0.298 | | |
| Mean of the dependent variable | 9.545 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.245 | 0.299 | 0.0% |
| LN full-time employees | 0.129 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.167 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.502 | 0.087 | 0.0% |
| Share of activities partially outsourced | 0.855 | 0.104 | 0.0% |
| Guateng provincial dummy | 0.187 | 0.067 | 0.5% |
| Western Cape provincial dummy | -0.144 | 0.079 | 6.8% |
| sole proprietor dummy | -0.329 | 0.095 | 0.1% |
| close corporation dummy | -0.171 | 0.072 | 1.8% |
| Manufacturing | -0.178 | 0.089 | 4.6% |

| | | | |
|--------------------------------|-------|-------|------|
| VAT | 0.217 | 0.115 | 5.9% |
| PAYE | 0.259 | 0.100 | 1.0% |
| Adj. R2 | 0.304 | | |
| Mean of the dependent variable | 9.455 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.082 | 0.301 | 0.0% |
| LN full-time employees | 0.129 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.169 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.637 | 0.087 | 0.0% |
| Share of activities partially outsourced | 0.937 | 0.104 | 0.0% |
| Guateng provincial dummy | 0.189 | 0.067 | 0.5% |
| Western Cape provincial dummy | -0.142 | 0.079 | 7.3% |
| sole proprietor dummy | -0.333 | 0.095 | 0.1% |
| close corporation dummy | -0.175 | 0.073 | 1.6% |
| Manufacturing | -0.175 | 0.090 | 5.1% |
| VAT | 0.224 | 0.115 | 5.2% |
| PAYE | 0.251 | 0.100 | 1.3% |
| Adj. R2 | 0.312 | | |
| Mean of the dependent variable | 9.353 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.888 | 0.304 | 0.0% |
| LN full-time employees | 0.130 | 0.030 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.170 | 0.023 | 0.0% |
| Share of activities completely outsourced | 0.801 | 0.088 | 0.0% |
| Share of activities partially outsourced | 1.040 | 0.105 | 0.0% |
| Guateng provincial dummy | 0.190 | 0.068 | 0.5% |
| Western Cape provincial dummy | -0.142 | 0.080 | 7.7% |
| sole proprietor dummy | -0.337 | 0.096 | 0.0% |
| close corporation dummy | -0.180 | 0.073 | 1.4% |
| Manufacturing | -0.172 | 0.091 | 5.9% |
| VAT | 0.234 | 0.116 | 4.5% |
| PAYE | 0.242 | 0.101 | 1.7% |
| Adj. R2 | 0.324 | | |
| Mean of the dependent variable | 9.235 | | |

Sensitivity analysis: Restricted model

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.575 | 0.370 | 0.0% |
| LN full-time employees | 0.082 | 0.036 | 2.4% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.190 | 0.028 | 0.0% |
| Share of activities completely outsourced | -1.133 | 0.133 | 0.0% |
| Share of activities partially outsourced | -0.344 | 0.129 | 0.8% |
| Guateng provincial dummy | 0.152 | 0.077 | 4.9% |
| Western Cape provincial dummy | 0.028 | 0.100 | 78.2% |
| sole proprietor dummy | -0.511 | 0.118 | 0.0% |
| close corporation dummy | -0.167 | 0.089 | 6.2% |
| Manufacturing | -0.206 | 0.107 | 5.4% |
| VAT | 0.200 | 0.123 | 10.4% |
| PAYE | 0.253 | 0.104 | 1.5% |
| Adj. R2 | 0.465 | | |
| Mean of the dependent variable | 10.059 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.510 | 0.368 | 0.0% |
| LN full-time employees | 0.082 | 0.036 | 2.2% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.190 | 0.028 | 0.0% |
| Share of activities completely outsourced | -1.084 | 0.132 | 0.0% |
| Share of activities partially outsourced | -0.323 | 0.128 | 1.2% |
| Guateng provincial dummy | 0.155 | 0.077 | 4.4% |
| Western Cape provincial dummy | 0.034 | 0.099 | 73.1% |
| sole proprietor dummy | -0.514 | 0.117 | 0.0% |
| close corporation dummy | -0.173 | 0.089 | 5.2% |
| Manufacturing | -0.203 | 0.106 | 5.7% |
| VAT | 0.203 | 0.122 | 9.7% |
| PAYE | 0.250 | 0.103 | 1.6% |
| Adj. R2 | 0.462 | | |
| Mean of the dependent variable | 10.024 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 7.440 | 0.366 | 0.0% |
| LN full-time employees | 0.083 | 0.036 | 2.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.190 | 0.027 | 0.0% |
| Share of activities completely outsourced | -1.032 | 0.132 | 0.0% |
| Share of activities partially outsourced | -0.300 | 0.128 | 1.9% |
| Guateng provincial dummy | 0.158 | 0.076 | 3.9% |

