

Shadow Economy and the Related Issues of Tax Evasion: Comparative Analysis among Canadian Workers

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Abstract

Most research on the underground economy focused on the size, causes, consequences, characteristics, and effects of government policies on shadow economic activities. However, little is known about public perception regarding activities of the underground economy. This quantitative, non-experimental study examined the ethical attitudes of Canadian workers regarding shadow economy and tax evasion. Participants completed the MESI instrument (McGee, 2006). Comparisons were made using analyses of variance and independent samples *t* tests between perceptions of corporate employees and self-employed small business owners. Significant differences were found between the group means of underground economic activities and tax evasion, with the self-employed showing higher ethical standards compared with individuals employed in a corporation. The post-hoc analyses showed significant differences between the lowest and the highest income groups. The findings confirmed that perceptions towards shadow economy and tax evasion differ based on employment and income level. Implications are made to economic policy-making, research, and business and government.

Introduction

The concept of the shadow economy was originally derived from the literature on problems of developing countries (Dell'Anno & Solomon, 2008; Gerxhani, 2004). Researchers in various disciplines determined that large groups of the population in developing countries were not absorbed in the modern economy. In 1963, the eminent cultural anthropologist, Clifford Geertz introduced two terms for this phenomenon: the firm-centered economy and the bazaar economy (Dell'Anno & Solomon, 2008; Geertz, 1978). Elaborating on this dualistic model, Hart (1973) in Johnson, Kaufmann, and Zoido-Lobaton (1998) introduced the terms formal and informal in his study on the employment structure in Accra, Ghana. In addition, with the International Labor Organization (ILO) report on the Kenyan economy and a series of World Bank studies in the seventies, the terms took root in the debate on economic development (Amar, 2004; Chatterjee, Chaudhury, & Schneider, 2006; Feld & Schneider, 2010). Although, in this way, the informal economy became a common sense notion, strict definitions were never agreed upon. The Dutch Board of Advice (on development questions) therefore qualified the term as *a notifying concept* (Bhattacharyya, 1999; Williams, 2004). The term *informal economy* kept its notifying function when researchers and politicians discovered that also in the developed countries of Western Europe, United States, and Canada economic activities took place outside the scope and control of public authorities (Alexeev & Pyle, 2003; Williams, 2005).

In general, there are two approaches to defining the underground economy (Fleming, Roman, & Farrel, 2000). The definitional approach considered underground economic activity as merely unrecorded economic activities (Tunyan, 2005). The behavioral approach defined the shadow economy in terms of behavioral characteristics and the economic activities therein (Nikopour, Habibullah, & Schneider, 2008). The definitional approach is descriptive, whereas the behavioral approach provided underpinnings of a theoretical explanation for underground economic activities (Fleming et al., 2000).

Shadow economy or underground economy refers to unreported or untaxed economic activity (Kelly, 2007). Shadow economy is also defined as the concealment of all market-based legal production of goods and services from public authorities and tax evasion is the illegal nonpayment of a tax (McGee, 2005; Schneider, 2007). No single definition exists for shadow economy; rather, its definition depends on the purpose of the researcher (Feige & Urban, 2008). The most precise and widely used definition of shadow economy relates the underground economy (unofficial income) to officially measured national income. According to this definition, the shadow economy consists of all currently unrecorded productive or value-adding activities that should be in the gross national product (GNP) (Schneider, 2000; Torgler & Schneider, 2007). This definition allows policy makers and economists to compare and to add the underground economy to the gross domestic product (GDP). (Appendix 1A)

Research Focus

For countries all over the world, there are several important reasons for concern about the size and growth of the shadow economy (Dreher & Schneider, 2006). One reason is that an increase in the size of the underground economy is mainly caused by a rise in the overall burden of tax and social security payments by taxpayers (Schneider, 2006; Torgler & Schneider, 2007). This increase may lead to an erosion of the tax and social security bases, and finally to a decrease in tax receipts for government (Elijah & Uffort, 2007; Schneider, 2000; 2005). The consequence would be a further increase in the budget deficit or further rise of direct and/or indirect tax rates. Shadow economic activities would then increase (Schneider, 2007).

A second reason for concern is that when the shadow economy grows, economic policy is based on erroneous official indicators, such as unemployment, official labor force, income, and consumption (Rockwool Foundation, 2008). In such a situation a prospering shadow economy

may cause the government severe difficulties, because it provides unreliable official indicators. The very direction of intended policy measures may therefore be questionable. A third reason for concern is that the rise of the underground economy can be seen as a reaction by individuals who feel overburdened by state activities, such as high taxes and an increasing number of regulations (Schneider, 2005).

Finally, a growing shadow economy may offer strong incentives to attract workers, both domestic and foreign. These workers would then contribute less within the official economy (Dreher & Schneider, 2006; Schneider, 2000). These growing concerns have led many economists to the challenging and difficult task of measuring the size and development of the shadow economy, to trace back its main causes, and to analyze the interactions of the official and unofficial economies (Feige & Urban, 2008; Schneider & Burger, 2005).

