Social Network and Tax Evasion: Theoretical Model and Empirical Evidence in Bangladesh

Mannan, Kazi Abdul and Farhana, Khandaker Mursheda and Chowdhury, G. M. Omar Faruque

Green University, Shanto-Mariam University of Creative Technology, ICMAB

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Dr. Kazi Abdul Mannan
Adjunct Professor
Faculty of Business Studies
Green University of Bangladesh
Email: drkaziabdulmannan@gmail.com

Dr. Khandaker Mursheda Farhana
Assistant Professor
Department of Sociology and Anthropology
Shanto-Mariam University of Creative Technology
Email: drfarhanamannan@gamil.com

G. M. Omar Faruque Chowdhury FCMA
Chief Finance Officer
Elite Paint & Chemical Industries Ltd
Email: gmchowdhury.co@gmail.com

Abstract

This paper examines ethical and behavioral aspects of taxpayers, the financial condition of citizens, tax fairness, taxpayer services, complexities in the tax regime, tax rates, penalties and enforcement, and tax amnesties and the black economy. Primary data were collected by conducting a survey utilizing structured printed questionnaires. Secondary data were collected from project reports, government publications and documents, books, journals, reports, newspapers and electronic media. Empirical findings suggest that all these issues are associated with tax evasion in Bangladesh. We also find that eligibility in a social network increases the likelihood that others will take-up. This suggests that taxpayers affect each other's decisions about tax avoidance, highlighting the importance of accounting for social interactions in understanding enforcement and tax avoidance behavior, and providing a concrete example of optimization frictions in the context of behavioral responses to taxation. The involvement and nexus of the three actors in tax policy formulation, implementation and compliance processes were examined. The empirical findings indicate the presence of this nexus which facilitates tax evasion. The high magnitude of tax evasion in Bangladesh is significantly acknowledged by respondents in the study. The empirical findings suggest that the absence of a participatory policy making process, lack of research into, and reform of, the tax system, short-term oriented and politically motivated tax policies, loopholes, anomalies and complexities of tax laws and policies are responsible for creating scope for tax evasion.

Keywords: Taxation, Social Network, Tax Evasion, Tax Avoidance, Network Centrality, Optimal Auditing, Network Model

1.0 Introduction

Tax evasion is a significant economic phenomenon. Tax evasion is the age-old phenomena which can be traced back to the beginning of the human civilization (Johnstone & Brown 2004; Torgler 2003; Tanzi & Shome 1993; Thakur 1979). It remains a growing concern in almost all countries around the world. It is no longer the sole problem of any specific society or state. Bangladesh, in this context, is no exception. Tax evasion plays a significant role in creating and maintaining such a nexus. In practice, Bangladesh has failed to establish good governance through eradicating the maladies of corruption. That corruption, rooted deeply in the political, administrative and socio-cultural environment of Bangladesh, impedes the development process and undermines the role of the state. As Zakiuddin and Haque (2002) debated, corruption has unfortunately been perceived in Bangladesh as a way of life and the virtual litany of suspicious dealings, underhand agreements, and blatant corruption of the political leaders and parties, including both autocratic military regimes and democratic regimes, have spread to an all-pervasive level.

Tax evasion, therefore, forms an important segment of corruption which has been an ongoing issue of concern for the government as well as civil society in Bangladesh. Although the importance of having an effective and efficient tax administration system is considered to be integral to any country's well-being (Dietz 2007), the tax administration of Bangladesh is considered to be overly bureaucratic, corrupt, inefficient and outdated (Khan & Nahar 2011; Mansur et al 2011; Rahman & Yasmin 2008; Sarker & Kitamura 2002). In addition, it lacks infrastructural and logistic support, manpower and an adequate rewards and remuneration structure (Mansur & Yunus 2012). Tax policy formulation as well as tax administration in Bangladesh suffers from several weaknesses, including the continued use of income tax exemptions and the influence of vested groups, both from the business community and the tax administration system (Mansur et al 2011).

This paper provide a network model in which taxpayers are assumed to have an intrinsic concern for consumption relative to that of other local taxpayers with whom they are linked on a social network. In this regards, taxpayers may seek to evade tax so as to improve their standing relative to those they compare against. The empirical model exhibits strategic complementariness in evasion choices, so that more evasion by one taxpayer reinforces other taxpayers' decisions to evade also. Network centrality is a concept developed in sociology to quantify the influence or power of actors in a network. Bonacich (1987) measure counts the number of all paths that emanate from a given node, weighted by a decay factor that decreases with the length of these paths. In this context, our contribution combines sociological and economic insights in seeking to understand tax evasion behavior.

In spite of the fact that the model is simple enough to admit an analytic solution, it is also sufficiently rich that it may be used to address a range of questions of interest to academics and practitioners in tax authorities. Doing so, this paper focus on two questions such as for an arbitrary network structure and the value to a tax authority in terms of additional revenue raised through audits of knowing the structure of social networks. The analysis is performed on a class of generative networks that possess many of the empirically observed features of social networks, in particular allowing for highly visible celebrity taxpayers. The major concentrated are the links within a social network the greater the value of possessing at least some network information. These findings are robust to imperfect preference observability.

Notwithstanding reducing social information to a single global statistic known to all taxpayers promotes analytical tractability, it is problematic in other respects. Believing that taxpayer's observe aggregate information is, in our setting, implicitly the assumption that the social network is the complete network. Nevertheless there are reasons to think that relative consumption externalities are, in fact, heterogeneous across individuals. In particular, we know that comparators are frequently neighbors, colleagues, and friends (Clark & Senik 2010), and therefore local in nature. Given the pervasiveness of social network and tax evasion in Bangladesh, it can be argued that both phenomena require greater investigation to ascertain their causes and remedies. Despite the importance of this intriguing issue, very little empirical research has been conducted on tax evasion and social network in Bangladesh. In addressing this gap in the literature, this study aims to identify and analyze the relationship between tax evasion and social network.

1.1 Research Objectives

The key objective of this study is to examine the social network in the case of tax evasion in Bangladesh, with an emphasis on ascertaining the relationship between the two phenomena. In this respect, the intention of the study is to understand the nature of the problem of tax evasion in Bangladesh.

2.0 Literature Review

Tax evasion is a universal problem (Tanzi & Shome 1993). It is as old as taxes themselves; however, the extent of the problem varies from country to country (Torgler 2003; Jain 1987). The phenomenon of tax evasion, therefore, has received enormous research attention throughout the world. Considerably, over the past few decades, a rapid growth in the literature on tax evasion and compliance has been evidenced (Smatrakalev 2012; Tanzi & Shome 1993; Wallschutzky 1984; Yitzhaki 1974; Srinivasan 1973; Angell 1938). Consequently, academics, economists, and researchers around the world have attempted to develop theories and models for, and examine the extent, causes, and consequences of, tax evasion. Recently, other relevant phenomena, for instance, compliance and noncompliance, the shadow economy, and the ethical, moral, behavioral and psychological aspects of tax evasion have gained scholarly attention. Moreover, a large body of research work has been conducted in developed and developing countries on tax evasion. Thus, reviewing the literature on tax evasion will be useful in identifying the common features of tax evasion, thereby facilitating the present study in creating a platform for analyzing the case of tax evasion in Bangladesh.