| | | | |
|--------------------------------|--------|-------|-------|
| Western Cape provincial dummy | 0.041 | 0.099 | 67.9% |
| sole proprietor dummy | -0.518 | 0.117 | 0.0% |
| close corporation dummy | -0.179 | 0.088 | 4.2% |
| Manufacturing | -0.200 | 0.106 | 6.0% |
| VAT | 0.207 | 0.121 | 8.9% |
| PAYE | 0.247 | 0.103 | 1.6% |
| Adj. R2 | 0.459 | | |
| Mean of the dependent variable | 9.987 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.367 | 0.364 | 0.0% |
| LN full-time employees | 0.084 | 0.036 | 1.9% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.191 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.977 | 0.131 | 0.0% |
| Share of activities partially outsourced | -0.276 | 0.127 | 3.0% |
| Guateng provincial dummy | 0.161 | 0.076 | 3.5% |
| Western Cape provincial dummy | 0.048 | 0.099 | 62.4% |
| sole proprietor dummy | -0.522 | 0.116 | 0.0% |
| close corporation dummy | -0.186 | 0.088 | 3.4% |
| Manufacturing | -0.197 | 0.105 | 6.3% |
| VAT | 0.211 | 0.121 | 8.1% |
| PAYE | 0.244 | 0.102 | 1.7% |
| Adj. R2 | 0.456 | | |
| Mean of the dependent variable | 9.948 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.287 | 0.363 | 0.0% |
| LN full-time employees | 0.085 | 0.035 | 1.7% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.191 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.918 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.250 | 0.127 | 4.9% |
| Guateng provincial dummy | 0.164 | 0.076 | 3.1% |
| Western Cape provincial dummy | 0.056 | 0.098 | 56.8% |
| sole proprietor dummy | -0.526 | 0.116 | 0.0% |
| close corporation dummy | -0.194 | 0.087 | 2.7% |
| Manufacturing | -0.193 | 0.105 | 6.7% |
| VAT | 0.216 | 0.120 | 7.4% |
| PAYE | 0.240 | 0.102 | 1.9% |
| Adj. R2 | 0.452 | | |
| Mean of the dependent variable | 9.908 | | |

Dependent Variable: LN of total cost of tax compliance

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.202 | 0.362 | 0.0% |
| LN full-time employees | 0.086 | 0.035 | 1.6% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.191 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.855 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.222 | 0.126 | 7.9% |
| Guateng provincial dummy | 0.167 | 0.075 | 2.7% |
| Western Cape provincial dummy | 0.064 | 0.098 | 51.0% |
| sole proprietor dummy | -0.531 | 0.116 | 0.0% |
| close corporation dummy | -0.202 | 0.087 | 2.1% |
| Manufacturing | -0.189 | 0.105 | 7.1% |
| VAT | 0.220 | 0.120 | 6.7% |
| PAYE | 0.236 | 0.101 | 2.0% |
| Adj. R2 | 0.448 | | |
| Mean of the dependent variable | 9.864 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.110 | 0.361 | 0.0% |
| LN full-time employees | 0.086 | 0.035 | 1.5% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.192 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.787 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.192 | 0.126 | 12.8% |
| Guateng provincial dummy | 0.170 | 0.075 | 2.4% |
| Western Cape provincial dummy | 0.073 | 0.098 | 45.3% |
| sole proprietor dummy | -0.537 | 0.115 | 0.0% |
| close corporation dummy | -0.211 | 0.087 | 1.6% |
| Manufacturing | -0.185 | 0.104 | 7.7% |
| VAT | 0.226 | 0.120 | 6.0% |
| PAYE | 0.232 | 0.101 | 2.2% |
| Adj. R2 | 0.444 | | |
| Mean of the dependent variable | 9.818 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 7.009 | 0.360 | 0.0% |
| LN full-time employees | 0.087 | 0.035 | 1.4% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.192 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.714 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.159 | 0.126 | 20.7% |
| Guateng provincial dummy | 0.174 | 0.075 | 2.1% |
| Western Cape provincial dummy | 0.083 | 0.097 | 39.5% |