Countries that are transitioning from one economic state to another (transition countries) and developing countries have claimed that a large part of economic activities were done within the shadow economy (Dreher & Schneider, 2006; Pickhardt & Sarda-Pous, 2006; Schneider, 2007; Tunyan, 2005). In applying the estimation techniques for measuring shadow economy for the period 1995–2000, the results indicated the size of shadow activities to be 35–44% of GDP for developing economies, 21–30% of GDP for the countries transiting from communist to capitalist economy (transition economies) and 14–16% of GDP for the Organisation for Economic Co-operation and Development (OECD) economies (advance economies (Amar, 2004; Elijah & Uffort, 2007)). The value of the shadow economy grew from about 7.9% of GDP in 1976 to about 16% in 2001 (Choi & Thum, 2005; Tedds, 2005). The shadow economy was considered by many studies to inhibit development in developing countries and to have eroded the existing welfare state in the developed countries. Underground economies also have a significant long-term negative effect on the generation of societal wealth (De Soto, 2005; Dreher & Schneider, 2006; Feige & Urban, 2008; Nikopour, Habibullah, & Schneider, 2008).

The problem to be addressed is the negative effects of the shadow economy in Canada, including corruption, economic retardation, developmental disabilities, and lack of adequate revenue to the government. A large body of literature exists on hidden economy focusing on the size, causes, consequences, characterizing of the shadow economy, and the impacts of government policies on the shadow activities (Feige & Urban, 2008). There is very little quantitative evidence gathered on the impacts of people's perception to the growth of underground activities and the impacts on the official economy, government policies, and economic growth (Sikka & Hampton, 2005). This research study helps in addressing these limitations relating to shadow economic activities and economic growth in countries.

Literature Review

Shadow economies have been associated with significant long-term negative effect on the generation of societal wealth (De Soto, 2005; Dreher & Schneider, 2006). Shadow economy was considered by many studies to inhibit development in developing countries and to have eroded the existing welfare state in the developed countries (Feige & Urban, 2008; Nikopour, Habibullah, & Schneider, 2008). Existing studies on shadow economy have been framed almost entirely to cover such discussions as size, causes, consequences, characteristics, and the effect of government policies on shadow economic activities. Although these studies are valuable, the body of quantitative underground economy research as a whole remains skewed. In addition, most existing research on shadow economy involved the exploration of public finance and policy implications of shadow activities (Feige & Urban, 2008). Shadow economy long-term negative impacts on the official economy, government policies, and economic growth remains largely unexamined through quantitative research. In additionally, the negative effects of the shadow economy in countries, including corruption, economic retardation, developmental disabilities, and

lack of adequate revenue to the government has been marginalized. This literature review provides an overview of the underground economies model, beginning with an explanation of the various stated assumptions and model and their influence on the nature of the shadow economy research. Because rates of shadow economy increases with countries poverty level and corruption (Elijah & Uffort, 2007), the special cases of the relationship between poverty and shadow economic activities and also corruption and the shadow economy is considered.

Since late seventies, there has been a wide array of studies approaching the informal economy from different angles. Much attention has been given to attempts to measure the informal economy in terms of money or labor. Economists like Gutman (1977), Feige (1979), Schneider (2000; 2005) developed more or less simple macroeconomic models to ascertain the size of the informal economy (Amar, 2004; Chatterjee et al., 2006; Giles et al., 2002; Marcelli, 2004).

Other studies have concentrated more on the nature of the shadow economy and tax evasion, on causes and consequences and the place of the underground economy in the economic structure. Researchers like Pahl and Gershuny in the late seventies and early eighties in the UK, Del Boca and Contini in Italy in the same period, Van Eck and Kazemier, and Renooy in the eighties in the Netherlands, the National Audit Board in Sweden in the nineties, De Soto, Dreher, McGee, Schneider, and The Fraser Institute in the eighties in North and South America are examples of this approach.

Informal Economy

All informal activities have one common feature: the entrepreneurs who operate in the informal economy perceive the benefits of doing so to outweigh the costs of going formal (Belev, 2003; Turkey, 2005). A study by Djankov et al. (2008) identified a number of reasons why some

business activities may take place in the shadow economy. The most important determinants are the prevalence of burdensome and costly government regulations and the level of administrative complexity of taxation (Belev, 2003). In a similar manner, De Soto (1989) in Dreher and Schneider (2006) and Kaufmann, Kraay, and Mastruzzi (2007), pointed out that in many countries, especially poor countries; a heavy burden of taxes, bribes, and bureaucratic hassles drives many producers and businesses into an informal sector.

In approximately all studies of hidden economic activities, it has been found out, that the increase of the tax and social security contribution burdens is one of the main causes for the increase of the shadow economy (Breusch, 2005, Schneider, 2000; 2007). Taxes affect labor leisure choices, and also stimulate labor supply in the informal economy, or the untaxed sector of the economy, the distortion of this choice is a major concern of economists (**Fugazza & Jean-François, 2004**; Krakowski, 2005). The bigger the difference between the total cost of labor in the official economy and the after tax earnings, the greater is the incentive to avoid this difference and to work in the shadow economy (Elkan, 2005). This difference depends broadly on the social security system and the overall tax burden which are key features of the existence and the increase of the shadow economy. But even major tax reforms with major tax rate deductions will not lead to a substantial decrease of the shadow economy. Government tax reforms will only be able to stabilize the size of the informal economy and avoid a further increase (Breusch, **2005**; Palmade & Anayiotis, 2005). Palmade and Anayiotis argued that, social networks and personal relationships, the high profit from irregular activities and associated investments in real and human capital are strong ties which prevent people from transferring to the official economy.