During the period of 1970s, the seminal works of Allingham and Sandmo (1972), Srinivasan (1973) and Yitzhaki (1974) explore special emphasis, since they pioneered the models of tax evasion. Allingham and Sandmo (1972) have analyzed the impact of the probability of detection, penalty rates and tax rates on a risk-averse taxpayer's underreporting decision making. They suggest that risk-averse taxpayers will be more compliant if the probability of detection and penalty for tax evasion are high. Conversely, a high tax rate will discourage tax compliance Mannan et al 2020). Since then, a number of researchers have extended and elaborated, as well as questioned, the portfolio choice model of tax evasion in analyzing the correlation between tax evasion and risk attitudes, evasion penalty functions, tax rates, and detection (Bayer 2006; Lin & Yang 2001; Clotfelter 1983). Moreover, Wallschutzky's empirical research (1984) has explored a number of possible causes that inspire taxpayers to evade tax, including high tax rates, a government's unwise use of tax money, rich people's tax avoidance and inequity in the tax system. Alm et al (1992) argue that detection and punishment alone cannot influence taxpayers' decisions between compliance or non-compliance; rather, a number of other variables play an important role.

In recent years, the behavioral, psychological, and demographic analyses of tax evasion have expanded. A substantial body of literature has emphasized the influence of morality, ethics, religiosity, tax education, and culture on the individual decision outcome of tax compliance or evasion (Richardson 2008; McGee & Cohn 2007). In this context, it can be mentioned here that an increasing number of researchers have shown interest on examining tax morale in different countries. The impact of social norms, values and culture cannot be ignored in analyzing the factors of tax evasion. Cummings et al. (2009) have reported the significant impact of social norms and cultural difference on tax evasion and compliance behavior. Furthermore, taxpayers' social and occupational identity might influence taxpaying behavior and attitudes. In this light, Ashby et al (2009) have found a complex relationship between occupational identity and taxpaying culture, by using a social identity framework in their empirical investigation.

Taxpayers are certainly members of a society, as well as of many different groups. It is, therefore, needless to mention that the norms, values, ethics, culture, behavior, and attitude of that particular society and groups must contribute to their decision about tax evasion. Accordingly, demographic variables should also be counted as factors in tax evasion. Recently, a growing number of scholars are shifting their emphasis from the enforcement paradigm to a service paradigm (Alm et al 2010). More recently, Alm et al (2010) suggest that tax administration should become 'kinder, friendlier', increasing taxpayer services together with the presence of detection and punishment. Many countries around the world have already revised their tax reform strategies.

The main determinants of shadow economies are tax and social security contribution, intensity of regulations, public sector services, and the official

economy, as Buehn and Schneider (2012) reported. In line with theoretical literature, Buehn and Schneider (2012) also suggest enhancing enforcement as an effective policy tool to deter shadow economy activities. Bilotkach (2006) has developed an equilibrium model of the game between a businessman and a corrupt supervising official in order to explain the conditions under which such tax evasion and bribery has become rampant in Ukrainian society. Rakner and Gloppen (2003; 2002) report that in the late 1980s, most African countries faced a series of fiscal crises that originated mainly from the crisis of governance. The tax evasion issue of African countries has attracted considerable research attention (Malkawi & Haddad 2009; Julius 2006; Kangave 2005; Gray 2001).

In India, Jain (1987) has identified the major causes of tax evasion, including a narrow concept of income, a complicated tax structure, frequent amendments, shortage of personnel, high tax rates, non-levy of deterrent penalties, ineffective prosecution machinery, lack of awareness among taxpayers, bribery, administrative and political corruption, and greed for money and power of dishonest businesspeople and traders. Gupta (1992) explores that the pervasive pursuit of personal gain, political corruption, corrupt business practices, weaknesses of the tax system, and inefficient and corrupt tax administration are responsible for tax evasion in India. As in India, tax evasion is a growing problem in Pakistan. According to Kemal (2007), the rapid increase of the underground economy significantly affects the monetary and fiscal policy formulation process of Pakistan. The rise of tax evasion in Pakistan is associated with various factors. As Kemal (2007) argues, loopholes and the complexity of Pakistan tax system facilitate evasion of tax.

Although a number of theories and models have been developed and research conducted in order to examine the phenomenon of tax evasion of developed, developing and transitional economies. Bangladesh has unfortunately been left to one side. Only in the last decade has internal resource mobilization through enhancing income tax collection achieved some attention from the government and policy makers. However, the tax evasion issue remains far from becoming a topic of policy debate and discussion and attracting research and academic attention and public concern. As a result, the literature on tax evasion in Bangladesh is scant in comparison with the severity of the problem. Perhaps the most important reason for the failure of tax evasion is to gain appropriate importance is that a number of policy makers, politicians, businesspeople, professionals, public officials, celebrities and renowned personalities are involved themselves in tax evasion in Bangladesh.

Few studies (Buehn & Schneider 2012; Hassan 2011; Torgler 2004; Schneider 2002) can be found to date on the tax morale issue and the size of the shadow economy of Bangladesh. Torgler (2004) study has demonstrated that tax morale in Bangladesh appeared to be highest among Asian countries over the period 1995-1997 at 96.3%. However, the reasons or justifications for such a finding remain unclear. Schneider (2002) and Buehn and Schneider (2012), on the other hand, have estimated the size of the shadow economies around the world over the period from 1999 to 2007 and have found Bangladesh to have a significantly large size of shadow economy, with 36.0% in 1999 and 35.6% in 2000. Recently, Hassan (2011) has conducted empirical research on the shadow economy of Bangladesh. The study reports that government employees conceal their illegal income through money laundering to tax havens or countries through their relatives or friends' bank accounts, and through buying plots of land, flats, bonds, share certificates, and cars in the name of a family member or close relative and friends who do not have tax files.

In the case of Bangladesh, the tax evasion issue, both direct and indirect, is virtually overlooked. As Chowdhury (1992) has said, any concern about evasion in Bangladesh remains unnoticed. It is yet to emerge onto the public agenda. In fact, in Bangladesh tax evasion remains like a social taboo about which nobody likes to speak. Sarker and Kitamura (2002) have identified the major problems of the income tax system in Bangladesh: its narrow tax base, tax evasion, and inadequacies of law and administration. According to them, tax evasion in Bangladesh soared and severely hampered revenue collection, which further exacerbated growth of a parallel black economy. The reasons for tax evasion in Bangladesh cited by Sarker and Kitamura (2002) were complex tax laws, lack of social security, coordination deficits among different government agencies and financial institutions, and inefficiency and corruption.