| | | | |
|--------------------------------|--------|-------|------|
| sole proprietor dummy | -0.543 | 0.115 | 0.0% |
| close corporation dummy | -0.220 | 0.087 | 1.1% |
| Manufacturing | -0.181 | 0.104 | 8.4% |
| VAT | 0.232 | 0.120 | 5.3% |
| PAYE | 0.227 | 0.101 | 2.5% |
| Adj. R2 | 0.438 | | |
| Mean of the dependent variable | 7.768 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.898 | 0.361 | 0.0% |
| LN full-time employees | 0.088 | 0.035 | 1.3% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.193 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.634 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.123 | 0.126 | 33.1% |
| Guateng provincial dummy | 0.178 | 0.075 | 1.8% |
| Western Cape provincial dummy | 0.093 | 0.098 | 33.8% |
| sole proprietor dummy | -0.550 | 0.115 | 0.0% |
| close corporation dummy | -0.231 | 0.087 | 0.8% |
| Manufacturing | -0.176 | 0.104 | 9.3% |
| VAT | 0.239 | 0.120 | 4.7% |
| PAYE | 0.222 | 0.101 | 2.9% |
| Adj. R2 | 0.432 | | |
| Mean of the dependent variable | 9.714 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.774 | 0.362 | 0.0% |
| LN full-time employees | 0.089 | 0.035 | 1.3% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.194 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.546 | 0.130 | 0.0% |
| Share of activities partially outsourced | -0.082 | 0.126 | 51.8% |
| Guateng provincial dummy | 0.182 | 0.075 | 1.6% |
| Western Cape provincial dummy | 0.105 | 0.098 | 28.4% |
| sole proprietor dummy | -0.558 | 0.116 | 0.0% |
| close corporation dummy | -0.243 | 0.087 | 0.6% |
| Manufacturing | -0.171 | 0.105 | 10.3% |
| VAT | 0.246 | 0.120 | 4.1% |
| PAYE | 0.216 | 0.101 | 3.4% |
| Adj. R2 | 0.424 | | |
| Mean of the dependent variable | 9.656 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.634 | 0.364 | 0.0% |
| LN full-time employees | 0.089 | 0.036 | 1.3% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.196 | 0.027 | 0.0% |
| Share of activities completely outsourced | -0.447 | 0.131 | 0.1% |
| Share of activities partially outsourced | -0.036 | 0.127 | 78.0% |
| Guateng provincial dummy | 0.186 | 0.076 | 1.5% |
| Western Cape provincial dummy | 0.117 | 0.099 | 23.4% |
| sole proprietor dummy | -0.568 | 0.116 | 0.0% |
| close corporation dummy | -0.256 | 0.088 | 0.4% |
| Manufacturing | -0.165 | 0.105 | 11.8% |
| VAT | 0.255 | 0.121 | 3.5% |
| PAYE | 0.209 | 0.102 | 4.1% |
| Adj. R2 | 0.415 | | |
| Mean of the dependent variable | 9.591 | | |

Sensitivity analysis: Polarized model

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.861 | 0.379 | 0.0% |
| LN full-time employees | 0.172 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.141 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.571 | 0.106 | 0.0% |
| Guateng provincial dummy | 0.361 | 0.087 | 0.0% |
| Manufacturing | -0.238 | 0.119 | 4.6% |
| PAYE | 0.544 | 0.140 | 0.0% |
| Adj. R2 | 0.320 | | |
| Mean of the dependent variable | 9.749 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.792 | 0.378 | 0.0% |
| LN full-time employees | 0.172 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.142 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.506 | 0.106 | 0.0% |
| Guateng provincial dummy | 0.362 | 0.087 | 0.0% |
| Manufacturing | -0.238 | 0.119 | 4.6% |
| PAYE | 0.543 | 0.140 | 0.0% |
| Adj. R2 | 0.311 | | |
| Mean of the dependent variable | 9.693 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.718 | 0.378 | 0.0% |
| LN full-time employees | 0.171 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.142 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.436 | 0.106 | 0.0% |
| Guateng provincial dummy | 0.363 | 0.087 | 0.0% |
| Manufacturing | -0.239 | 0.119 | 4.5% |
| PAYE | 0.542 | 0.140 | 0.0% |
| Adj. R2 | 0.302 | | |
| Mean of the dependent variable | 9.633 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.638 | 0.378 | 0.0% |
| LN full-time employees | 0.171 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.142 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.360 | 0.106 | 0.1% |
| Guateng provincial dummy | 0.364 | 0.087 | 0.0% |
| Manufacturing | -0.240 | 0.119 | 4.5% |
| PAYE | 0.540 | 0.140 | 0.0% |
| Adj. R2 | 0.293 | | |
| Mean of the dependent variable | 9.568 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (+10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.550 | 0.378 | 0.0% |
| LN full-time employees | 0.171 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.142 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.277 | 0.106 | 0.9% |
| Guateng provincial dummy | 0.365 | 0.086 | 0.0% |
| Manufacturing | -0.240 | 0.119 | 4.4% |
| PAYE | 0.539 | 0.140 | 0.0% |
| Adj. R2 | 0.285 | | |
| Mean of the dependent variable | 9.498 | | |