In Canada, Schneider (2005) found similar reactions of people facing an increase in indirect taxes (VAT, GST). After the introduction of the GST in 1991 in Canada, in the midst of a recession, the individuals, suffering economic hardship because of the recession, turned to the informal economy, which led to a substantial loss in tax revenue. Unfortunately, once shadow

economy habit is developed, it is unlikely that it will be abandoned merely because economic growth resumes (Schneider, 2005). The People who engage in shadow economic activities may not return to the formal sector, even in the long run. This fact makes it even more difficult for policymakers to carry out major reforms because they may not gain a lot from the reforms (Dreher & Schneider, 2006; Schneider, 2000; Torgler, 2005).

Empirical results of the influence of the tax burden on the shadow economy was provided in the studies of Dreher and Schneider (2006) and Schneider (2000; 2005), they all found strong evidence for the general influence of taxation on the shadow economy. This strong influence of indirect and direct taxation on the informal economy was further demonstrated by discussing empirical results in the case of Austria and the Scandinavian countries by Dell'Anno (2007). For Austria, the driving force for the informal economy activities was the direct tax burden; tax has the biggest influence on shadow economy activities followed by the intensity of regulation and complexity of the tax system.

A similar result has been achieved by Dreher, Kotsogiannis, and McCorrison (2005) for the Scandinavian countries (Denmark, Norway, & Sweden). Dreher et al. (2005) argued that, in all the three countries various tax variables; average direct tax rate, average total tax rate, indirect and direct tax rate and marginal tax rates have the expected positive sign on currency demand and are highly statistically significant. Similarly, results are reached by Karlinger (2005), for Germany and by Dreher, Kotsogiannis, and McCorrison (2008) for Norway and Sweden. Several other recent studies provided further evidence of the influence of income tax rates on the shadow economy. Torgler (2005) and Echazu and Bose (2008), using Feige data for the informal economy, found evidence of the impact of government income tax rates, Internal Revenue Service (IRS) audit probabilities, and IRS penalty policies on the relative size of the shadow economy in the United States. Echazu and Bose concluded that a restraint of any further increase of the government top marginal income tax rate may at least not lead to a further increase in the

activities of the shadow economy, while increased IRS audits and penalties might reduce the size of the shadow economic activities. Echazu and Bose using Belev (2003) data found that there is generally a strong influence of state activities on the size of the shadow economy: For example, if the marginal federal personal income tax rate increases by one percentage point, *ceteris paribus*, the shadow economy rises by 1.4% points.

In another investigation, Dreher, Kotsogiannis, and McCorriston (2007) also using Belev (2003) data found empirical evidence that marginal tax rates are more relevant than average tax rates, and that a substitution of direct taxes by indirect taxes seems unlikely to improve tax compliance. Further evidence on the effect of taxation on the informal economy was presented by Buehn and Schneider (2009), who came to the conclusion that it is not higher tax rates per se that increase the size of the shadow economy, but the ineffective and discretionary application of the tax system and the regulations by governments. Buehn and Schneider found that there is a negative correlation between the size of the shadow economy and the top (marginal) tax rates might be unexpected. But since other factors like tax deductibility, tax relives, tax exemptions, the choice between different tax systems, and various other options for legal tax avoidance were not taken into account in their studies, it is not all that surprising.

In their studies, Cullis, Jones, and Lewis (2006) found a positive correlation between the size of the shadow economy and the corporate tax burden. Cullis et al. came to the overall conclusion that there is a large difference between the impact of either direct taxes or the corporate tax burden on the activities of shadow economy. According to Cullis et al., institutional aspects, like the efficiency of the administration, the extent of control rights held by politicians and bureaucrats, and the amount of bribery and especially corruption, play a major role in this bargaining game between the government and the taxpayers.

Public Sector Services and Shadow Economy

An increase of the shadow economy leads to reduced state revenues which in turn reduce the quality and quantity of publicly provided goods and services (Schneider, 2007). Ultimately, this can lead to an increase in the tax rates for firms and individuals in the official sector, quite often combined with a deterioration in the quality of the public goods (such as the public infrastructure) and of the administration, with the consequence of even stronger incentives to participate in the shadow economy (Schneider, 2000; 2006). Johnson et al. (1998) presented a simple model of this relationship. Johnson et al. findings shown that smaller shadow economies appear in countries with higher tax revenues, if achieved by lower tax rates, fewer laws and regulations and less bribery facing enterprises. Johnson et al. studies found that, countries with a better rule of the law, which is financed by tax revenues, also have smaller shadow economies. Transition countries have higher levels of regulation leading to a significantly higher incidence of bribery, higher effective taxes on official activities and a large discretionary framework of regulations and consequently to a higher shadow economy (Schneider, 2000; 2007) (Appendix 1B) shown world map view of shadow economy.