Furthermore, Rahman et al (2010) have attempted to investigate the factors behind the leakage of tax revenues in Bangladesh. They pointed to tax evasion, lack of awareness, official harassment, complexities of tax laws, and lack of social benefit as the major reasons for revenues losses. Based on the discussion of the available literature, it can, however, be argued that tax evasion is obviously a crucial problem for the economic progress of Bangladesh. It impedes revenue collection, causes corruption, undermines administrative efficiency, and encourages the shadow economy. Certainly existing research is consistent with the argument that the phenomenon of tax evasion in Bangladesh should be given more emphasis in order to reduce it. However, it will be no exaggeration to say that the issue of tax evasion in Bangladesh still lacks academic research attention.

The only literature that has enriched the analysis of social information to allow for local comparisons is that which uses agent-based simulation techniques as an alternative to analytical methods. Models in this tradition nonetheless employ representations of social networks that appear to differ markedly from real world examples. A common property of the network structures employed (Hokamp 2014; Bloomquist 2011) is that the number of taxpayers who observe a given taxpayer is fixed, thereby ruling out the existence of highly-observed celebrity taxpayers. Yet social networks display strong asymmetry in the direction of links (Szell & Thurner 2010).

The study offers a model that is both analytically tractable and that allows for local comparisons on an arbitrary social network. In this sense, our approach lies in the cleavage between existing analytical and agent-based approaches, and is complementary to each. We perform simulation analysis on a class of generative networks that are not subject to the restrictions discussed above, and which are utilized widely to model network structures in the natural sciences. Therefore the importance of conducting an exhaustive study on income tax evasion in the context of Bangladesh is paramount. Moreover, the relationship between tax evasion and social network should be examined, since both have a serious impact on the politics, bureaucracy and businesses of Bangladesh.

2.1 Theoretical Underpinnings

Based on the extant literature and relevant theories, this study seeks to provide useful insights into analyzing social network and tax evasion issue. The two phenomena, social network and tax evasion, because of their severity and pervasiveness across the world, have received considerable research attention. These two topics are much discussed in the fields of sociology, political science, economics, psychology and political economy. Social and behavioral scientists, political scientists, economists and policy analysts have developed a number of theories and approaches to explain and deal with them. A number of theories have been developed to explain the policy process including pluralism, structuralism, institutional theory, rational choice theory, and the economic theory of bureaucracy. The economic theory of bureaucracy applies the self-interest assumption of public officials (Hill 2009). Pluralist theorists argue for the equal distribution of power in the decision making process (Dahl 1970; 1958). Structuralist theorists emphasize class structure (Marx, cited in Hill 2009) and on the relationship between structure and action, whereas institutional theorists stress the role and creation of institutions such as the legislature, the judiciary, the constitution, and so on (Hill 2009). Rational choice theory analyses the policy process through economics and to some extent mathematics (Hill 2009).

2.1.1 Public Choice Theory

According to Kemp (1980), Taxes are to be levied, on whom, and at what rates are among the most important issues any government has to face. Public choice theorists have tried to shed light on institutions of politics which have a direct relationship with taxation. The present study also aims to analyze 'tax evasion', an important issue for the Bangladesh tax regime, from the viewpoints of public choice scholarship. Buchanan and Tullock (1965) have proposed the fundamental principles of public choice theory by explaining the scope of social choice, decision making rules, and the economics and ethics of democracy. Public choice theory is about the different incentives and processes that operate when goods are sought through political means rather than through purely economic means. The main point is the distribution of costs and benefits. The theory explains how individual political decision making formulates a policy which conflicts with the overall desire of the general public.

Public choice theorists have contributed significantly to understanding the role of individual

parliamentarians and bureaucrats in the policy formulation and implementation processes and a large volume of publications is available linking public choice theory to public administration and public finance, including tax policy and reforms (Mbaku 2008; Hettich & Winer 1999; 1997; Boyne 1998). Hettich and Winer (1997) state that taxation offers a testing ground for public choice theory since a number of analytical questions and quantitative data can be gathered from taxation. In relation to tax evasion from a public choice perspective, Downs (1957) opines that 'since every man enjoys the benefits of every government act, no matter who pays for it, each man is motivated to evade paying himself. In this context, the present study seeks to apply public choice theory to the tax policy formulation process of Bangladesh in order to analyze why and how political actors and bureaucrats formulate different tax policies which may leave room for tax evasion.

2.1.2 Rent-Seeking Theory

Rent-seeking theory is an important theory dealing with the behavioral patterns and economic rationale of individuals or institutions seeking benefits from the market. Krueger (1974) contends that competitive rent-seeking occurs in a divergence between the private and social costs of certain activities, which is very much evident in developing countries. Rent-seeking is an activity that uses resources wastefully to increase personal income or personal benefit (Hilman 2003; Tullock 1984). According to Laband and Sophocleus (1988), rent-seeking generates negatively-valued social product by investing economic resources to manipulate redistributive outcomes that favor the investor. Tollison (1997) reports that rent-seeking refers to socially costly transfers of wealth. Tax evasion is a form of rent-seeking since it causes social loss through the use of government resources and time (Hilman 2003). Ekelund and Tollison (1984) have noted that rent-seeking behaviour was observed in the early French economy due to the difficulties of tax collection and the ease of tax evasion. Palda (2001) explains tax evasion through the rent-seeking approach, using an example of a firm aiming to evade taxes and gain competitive advantage over its rivals. In this respect, the present study aims to employ rent-seeking theory in the tax policy implementation stage in Bangladesh.

2.1.3 The A-S Model

One of the most fundamental contributions to the taxation literature is that of Allingham and Sandmo (1972) in their theoretical analysis of the individual taxpayer's decision on whether and to what extent to evade taxes by deliberately underreporting income. They have developed a model in 1972 which is still considered a pioneer work in the field of analyzing the influence of tax rates and the probability of detection, penalty, and punishment on a taxpayer's decision to evade tax. The A-S model has identified two options available for an individual taxpayer such as he/she may declare his actual income and may declare less than his actual income. This study intends to apply the A-S model in the case of the tax evasion issue of Bangladesh in order to empirically explore the perceptions, views and opinions of taxpayers about the relation between tax evasion and tax rates, and the probability of detection, penalty and punishment.

2.2 Research Ethics

The study asked for full consent from participants where we explained the motivation of study to the participated assesses. They had the freedom to leave the study at any time or may remain silent to specific questions if they were not comfortable. User data was anonymized. All our collected data are securely stored in a locked drive, and only researchers have access to it.