Dependent Variable: LN of total cost of tax compliance

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 6.455 | 0.377 | 0.0% |
| LN full-time employees | 0.171 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.142 | 0.030 | 0.0% |

| | | | |
|--|--------|-------|------|
| dummy for full in-house (0) and full outsourcing | -0.186 | 0.106 | 7.9% |
| Guateng provincial dummy | 0.366 | 0.086 | 0.0% |
| Manufacturing | -0.241 | 0.119 | 4.3% |
| PAYE | 0.537 | 0.140 | 0.0% |
| Adj. R2 | 0.276 | | |
| Mean of the dependent variable | 9.421 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-10% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.348 | 0.377 | 0.0% |
| LN full-time employees | 0.170 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.143 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | -0.086 | 0.106 | 41.7% |
| Guateng provincial dummy | 0.367 | 0.086 | 0.0% |
| Manufacturing | -0.241 | 0.119 | 4.3% |
| PAYE | 0.536 | 0.140 | 0.0% |
| Adj. R2 | 0.268 | | |
| Mean of the dependent variable | 9.335 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-20% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.230 | 0.377 | 0.0% |
| LN full-time employees | 0.170 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.143 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | 0.027 | 0.106 | 80.2% |
| Guateng provincial dummy | 0.368 | 0.086 | 0.0% |
| Manufacturing | -0.242 | 0.119 | 4.2% |
| PAYE | 0.534 | 0.140 | 0.0% |
| Adj. R2 | 0.262 | | |
| Mean of the dependent variable | 9.240 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-30% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|-------|
| (Constant) | 6.095 | 0.377 | 0.0% |
| LN full-time employees | 0.169 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.143 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | 0.154 | 0.106 | 14.5% |
| Guateng provincial dummy | 0.370 | 0.086 | 0.0% |
| Manufacturing | -0.243 | 0.119 | 4.1% |
| PAYE | 0.531 | 0.140 | 0.0% |
| Adj. R2 | 0.257 | | |

Mean of the dependent variable 9.132

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-40% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.939 | 0.377 | 0.0% |
| LN full-time employees | 0.169 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.144 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | 0.302 | 0.106 | 0.4% |
| Guateng provincial dummy | 0.372 | 0.086 | 0.0% |
| Manufacturing | -0.243 | 0.119 | 4.1% |
| PAYE | 0.529 | 0.140 | 0.0% |
| Adj. R2 | 0.256 | | |
| Mean of the dependent variable | 9.007 | | |

Dependent Variable: Sensitivity analysis: LN Total cost of tax compliance (-50% across the board)

| | Coeff. | Std. Error | Sig. |
|--|--------|------------|------|
| (Constant) | 5.754 | 0.377 | 0.0% |
| LN full-time employees | 0.168 | 0.039 | 0.0% |
| LN of q55 after imputed values were introduced (imputed "no answer") | 0.144 | 0.030 | 0.0% |
| dummy for full in-house (0) and full outsourcing | 0.477 | 0.106 | 0.0% |
| Guateng provincial dummy | 0.374 | 0.086 | 0.0% |
| Manufacturing | -0.244 | 0.119 | 4.0% |
| PAYE | 0.525 | 0.140 | 0.0% |
| Adj. R2 | 0.260 | | |
| Mean of the dependent variable | 8.860 | | |

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