The overall conclusion of Johnson et al. (1998) studies is that wealthier countries of the OECD as well as some in Eastern Europe find themselves in the good equilibrium of relatively low tax and regulatory burden, sizeable revenue mobilization, good rule of law and corruption control, and (relatively) small shadow economy. By contrast, a number of countries in Latin American and the former Soviet Union exhibit characteristics consistent with a bad equilibrium: tax and regulatory discretion and burden on the firm is high, the rule of law is weak, and there is a high incidence of bribery and a relatively high share of activities in the shadow economy (Aidt, 2009; Chong & Gradstein, 2007; Schneider, 2007; Tanaka, 2009).

Shadow Economies

The size and development of the shadow economies of 162 countries was also considered in Schneider et al. (2010) studies of the size of shadow economy all over the world. In percentage terms, the biggest shadow economy relative to official economic activity is in the former Soviet republic of Georgia. In 2007/2008, the last year for which data were available, revenue from all Georgia's goods and services generated off the books amounted to 72.5 percent of official GDP (Schneider et al., 2010). In other words, the government was losing out on billions of taxable dollars it could have used to improve the national infrastructure, service debt, build schools, roads, and even hire better tax collectors in those periods. At the other end of the scale, was the United States shadow economy, which equaled only 9 percent of the country's official economy. Given United States GDP of \$14.26 trillion, the world's largest economy, this could still be as much as \$1.2 trillion in taxable income that slips through Uncle Sam's fingers each year. That be the case the size of shadow economy can be vitally important. As became painfully clear during the Greek economic crisis, one of the factors that nearly drove the country into bankruptcy was that Greek workers and companies skirted more than 31 billion Euros in taxes, which is more than 10 percent of the country's official GDP. (See Appendix 1) shows the size of shadow economies for 162 countries ranking according to the size for period 1999/2000 to 2007/2008 with the country average measures for the nine years.

Consequences of Shadow Economy

There is considerable agreement internationally, on both theoretical and empirical grounds, about the factors that determine the relative size of the shadow economy (Dabla-Norris et al., 2008; Tedds, 2005). Most of the literature on the informal economies in the past has focused on industrialised countries. In general, the findings pointed to an increasing share of the

informal economies in the industrialised countries, supposedly due to increasing taxes and regulations during most of the post war period (Buehn & Schneider, 2009). A lack of estimations of the activities of shadow economy has limited and continues to limit time series analysis of the impacts of shadow economic activities to a small set of countries (Krakowski, 2005). For policy makers, information on the size of the informal economy and its possible consequences is of considerable importance. For example, in some industrialised countries the observed trend towards ever increasing unemployment rates could be due to an increasing number of people working in the shadow economy. If this were the case, conventional employment policies cannot be expected to increase measured employment in the formal sector or at least not in the same way as would be the case without people working in the clandestine economy. Or, if the size of the underground economy is related to overall tax rates, tax increases may not have the expected results, but only increase the size of the informal economy and so reduce the tax base and tax receipts. In countries or regions with a large informal sector the effective management of the economy by the state may be undermined (Straub, 2005; Williams, 2006).

A second way to assess the consequences of the informal sector is to compare an economy that has a large informal sector with one of the same overall size, but where the shadow economy is smaller. In many respects, a large informal economy is not beneficial for economic growth when compared with a situation where the shadow economy is formalised. For example, while people working in the hidden economy benefit from public infrastructure, such as streets; they do not contribute to its financing (Krakowski, 2005). Therefore, reducing the size of the unofficial sector could lead to a broader tax base and thus open up the possibility of lowering overall tax rates or improving public services; both may be considered positive outcomes that could improve the growth prospects of the economy in question (Breusch, 2005; Schneider, 2006).

When the economic consequences of the informal sector are discussed, two types of comparisons are used, though sometimes it is not made clear which type is being applied. Some researchers compare an economy that has a significant informal sector with an economy where the informal sector has vanished without having been transferred to the formal economy (Krakowski, 2005; Turkey, 2005). The overall economy is then smaller than before. It is not surprising that in this kind of comparison the informal economy is beneficial for economic growth (Torgler, 2005). This is the kind of comparison used when it is stated that a positive side effect of the informal economy is that over 66 percent of earnings in the shadow economy are immediately spent in the official sector (Dreher & Schneider, 2006; Schneider & Ernste, 2000; Schneider, 2000).

Research Method

The study was conducted to address the limitations noted above relating to shadow economic activities and economic growth in Canada. The purpose of this quantitative, non-experimental research study was to examine the perceptions of Canadian workers regarding the activities of the shadow economy and related issues of tax evasion and its implications on official economy, government policies, and economic growth. Activities of the shadow economy have been of increasing concern among government officials, policy makers, and social scientists (Cobham, 2005). There are several important reasons to be concerned about the activities of the shadow economy, in addition to its size and growth (Dreher & Schneider, 2006). In the 1980s, the causes, effects, and problems generated by an enlargement in underground economic activities were comprehensively discussed and argued in countries all over the world (Schneider, 2006). Presently, attention is being drawn on people's perceptions towards the shadow economy and related issues for several reasons. Unemployment is rising dramatically, with the attendant

problems of financing public expenditure. There is also a rising anxiety and disappointment about the present economic crisis and social policies. Policy makers and politicians have become increasingly aware of the need to solve problems associated with shadow economy both at the state and the national level (Elijah & Uffort, 2007; Nikopour, Habibullah, & Schneider, 2008).