3.0 Research Methodology

3.1 Theoretical Model

To understand the way in which social information affects the evasion decision. This study do this for an arbitrary social network satisfying the conditions in a basic property of the model is strategic complementarity in evasion choices, an increase in evasion by one taxpayer induces others to do likewise. This is equivalent to the expected utility of taxpayer *t* being super modular in the cross evasion choice of another taxpayer *c* belonging to *t*'s reference set:

$\Delta^2 E(U_t)/\Delta E_t \Delta E_c = a_t\, k_{tc}(1-p_t\, f)(1-p_c\, f) > 0$ ……..(i)

It can be analyzed how the evasion decision of a taxpayer *t*, E_t, is affected by a permanent marginal increase in a parameter P_c belonging to a different taxpayer t = c. Differentiating the expression for evasion in Equation (i) which obtain Equation (ii). Under the conditions of Equation (i) it holds at an interior Nash equilibrium that:

$\Delta E_t/\Delta L_c = Y_{1t}(Z,1,\Delta\beta/\Delta Q_t) > 0$;

$\Delta E_t/\Delta p_c = Y_{1t}[\{Z,1,(\Delta Z/\Delta p_t)E\} + \Delta\beta/\Delta p_t] \leq 0$ …..(ii)

The results in Equation (ii) underscore that the attributes of other taxpayers, and the treatment of other taxpayers by the tax authority, both affect own compliance. In addition, the impacts are heterogeneous across taxpayers, depending upon how close taxpayers are in the social network. In respect of sign, these results are in line with those of models of tax evasion that assume a social norm for compliance, albeit there are important differences in economic interpretation.

The first result is that an increase in the income of taxpayer *t* induces taxpayer *t* to evade more. However *c* gets richer this pushes up their expected consumption, causing those taxpayers who observe c's consumption to feel poorer in relative terms. This, in turn, induces these taxpayers to increase their evasion in an attempt to boost their consumption. This behavior, in turn, induces a further set of taxpayers to also feel poorer, and also increase their evasion, and so on. If the network N is connected then this wave effect ultimately reaches every taxpayer in the network, so the result in Equation (ii) may be strengthened to a strict inequality. If N is not connected, however, then there exists at least one taxpayer pair {t, c} between whom social information does not flow. For such pairs it will hold that $\Delta E_t/\Delta L_c = 0$.

The second result in Equation (ii) is an enforcement spillover effect, the evasion of taxpayer *t* responds negatively to the level of tax authority enforcement of other taxpayers in the social network. However a taxpayer *c* experiences an increase in audit probability they decrease their evasion. This decreases the evasion required of taxpayer *t* to maintain a given level of expected relative consumption, leading *t* to evade less. The result can be strengthened to a strict inequality if the network Z is connected. This outcome is consistent with the empirical literature documenting local enforcement spillover effects in networks discussed in the introduction.

This study generate the social network Z following the approach of network scientists, who utilize a class of network models, known as generative models, to investigate complex network formation (Pham et al 2016). In this modelling paradigm, complex networks are generated by means of the incremental addition of nodes and edges to a seed network over a sequence of time-steps. Two processes governing the node/edge dynamics in generative models have been shown to generate features consistent with a multitude of social, biological, and technological networks (Capocci et al 2006; Redner 1998). Firstly, the node-degree process, makes the probability that each new taxpayer added to the network observes an existing taxpayer, *t*, a positive function of t's degree. Secondly, the node-fitness process, makes the probability that a new taxpayer added to the network observes an existing taxpayer, *t*, a positive function of t's fitness.

By allowing for a role for node-fitness in social network formation, we are able to account for the observation that, empirically, celebrity taxpayers are surely not drawn at random from the distribution of income, but rather belong systematically to the upper tail. To copy this feature, we equate node-fitness with income L_t. We specify the distribution function of L_t across taxpayers to satisfy a power law, consistent with a large body of empirical evidence (Coelho et al 2008). In implementation this study generate networks of N=421 business individual taxpayers, starting from a seed network composed of two interlinked taxpayers. Consider a taxpayer *t* with fitness $L_t > 0$ and degree Δ_{tg} at step *g* of the generative process. We entwine the node-degree and node-fitness processes by setting the probability that taxpayer *t* is observed by the taxpayer added at step *g* to be proportional to the product $L_t\Delta_{tg}^{0.43}$ is (Pham et al 2016).

The taxpayer *t* incrementally added to the network at step *g* is linked to existing taxpayers according to the outcome of five random draws under the probability distribution $L_t\Delta_{tg}^{0.43}$. However, that these draws are with replacement, so a taxpayer may be linked to another multiple times. As the model allows for only a single, albeit weighted, link between taxpayers, we construct the comparison intensity weights to be proportional to the frequency of links realized by the generative process. Owing to its stochastic nature, any single iteration of the generative process may realize a *Z* that is unrepresentative. To mitigate this concern, the results we report are averages of multiple independent iterations of the generative process.

Having now described the social network, we specify the remaining model functions and parameters. To make concrete the vector of predicted income, $\hat{L} = L(d;Z)$, we specify the tax system as a linear income tax, $\beta(L_t) = \beta L_t$, where $\beta \in (0, 1)$, such that $E(L_t) = \beta[L_t - d_t]$ and $Q(L_t) = [1 - \beta] L_t$. We then have a network

with adjacency matrix AM and weight vector χ with elements given by

$AM_{tc} = [\{(1-p_t f)(1- \beta p_t f)\}/\varepsilon_t]z_{tc}$

where $\varepsilon_t = (1- \beta)(1-p_t f)^2 + \beta\{1+ p_t (1- p_t)f^2\} > 0$

$\chi_{tc} = [\{1+(f-2)p_t f\}\beta a_t d_t + b_t(1-p_t f)]/a_t\varepsilon_{t-}\{\beta(1-p_t f)\sum_t \epsilon(1- p_t f)d_t z_{tc}\}/ \varepsilon_t$

Then, under the conditions of equation (i), and with a linear income tax, the set of incomes L corresponding to a set of optimal income declarations d is given by

$L(d;Z) = [I - AM]^{-1} \chi$.

Taxpayers are assumed to know the true average probability of audit, p, but do not know how the tax authority will select audit targets. Consistent with this idea, tax authorities are known to shroud their audit selection rules, the so-called DIF score (Alm & McKee 2004; Plumley & Steuerle 2004). This study set (p, f) to be consistent with a level of evasion of 10%, as is broadly consistent with the empirical evidence for developed countries.

3.2 Data

The main research area for the study is to examine the case of tax evasion in Bangladesh. Therefore, the researchers decided to select the sample from Bangladesh. The sample location was Dhaka, capital of Bangladesh. The reason for selecting Dhaka is that Bangladesh is a unitary Republic with central and local government. However, central government, based in Dhaka city, plays the key role in decision making and policy formulation processes. Most government organizations are located in Dhaka. In addition, the actual revenue collection target for the financial year 2017-2018 was set at BDT 87,190 crore and BDT 62,340.42 crore was collected, of which 44.51% was in fifteen zones of Dhaka and it has reached a total of 73.22% when the large taxpayers and the central survey zone were combined (NBR 2018). Moreover, Dhaka is the center of business and professional activities in Bangladesh. In this study, to examine the tax evasion issue from the viewpoint of social network.

This study is a cross sectional design with quantitative approach. The target population of the study is individual income taxpayers of the fifteen zones of Dhaka. According to the National Board of Revenue authority of Dhaka administration, the total individual taxpayers 740,925 where self-assessment assesse 724,063 and general assesse 16,862 were submitted annual return during the financial year 2017-2018 (NBR 2018). This study selects these categories because they are required by law to maintain and submit books of accounts to the tax authority within the stipulated time. The sample is selected by following the method of proportional allocation under which the sizes of the samples from the different strata are kept proportional to the sizes of the strata. For the purpose of the study sample size is determined by using formula (Krejcie & Morgan 1970):

$s = X^2 NP(1-P) / d^2 (N-1) + X^2 P(1-P)$

Where

s = required sample size

X^2 =the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (0.50)

Therefore sample size is determined to 385 universal self-assessment return submitted taxpayers and general procedure return submitted 376 to which the questionnaire was distributed. This study has followed a convenience sampling method. This sampling method has also been conducted in the context of Malaysia (Ser 2013), the USA and Hong Kong (Chan et al 2000). Convenience sampling method has the advantage over reliability, time and budget constraint. The sample is allocated to each zone according to the population weight. The study has used primary data collected by using structured questionnaires. The survey was conducted during the period of 1st December 2019 to 15th February, 2020. The questionnaire is composed of closed ended questions designed on mostly a Likert scale. Questionnaires were delivered to people of various income levels. Questions were pre-coded during the survey questionnaire, data processing and analysis. The quantitative data were subsequently entered into STATA for analysis.

4.0 Results and Discussions

Table 1.1 presents descriptive statistics of respondents. In total, 761 respondents filled in the questionnaire completely. Standard deviation of the age of respondents was 84.82. The respondents were aged between 41 to 50 (35.22%), followed by 31 to 40 (25.22 %), 51–60 (13.27 %), 21 to 30 (10.11%), 61 to 70 (9.07%) and 71–80 (7.10 %). Among the

respondents, male were 83.84% and female 16.16%. Almost half of the respondents (49.54%) were completed graduate level studies, followed by higher secondary level (34.30%), secondary level (14.85%) and 4.47 % completed post-graduation, while 11.43 % had no formal education. Majority (55.32%) respondents were engaged in business, followed by private service (14.85%), self-employee (9.72%) and public service (2.90%). Around one-third (29.30%) of the total respondents had yearly taxable income in between BDT 2,50,000 to BDT 4,00,000 followed by 27.20%, 26.54%, 13.27% and 3.68% of respondents whose income were in between respectively BDT 5,00,001 to 6,00,000, BDT 4,00,001 to 5,00,000, BDT 6,00,001 to 30,00,000 and BDT 30,00,000 and above.

Table 1.1: Descriptive Statistics

Descriptions	Frequency	Percentage
Age		
21-30	77	10.11
31-40	192	25.22
41-50	268	35.22
51-60	101	13.27
61-70	69	9.07
71-80	54	7.10
Standard Deviation		84.82
Gender		
Male	638	83.84
Female	123	16.16
Level of education		
No any formal education	87	11.43
Secondary level	113	14.85
Higher secondary level	261	34.30
Graduation level	377	49.54
Post-graduation level	34	4.47
Employment status		
Public service	22	2.90
Private service	113	14.85
Self-employed	74	9.72
Business	421	55.32
Annual level of income		
2,50,000-4,00,000	223	29.30
4,00,001-5,00,000	202	26.54
5,00,001-6,00,000	207	27.20
6,00,001-30,00,000	101	13.27
30,00,000 and above	28	3.68

Four questions were asked to learn participants' perceptions of the influence of the tax rate, the probability of detection, and the audit system on tax evasion behavior. Survey results are shown in Table 1.2. Based on the findings, it can be inferred that higher rates of tax, lower rates of penalty, low probability of detection and slackness of audit play a significant role in taxpayers' decisions on evading tax.

Table 1.2 Perceptions on the Tax Rate, Penalty and Enforcement

Statements	Agreement/ Disagreement	Employment status (%)			
		Public service	Private service	Business	Self-employed
High rates of income tax are one reason for tax evasion	Strongly Agree	69.90	15.70	6.60	30.90
	Agree	30.10	70.00	87.1	61.10
	Moderately Agree	0.00	0.00	6.30	3.20
	Do Not Agree	0.00	14.30	0.00	4.80
	Total	100	100	100	100
Low rates of penalties are responsible for causing tax evasion	Strongly Agree	29.40	0.00	6.10	12.10
	Agree	61.20	35.50	43.20	45.30
	Moderately Agree	9.40	49.80	33.00	29.10
	Do Not Agree	0.00	14.70	17.70	13.50
	Total	100	100	100	100
An increase in the probability of detection may prevent tax Evasion	Strongly Agree	99.00	15.10	45.90	57.10
	Agree	1.00	49.10	22.10	19.30
	Moderately Agree	0.00	17.10	14.30	20.10
	Do Not Agree	0.00	18.70	0.00	3.50
	Total	100	100	100	100
The weakness of the audit system is responsible for allowing tax Evasion	Strongly Agree	69.90	32.80	49.10	52.30
	Agree	30.10	67.20	27.60	35.10
	Moderately Agree	0.00	0.00	23.30	12.60
	Do Not Agree	0.00	0.00	0.00	0.00
	Total	100	100	100	100

According to the employment status, the result shows that 69.90% (Public service), 15.70% (private service), 6.60% (business) and 30.90% (self-employed) of respondents strongly perceived that high income tax rates were responsible for tax evasion. If the score of 'strongly agree' and 'agree' are collapsed, it is shown that majority supported this statement. The survey findings tend to be consistent with the findings of the interviews. The interviewees expressed their opinions about the positive correlation between higher tax rates and higher tax evasion. A large of theoretical and empirical literature on tax evasion has demonstrated a positive relationship between higher rates of tax and tax evasion. In Australia, Wallschutzky (1984) found that 89.0% of evaders perceived tax rates as too high. Bayer (2006) suggests that higher tax rates are responsible for more tax evasion and wastage of resources, due to the contest between the taxman and taxpayers. In the case of China, Fisman and Wei (2004) show that a 1% increase in the tax rate caused a 3% increase in tax evasion.