Data were gathered by means of a 36-item questionnaire about the perception of Canadian Workers towards activities of shadow economy and related issues of tax evasion using MESI instrument (McGee, 2006). The independent variables for the study are the employment status of the participants (self-employed vs. corporate employee) and the income level of the participants. The dependent variables for the study are the perception towards shadow economic activities and perception towards tax evasion. To investigate the question of the perceptions of Canadian workers towards underground economic activities, the following research questions were presented, together with null hypotheses (H_0) and alternative hypotheses (H_a) as they were associated with each research question.

Q1. To what extent, if any, do Canadian workers' perceptions towards underground economic activities differ, based on employment status?

H1₀. Canadian workers' perceptions towards underground economic activities do not differ based on employment status.

H1_a. Canadian workers' perceptions towards underground economic activities differ based on employment status.

Q2. To what extent, if any, do Canadian workers' perceptions towards tax evasion differ, based on employment status?

H2₀. Canadian workers' perceptions towards tax evasion do not differ, based on employment status.

H2_a. Canadian workers' perceptions towards tax evasion differ, based on employment status.

Q3. To what extent, if any, do Canadian workers' perceptions towards underground economic activities differ, based on income level?

H3₀. Canadian workers' perceptions towards underground economic activities do not differ based on income level.

H3_a. Canadian workers' perceptions towards underground economic activities differ based on income level.

Q4. To what extent, if any, do Canadian workers' perceptions towards tax evasion differ, based on income level?

H4₀. Canadian workers' perceptions towards tax evasion do not differ based on income level.

H4_a. Canadian workers' perceptions towards tax evasion differ, based on income level.

A quantitative research method was chosen for this study because it allowed for quantifying differences between groups (Creswell, 2009). Data were collected from a large sample. The data were generally numeric, the collection methodology was preselected, and statistical tools were used to identify and corroborate trends (Creswell, 2009; Neuman, 2006). As this research study involved measurement and quantification, the quantitative methodology was considered suitable.

Participants

The sample size for the study was calculated to be 200 self-employed and employees from three provinces. According to studies in the literature, response rate from an e-mail survey could range between 25% and 60% (Schneider, 2007; Tedds, 2005; Tunyan, 2005). In order to achieve an adequate sample size, a 36% response rate was used to attain a 200 total sample size. A stratified sample design was also used to randomly select a proportional number of cases from each province. The targeted population and the stratified sample size proportionally to the population size from each province based on a sample size of 200 individuals (financial advisors and small business owners) from three provinces is as shown in Table 1 below.

Table 1
Target Population and Stratified Sample

| Province | Target Population N | Target Population % | Sample Size from each Province |
|----------|------------------------|------------------------|-----------------------------------|
| Alberta | 254 | 16.9% | 34 |
| Ontario | 898 | 59.9% | 120 |
| Quebec | 348 | 23.2% | 46 |
| Total | 1500 | 100% | 200 |

Note: The three provinces of Alberta, Ontario, and Quebec (3.7 Million, 13.1 million and 7.8 million people respectively) represent about three-fourth (73%) total population of Canada (33.7million people). Majority of people living in Quebec speak French language. They represent 23.2% of the population. The remaining parts (76.8%) speak largely English language. The province of Alberta and Ontario were chosen because they represent key economic blocks within the English speaking area and Canada in general (Statistics Canada, 2009).

The survey was distributed electronically to randomly selected participants. To achieve the adequate minimum sample of 200 individuals, assuming a response rate of 60%, the sampling size for the study was calculated to be 333 individuals. The study was conducted during a three-week period during June and July of 2010. The survey was successfully distributed to 309 participants (24 or 7.2%, were undeliverable), and 273 surveys were returned for an overall response rate of 82%. The adjusted response rate was 67% because out of 273 returned surveys, 224 surveys were completed, and the rest (49 or 14.7% surveys) were determined to be incomplete and unusable (Appendix 2). There is no universal agreement on response rate for electronic surveys; electronic survey response rate on a study like shadow economy can range from 16% to 85% depending on the nature of the environment where the survey study is being conducted and the targeted population (Fowler, 2009; Schneider, 2007; Tedds, 2005; Tunyan, 2005). According to Schneider (2007), for underground economy surveying, a response rate of 60 to 85% is considered a high response rate. Table 2 displays the operational definitions of the variables used in this study.

Data Analysis and Findings

Data analysis for the research dissertation study was conducted using Statistical Package for Social Sciences (SPSS version 16.0) software. The data was analyzed by using both descriptive and inferential statistics. Descriptive statistics was used to summarize perceptions among Canadian workers towards underground economic activities. Inferential statistics was also used to test the study hypotheses and address the current study's research questions. Inferential statistical analyses are used to make inferences about a population based on the collected sample data (Trochim & Donnelly, 2008). Analysis of the survey data using analysis of variance (ANOVA) was used. Using ANOVA is appropriate for comparative analysis between more than

one independent or predictor variable and one dependent or criterion variable (Zikmund, 2003). In addition, using ANOVA helped to ensure that ordinal data was treated as interval data, based on the assumption of normality (Norusis, 2008).

The research study was an examination to determine if perceptions of Canadian workers towards underground economic activities and tax evasion differ based on employment status. In addition, the study was intended to ascertain if perceptions of Canadian workers towards underground economic activities and tax evasion differ based on income level. The research presented in this study was based on prior research (McGee, 2005) regarding ethical attitudes to tax evasion. Respondents in this study were demographically similar to respondents in the previous study. Respondents were distributed in the financial and nonfinancial sectors, including both self-employed individuals and individuals working for a corporation, and including employees of both the public and private sectors.

An independent samples *t* test was conducted to determine whether the differences between self-employed professionals and corporate employees regarding perceptions towards activities of shadow economy were significant. Differences were significant, $t(203) = 4.23$, $p < .001$, 95% CI = [0.53, 1.46]. From the *t-test* conducted sufficient evidence exists to reject the null hypothesis in favor of the alternative hypothesis. The self-employed had higher mean scores, indicating that self-employed individuals had more disagreement with the survey statements than did individuals employed in a corporation. The results were consistent with prior research studies in that there were significant differences in shadow economic behavior depending on employment status. The results were consistent with prior research conducted by Eilat and Zinnes (2004) for transition countries and study by Enste (2009) for 25 organizations for economic co-operation and development (OECD) countries. In addition, the results were consistent with research conducted in Vietnam (McGee, 2009) and in Slovakia (McGee & Bose, 2009). In Vietnam and

Slovakia studies, findings revealed that self-employed workers were more ethically opposed to the activities of the shadow economy (Appendix 3).

An analysis of the data received from the respondents using an independent samples *t* test was conducted to determine whether the differences between self-employed professionals and corporate employees regarding perceptions towards the activities of tax evasion were significant. Differences were significant, $t(203) = 2.37, p = .02, 95\% CI = [0.09, 1.01]$. The null (H_{2_0}) hypothesis was rejected in favor of the alternative (H_{2_a}). The self-employed had higher mean scores on the MESI, indicating that self-employed individuals had more disagreement with the survey statements than did individuals employed in a corporation. The results were consistent with prior research studies in that there were significant differences in Tax evasion behavior depending on employment status (Appendix 4). The results were consistent with prior research conducted in Germany (McGee, Nickerson, & Fees, 2006), in Brazil (Fajnzylber, Maloney, & Rojas, 2006), in Poland (McGee & Bernal, 2006), and in Sweden (Scheutze & Bruce, 2004). The research work in Germany by McGee et al. (2006), found a significant differing tax evasion behavior depending on employment status of the workers. In addition, the research works of Fajnzylber et al. (2006) and Scheutze and Bruce (2004), revealed that self-employed workers were more ethically opposed to the activities of the tax evasion. The information obtained from this research contradicted prior research conducted in Hong Kong by McGee and Ho (2006), in Macau by McGee, Noronha, and Tyler (2006), in New Jersey by McGee (2008), and in New York by Orviska, Caplanova, Medved, and Hudson (2006). McGee (2008) and Orviska, Caplanova, Medved, and Hudson (2006) found in their studies that, small business owners are more likely to engage in tax evasion than most other workers because of the opportunities for cash transactions.

A one-way analysis of variance was conducted to determine whether the differences among income groups regarding perceptions toward activities of shadow economy were

significant. Differences were significant, $F(4, 200) = 8.32, p < .001$, partial eta square = .14. From analysis of variance conducted of the median showed that sufficient evidence exists to reject the null hypothesis. Follow-up tests of pairwise analysis showed that with one exception, differences in perceptions toward activities of shadow economy among income groups were significant only for differences between the lowest income group (less than \$35,000 per year) and the other groups also displays the differences among the income groups for perceptions toward activities of shadow economy (Appendix 5).

A one-way analysis of variance was conducted to determine whether the differences among income groups regarding perceptions toward activities of tax evasion were significant. Differences were significant, $F(4, 200) = 6.49, p < .001$, partial eta square = .12. From the ANOVA conducted of the median showed that sufficient evidence exists to reject the null hypothesis ($p < 0.001$). Follow-up tests of pairwise analysis showed that differences in perceptions toward activities of tax evasion among income groups were significant only for differences between the lowest income group (less than \$35,000 per year) and the other groups (Appendix 6).

Discussion and Recommendations

The study contributes to the literature on workers' perceptions toward underground economy by providing empirical findings on factors contributing to the development of shadow economy and the related issues of tax evasion in Canada. The study was unique as it examined the perceptions of different categories of workers. There are no prior quantitative studies on the perceptions of workers toward underground economic activities based on employment status and income level. This study provides a foundation for further research on the underground economy in Canada. The findings confirm that Canadians' perceptions towards shadow economy and tax

evasion differ based on their employment status and income levels. The study has implications to governments with shadow economic activities to design policy measures in reducing the impacts of shadow economy and the related issues of tax evasion on their economy. The study may help future research on activities of shadow economy and related issues of tax evasion and their economic effects.