In addition to the above Table 1.2 shows that the statement 'low rates of penalties are responsible for causing tax evasion' was strongly supported by 29.40% (Public service), 6.10% (business) and 12.10% (self-employed) of respondents. A significant 61.20% (Public service), 35.50% (private service), 43.20% (business) and 45.30% (self-employed) moderately agreed. A possible interpretation may be that the respondents, who were supposed to be the taxpayers, downplayed their role, perceiving that if they strongly supported the statement, the government might increase the penalty rate to deter tax evasion. The survey finding has revealed the importance of imposing higher penalties to minimize tax evasion. Interestingly, in accordance with the Income Tax Ordinance, 1984, the lowest amount of penalty is 'a sum not exceeding one hundred taka' (just over US $1) (Section 123.b, Income Tax Manual Part- I, 2009, p. 239). It can be argued that the rates of penalties in the Ordinance are not significant for making tax evaders aware of the payment they would need to make for noncompliance. A risk-averse taxpayer will consider

the rates of penalty before committing tax evasion. Therefore, penalties can be used by tax administrators as an instrument for combating tax evasion (Obid 2004). Low penalty rates will not deter taxpayers from evading tax.

Moreover, a question was asked to learn whether respondents perceived that an increase in the probability of detection would decrease the level of evasion. Above Table 1.2 shows that 99.00% (Public service), 15.10% (private service), 45.90% (business) and 57.10% (self-employed) strongly agreed. Risk aversion is a natural tendency of human beings. In the case of tax evasion, the risk-averse taxpayer will also calculate all possible risks in evading taxes. Thus, the probability of detection may be of one of the most crucial risks for a tax evader. If the evader knows that there is strong possibility of being detected, he/she might be wary of underreporting income. Besides, if there is sufficient reason for an individual to believe that he/she will not be detected evading tax, self-utility maximization psychology will lead to evasion. This findings of the study are consistent with the basic tenet of the A-S model such as the higher the probability of detection, the larger the income taxpayers will declare (Allingham & Sandmo 1972). Risk-averse taxpayers will be conscious of the consequences of evasion if the tax administration is efficient enough to detect and monitor underreporting of income.

Furthermore, the weaknesses of the audit system were strongly indicated by 69.90% (Public service), 32.80% (private service), 49.10% (business) and 52.30% (self-employed) of respondents as a reason for allowing tax evasion in Bangladesh to occur. Moreover, 30.10% (Public service), 67.20% (private service), 27.60% (business) and 35.10% (self-employed) agreed with the statement and 23.30% (business) and 12.60% (self-employed) moderately agreed. None disagreed. The audit system of the tax administration in developing countries is not free from weaknesses which might be contributors to the underground economy. As Friedman et al. (2000) point out that weaknesses in the legal system encourage the underground economy to flourish.

The empirical findings shows the differences in perceptions of the four groups of respondents in relation to the impact of tax rate, probability of detection, penalty, audit on tax evasion. It can be seen that professional subgroup appeared to be more strongly supportive. Overall, based on the findings of the survey, interviews and the literature, it can be assumed that high tax rates, low rates of penalties and a weak audit system encourage tax evasion in Bangladesh.

Before the regression discontinuity analyses, we focus on observations around the 10% threshold. This is a potential threat to the continuity of characteristics of the underlying population and, thus, a possible threat to a practical implementation of regression discontinuity approach that requires the outcome is smooth in the neighborhood of the threshold. It is indeed possible that observations are bunched at these selected points are not similar to the neighboring ones. It is likely to be correlated with many characteristics of individuals. However, for the regression discontinuity analysis, we exclude exact fractional observations from the sample of analysis. For the network analyses, it also need to restrict the sample further to operationalize the family network variable, and to ensure that the assumptions of the regression discontinuity design are not violated by family members.

Now, we turn to the network level analysis by analyzing adoption of an individual. We focus on network members who fall into subsamples in which we showed evidence of a discontinuity in adoption: we exclude network members with fractional shares, and further zoom in on those receiving capital income and in firms with large number of shares. We do not impose any additional restrictions on individuals themselves—the running variable is the property of the network member and he/she may affect family members regardless of their characteristics.

Further, we want to make sure that when we compare individuals with network members on either side of the 10% threshold, this is the only difference between those groups. It shows that as the network member's share is crossing 10%, the share owned by the individual itself is more likely to be above 10% as well. It turns out that this is driven by family members owning identical number of shares. Thus, in what follows, we restrict attention to network links between individuals who do not own shares. In addition, it shows, in that subsample the likelihood of having a share above 10% sails smoothly through the threshold. We restrict attention to this subsample in what follows. Beside the necessity of exploiting discontinuity for identification purposes, restricting attention to

network links between individuals who do not own shares in the same firm also has economic content.

Figure 1.1 shows the discontinuity-based evidence of adoption elsewhere in the network on individual adoption, and the top panel of Table 1.3 shows the corresponding estimates. The estimates of the discontinuity are generally significant and reasonably stable as the window around 10% is adjusted. The result also shows the number of unique treating network members that underlie each specification—there are about half as many of them as all the observations. The large of the difference is explained by the same network member treating multiple individuals in the network.

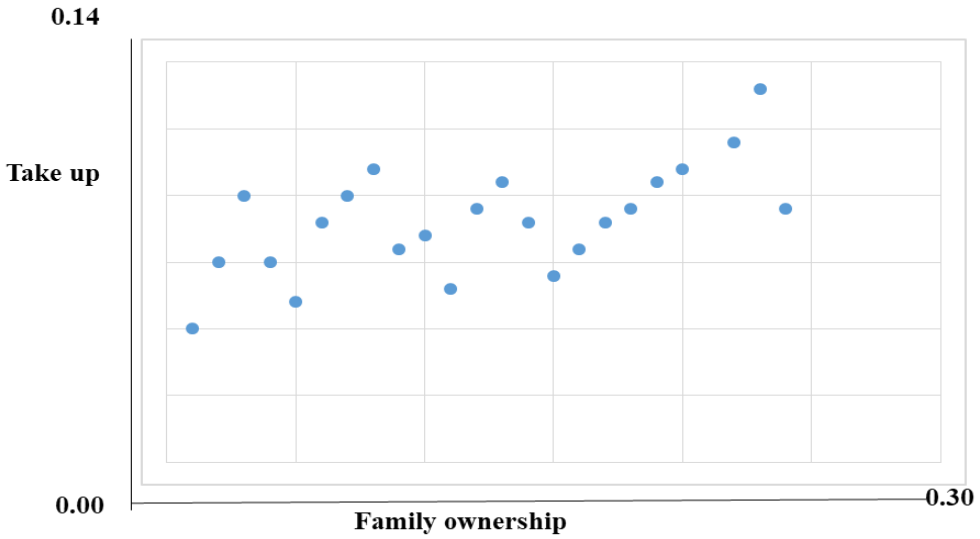

Figure 1.1 Family member's ownership share and ultimate adoption of the firm

Notwithstanding, the network effect may be present regardless of one's own ownership, individuals who already own at least 10% are already eligible for any additional arrangements and thus may be more strongly affected. At the same time simultaneously, by the virtue of their eligibility, they are more likely to set up a firm regardless, so that the additional network incentive might be expected to be weaker for that reason. However, the second panel shows robustness of the results to inclusion of demographic controls—they are essentially unaffected. Overall, we observe that the estimated effect of a network member being eligible in Table 1.3 is roughly similar in magnitude to the effect of the individual herself being eligible. It explores that the large network effect relative to own effect is consistent with either interactions being strong or else low awareness of sheltering opportunities absent interaction with a treating individual.

Table 1.3 The effect of crossing 10% ownership by a family network member

Description	Everyone		Minimum 10% Share	
	No Control	Flexible	No Control	Flexible
Age				
21-30	0.023	-0.004	0.061	-0.004
	(0.016)	(0.017)	(0.016)	(0.041)
31-40	0.28	0.060	0.024	0.062
	(0.011)	(0.027)	(0.014)	(0.021)
41-50	0.018	0.022	0.027	0.032
	(0.007)	(0.018)	(0.011)	(0.012)
51-60	0.014	0.032	0.032	0.028
	(0.006)	(0.014)	(0.007)	(0.015)
61-70	0.008	0.038	0.051	0.028
	(0.004)	(0.010)	(0.008)	(0.013)
71-80	0.023	0.023	0.028	0.031
	(0.016)	(0.017)	(0.012)	(0.011)
Gender				
Male	0.023	0.037	0.055	0.039
	(0.15)	(0.010)	(0.007)	(0.012)
Female	0.017	0.141	0.023	0.015
	(0.011)	(0.033)	(0.022)	(0.037)
Level of education				
No any formal education	0.017	0.061	0.023	0.073
	(0.012)	(0.027)	(0.012)	(0.021)
Secondary level	0.028	0.026	0.048	0.025
	(0.007)	(0.016)	(0.011)	(0.024)
Higher secondary level	0.012	0.024	0.038	0.023
	(0.008)	(0.012)	(0.006)	(0.015)
Graduation level	0.056	0.034	0.071	0.025
	(0.026)	(0.010)	(0.007)	(0.012)
Post-graduation level	0.032	0.352	0.112	0.312
	(0.029)	(0.085)	(0.036)	(0.082)
Annual level of income				
2,50,000-4,00,000	0.057	0.221	0.097	0.213
	(0.027	(0.065)	(0.021)	(0.076)
4,00,001-5,00,000	0.031	0.122	0.061	0.132
	(0.014)	(0.033)	(0.022)	(0.033)
5,00,001-6,00,000	0.024	0.086	0.074	0.071
	(0.019)	(0.033)	(0.015)	(0.026)
6,00,001-30,00,000	0.044	0.111	0.071	0.095
	(0.028)	(0.015)	(0.011)	(0.026)
30,00,000 and above	0.032	0.342	0.132	0.314
	(0.015)	(0.101)	(0.054)	(0.112)

We further split the sample by whether the network member received dividends in past. The bottom two panels of Table 1.3 show that for those with family members who received dividends, the effects are of the expected sign and not too sensitive to the size of the window or inclusion of controls. They are becoming significant when the window around the threshold grows and in narrow window when no controls are

included. The outcomes for those with family members who have not received dividends are smaller and generally insignificant. This is consistent with the interpretation of take-up by a family member reflecting the presence of the treatment, since the direct effect on take-up for that group was not detectable, observing an impact on their family members would be surprising.

In Table 1.4 we split the sample in additional ways. The impact of own eligibility was strong and the corresponding outputs are strong here as well. Thereafter, we split the sample by whether the treated individual itself received dividends in the past. This study find more precise statistical evidence for those who did not receive dividends themselves than for those who did, though the large standard errors do not allow for rejecting the possibility that point estimates are not statistically different. Nevertheless, even if the coefficients for those without dividends were similar in absolute value, the base take-up for this group is much lower and thus the effect is economically much more significant. Hence, a very rough taxonomy of the results may be that treating individuals with most to gain are most responsive to the 10% threshold incentive, but they stimulate take-up by individuals who have less potential to gain and so probably least informed otherwise.

Table 1.4 The effect of crossing 10% ownership by a family network member on take-up decomposition of response

Description	Everyone		Minimum 10% Share	
	No Control	Flexible	No Control	Flexible
Age				
21-30	0.033	-0.005	0.072	-0.003
	(0.015)	(0.016)	(0.014)	(0.032)
31-40	0.38	0.071	0.033	0.071
	(0.010)	(0.037)	(0.023)	(0.032)
41-50	0.028	0.032	0.037	0.042
	(0.008)	(0.027)	(0.010)	(0.021)
51-60	0.023	0.024	0.042	0.038
	(0.008)	(0.013)	(0.006)	(0.014)
61-70	0.006	0.027	0.055	0.037
	(0.003)	(0.011)	(0.007)	(0.012)
71-80	0.023	0.033	0.038	0.041
	(0.015)	(0.016)	(0.011)	(0.013)
Gender				
Male	0.032	0.046	0.051	0.047
	(0.16)	(0.011)	(0.008)	(0.013)
Female	0.018	0.131	0.033	0.025
	(0.010)	(0.022)	(0.020)	(0.026)
Level of education				
No any formal education	0.046	0.062	0.043	0.072
	(0.023)	(0.018)	(0.023)	(0.032)
Secondary level	0.015	0.013	0.036	0.034
	(0.006)	(0.025)	(0.011)	(0.022)
Higher secondary level	0.032	0.044	0.028	0.044
	(0.006)	(0.012)	(0.008)	(0.012)
Graduation level	0.056	0.034	0.072	0.024
	(0.014)	(0.021)	(0.007)	(0.010)
Post-graduation level	0.042	0.452	0.212	0.412
	(0.019)	(0.075)	(0.026)	(0.072)
Annual level of income				
2,50,000-4,00,000	0.055	0.201	0.087	0.113
	(0.017	(0.075)	(0.031)	(0.066)
4,00,001-5,00,000	0.021	0.222	0.071	0.232
	(0.012)	(0.022)	(0.021)	(0.031)
5,00,001-6,00,000	0.034	0.076	0.064	0.081
	(0.018)	(0.023)	(0.014)	(0.024)
6,00,001-30,00,000	0.034	0.101	0.061	0.085
	(0.018)	(0.014)	(0.010)	(0.016)
30,00,000 and above	0.022	0.442	0.122	0.214
	(0.014)	(0.111)	(0.052)	(0.102)