Estimates of the size of the Canadian shadow economy contained in many studies over the last 17 years have ranged from 3% to over 20% of gross domestic product (GDP). One prominent finding from study on the size of shadow economy is that, from 1999 to 2007, shadow economies appear to be on the rise in Canada. For example, Canada's shadow economy in 2005 was 16.3 percent of the GDP, and 16.4 percent in 2006. This climbed to 16.5 percent of GDP in 2007. See Table C 7 (Appendix C). Canada's official GDP, according to the statistics Canada (2010) (see, table C 9) was \$ 1.6 trillion for 2008, but if the shadow economy were added, it could potentially be as much as \$1.92 trillion or more. This figure translated into a loss of income and commodity tax revenues of about \$290 billion for that year alone. Therefore, the shadow economy is a problem that required urgent attention to solve since the size of the tax loss is significant to the Canadian economy. Consequently, the problem of shadow economy requires continuous attention and continuous efforts from revenue Canada and all Canadians which includes, the recommendations detailed below.

To effectively combat underground economy activities in Canada, and other countries, revenue agencies should work co-operatively with provinces, states and other government departments and key interest groups to encourage voluntary compliance, enhance legislative effectiveness, and audit techniques, publicize underground economy and tax evasion convictions, strengthen programs to identify non-filers and non-registrants, compliance research, and finally, focus on high non-compliance sectors. Additionally, other schemes that include voluntary compliance in small businesses such as community visits and consultations with industry

associations should be promoted. In addition, revenue departments should improve targeting of audits for the detection and re-examination of unreported income. Efforts also should be initiated to strengthen incentives to deter participation in the shadow economy. In addition, revenue agencies should promote legislation that mandate reporting of all cash transactions. Several countries now have legislation requiring the reporting of cash transactions over a certain amount. Although, Canadian legislation currently requires recording of these transactions by banks, but there is no centralized reporting to an agency mandated to follow up on suspicious transactions in Canada. Creation of such reporting agency will be helpful in combating shadow economic activities and in tracking cash sales, which may result in unreported income for tax purposes.

Conclusion

Findings in this study have implications outside of Canada as well. Undoubtedly, most policy actions that strengthen economic growth of the official economy will have an effect of encouraging businesses to move out of the shadow economy. The question is whether, in addition to these, there are actions policymakers could pursue whose main purpose would be to frankly influence the size of the underground economy. The following are some of the several types of actions that may be considered by policymakers from many nations in this regard: discourage the use of barter system, encourage dynamic tax system, promote institutional strengthening, initiate better enumeration, promote banking privatization, discourage activities that will promote market exit, nations' tax administration should be decentralized, enhancement of the rule of law, incentives for transformation of shadow economy into formality should be enhanced, and lastly, demand-side public policy approaches to shadow economic activities.

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Appendices

Appendix 1A

Taxonomy of Types of Shadow Economic Activities

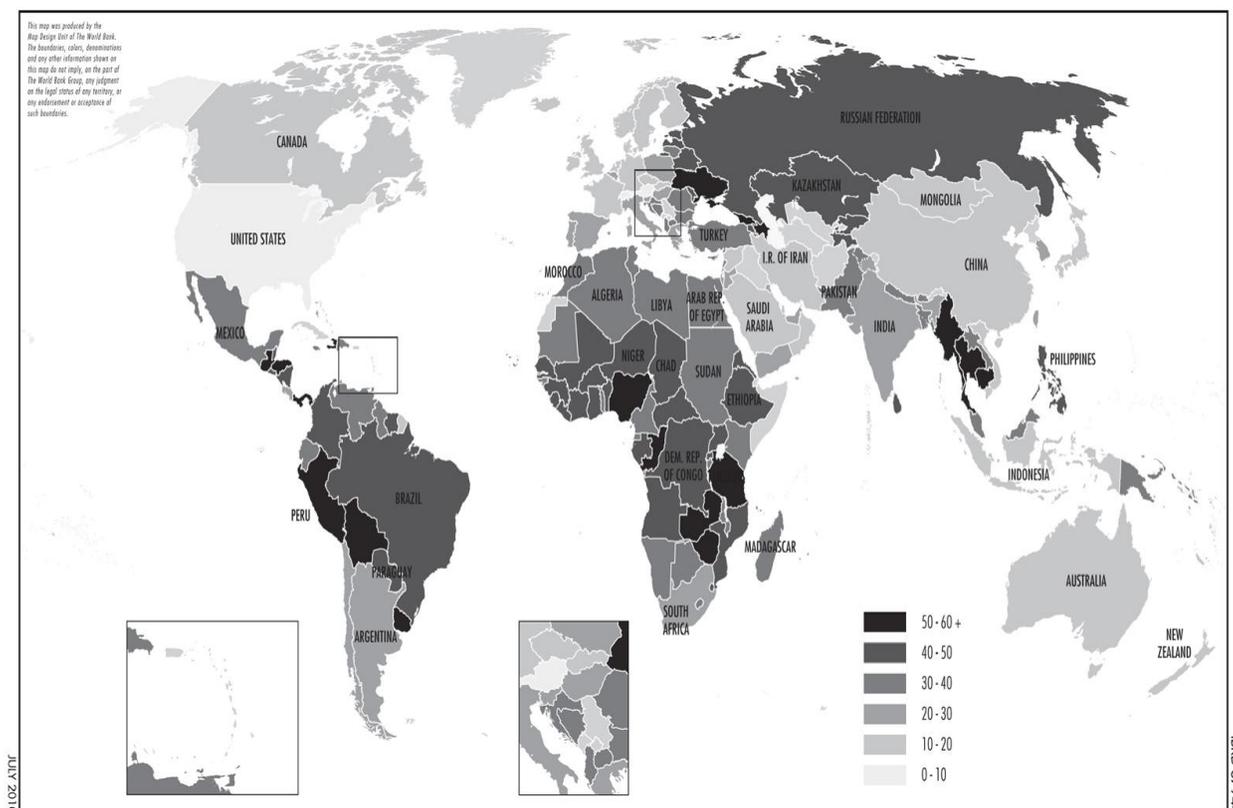
| Type of activity | Monetary transactions | | Non-monetary transactions | |
|--------------------|---|-------------------------------------|--|--|
| Illegal activities | Trade in stolen goods, drug dealing and manufacturing, prostitution, gambling, fraud, etc. | | Barter of drugs, stolen goods, smuggling, etc., production or growing of drugs for own use, theft for own use. | |
| | Tax evasion | Tax avoidance | Tax evasion | Tax avoidance |
| Legal activities | Unreported income from self-employment, wages, salaries, and assets from unreported work related to official/lawful goods and services. | Employee discounts fringe benefits. | Barter of official/lawful goods and services. | All do-it-yourself work and neighborly help. |

The structure of the table is taken from Lippert and Walker (1997)

Appendix 1B

World Map View of Shadow Economy

New technology also allows us to present the informality measurement country-by-country in a world map view. Countries shown with darker colors in Figure C9 indicate higher levels of informality. Among them: Azerbaijan, Bolivia, Georgia, Peru, Panama, Tanzania, Nigeria, and Zimbabwe. Countries shown with lighter colors indicate countries with lower levels of informality. Among them: Austria, Japan, Luxembourg, Switzerland, the United States, and the United Kingdom. (See, figure below).



Appendix 2

Status of Distributed Surveys

| Status | N | Percent (%) |
|-------------------------|------------|-------------|
| Undeliverable | 24 | 7.2% |
| Not returned | 36 | 11% |
| Returned but Incomplete | 49 | 14.7% |
| Returned and complete | 224 | 67% |
| Total | 333 | 100 |

Appendix 3

Perceptions toward Shadow Economy – Mean Scores by Employment Status

| Employment status | <i>N</i> | <i>M (SD)</i> | Minimum | Maximum |
|---------------------------|----------|---------------|---------|---------|
| Self-employed | 115 | 4.05 (1.91) | 1.00 | 7.00 |
| Employed in a corporation | 90 | 3.05 (1.44) | 1.00 | 7.00 |
| Total | 205 | 3.61 (1.78) | 1.00 | 7.00 |

Appendix 4

Perception toward Tax Evasion – Mean Scores by Employment Status

| | <i>N</i> | <i>M (SD)</i> | Minimum | Maximum |
|---------------------------|----------|---------------|---------|---------|
| Self-employed | 115 | 3.20 (1.67) | 1.00 | 6.67 |
| Employed in a corporation | 90 | 2.64 (1.64) | 1.00 | 7.00 |
| Total | 205 | 2.95 (1.67) | 1.00 | 7.00 |

Appendix 5

Perceptions toward Shadow Economy – Mean Differences by Income Level

| Income group | 1 | 2 | 3 | 4 |
|--------------------------|--------------------|---------------|--------------|--------------|
| 1. Less than \$35,000 | -- | | | |
| 2. \$35,001 to \$65,000 | -1.14 (0.30)*** | -- | | |
| 3. \$65,001 to \$95,000 | -1.16 (0.35)* | -0.02 (0.35) | -- | |
| 4. \$95,001 to \$125,000 | -1.58 (0.40)*** | -0.44 (0.40) | -0.42 (0.44) | -- |
| 5. \$125,001 or more | -2.06 (0.45)*** | -0.92 (0.45)* | -0.90 (0.48) | -0.48 (0.52) |

* $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix 6

Perceptions toward Tax Evasion – Mean Differences by Income Level

| Income group | 1 | 2 | 3 | 4 |
|--------------------------|--------------------|--------------|--------------|--------------|
| 1. Less than \$35,000 | -- | | | |
| 2. \$35,001 to \$65,000 | -0.91 (0.28)** | -- | | |
| 3. \$65,001 to \$95,000 | -1.38 (0.33)*** | -0.48 (0.33) | -- | |
| 4. \$95,001 to \$125,000 | -1.04 (0.38)** | -0.14 (0.38) | 0.34 (0.42) | -- |
| 5. \$125,001 or more | -1.54 (0.42)*** | -0.62 (0.42) | -0.15 (0.46) | -0.49 (0.50) |

** $p < .01$. *** $p < .001$.

Note. Results are reported as mean differences (standard error), left column minus top row.