As the public choice theorists argue that human beings are basically rational utility maximizers. Based on the core concepts of public choice theory, it can be argued that politicians, bureaucrats, and businesspeople are self-interested individuals who strive for their own private goals and ambitions. In this regards, an attempt was made to test the applicability of public choice theory to the tax policy formulation of Bangladesh, focusing on the self-seeking nature of human being. The findings are consistent with the arguments of public choice theory. Trends in the tax policy formulation process and in some tax policies pointed to the self-interested behavior of policy makers. The desire for personal financial gain by tax officials enhances opportunities for rent-seeking (Lambsdorff 2002). Dishonest taxpayers, including businesspeople, professionals, and self-employed people, negotiate with corrupt tax officials to reduce or to avoid the legal obligation of tax payment. Thus, the connivance of taxpayers and tax officials in tax policy implementation facilitates each to earn 'the above normal profits described as rents' (Khan 1996). As a consequence of the rent-seeking of tax authorities and taxpayers, the Bangladesh government fails to collect proper income taxes from potential taxpayers. Thus, it can be argued that the opportunity cost of this rent-seeking leads to the continuous budget deficit of Bangladesh.

The primitive argument of the A-S model is that tax evasion will decrease with increases in penalty and the probability of detection (Allingham & Sandmo 1972). The survey results were consistent with the A-S model. In the context of the A-S model, it can be argued that, if an increase in the penalty decreases tax evasion, then, conversely, a low rate of penalty will increase tax evasion. An interpretation for the less strong support for the statement may be that, in the context of Bangladesh, the imposition of a penalty for tax evasion has not yet been widely practiced. Therefore, participants perhaps tended to not perceive significant influence in low rates of penalty on tax evasion. Other explanation may be that the respondents tended to not strongly recognize the relationship between low rates of penalties and tax evasion to avoid the possibility of increasing penalty rates by policy makers as a deterrent to tax evasion. Finally, a set of theories, public choice, rent-seeking, and the A-S Model, were shown in the framework for analyzing tax evasion and social network. The empirical findings of tax policy formulation, its implementation and compliance processes were consistent with the core arguments of these theories as applied respectively to each process.

5.0 Conclusion

The findings of the study demonstrated numerous issues in the tax policy implementation process that are associated with tax evasion. In this paper we apply to tax evasion recent advances in network theory and a large literature on the role in individual decision-making of social comparison. Our key theoretical advance is to demonstrate a link between network centrality on a social network and tax evasion. Our modelling allows for local consumption comparisons and utilizes networks that have the properties of observed social networks. Given that tax authorities are now investing in technology that seeks to construct social networks, the study shows that network information can allow a tax authority to better predict the likely revenue benefits from conducting an audit of a particular taxpayer. In particular, for a tax authority that is largely ignorant of the social network, we document strong initial revenue gains from acquiring relatively small amounts of network information. The basic model we have presented here offers much scope for future research. The article suggests three avenues. Firstly, it would be of interest to introduce dynamic features to the model that relate behavior today to past reporting decisions and audit outcomes. Secondly, while we have focused on tax evasion, early empirical work suggests the relevance of a similar modelling approach to tax avoidance behavior, or indeed criminal activity more generally. Thirdly, as we have assumed income to be exogenously determined, it would be of interest to introduce formally a labor-supply decision.

In the tax policy formulation process, the empirical data revealed the lack of comprehensive research on the flaws of the tax system and how to overcome them, the lack of specialized knowledge on the part of some policy makers, the importance of comparing Bangladeshi tax policies with the tax policies of developing and developed countries, and the importance of a reform of the Income Tax Ordinance 1984. It is evident in the empirical findings that shortcomings of income tax laws and policies, such as the absence of a clear definition of tax evasion, loopholes and anomalies in the tax laws, frequent

changes in tax-related documents, and repeated promulgation of tax amnesties are responsible for facilitating tax evasion. It is to be noted that the policy implementation process plays the crucial role in implementing tax policies as well as collecting revenues. If there remains weaknesses and flaws in the implementation process, the taxpayers will tend to exploit such leakages.

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The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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QUESTIONNAIRE

Surveyor ID: Participation number: Date:

Assessment type: General Self-assessment

SL	Description						
1.	Gender			*Male*	*Female*		
2.	Age						
3.	Marital status						
	Single	*Married*		*Divorced*	*Widowed*		
4.	What was the last grade of school you completed?						
	No any formal education	*SSC*	*HSC*	*Graduation level*	*Post-graduation level*		
5.	Could you please describe your profession?						
	Professional	*Business*	*Private service*	*Public service*	*Self-employed*		
6.	Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between: Cheating on tax if you have the chance						
	Never	*Sometimes*		*Always*	*Probably*		
7.	Trading or exchanging goods or services with a friend or neighbor and not reporting it on your tax form					*YES*	*NO*
8.	Reporting your main income fully, but not including some small outside income					*YES*	*NO*
9.	Being paid in cash for a job and then not reporting it on your tax form					*YES*	*NO*
10.	Not reporting some earnings from investments or interest that the government would not be able to find out about					*YES*	*NO*
11.	Do you feel it is wrong or not wrong if a taxpayer does not report all of his or her income in order to pay less income taxes?						
	Not wrong	*A bit wrong*		*Wrong*	*Seriously wrong*		
12.	Within the past five years or so, do you think you might have left some reportable income off your tax return – even, just a minor amount?						
	definitely have not	*definitely have*		*May be*	*May be not*		
13.	What was the highest tax rate level for the last financial year?						
	10%	*15%*		*20%*	*25%*	*30%*	
14.	Could you tell me how much confidence you have in the legal system?						
	a greatly	*quite a lot of*		*not very much*	*none at all*		
15.	Public officials can usually be trusted to do what's right?						
	strongly agree	*mildly agree*		*mildly disagree*	*strongly disagree*		
16.	Could you tell me how much confidence you have in the government in your capital?						
	a greatly	*quite a lot of*		*not very much*	*none at all*		
17.	How much confidence do you have in courts system?						
	a greatly	*quite a lot of*		*not very much*	*none at all*		
18.	Could you tell me how much confidence you have in the legal system?						
	a greatly	*quite a lot of*		*not very much*	*none at all*		
19.	Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?						
	Most people can be trusted			*Can't be too careful*			
20.	Would you say that having a democratic political system is a very good?						
	Fairly good	*Fairly bad*		*Very bad*	*Way of governing*		
21.	Democracy may have problems but it's better than any other form of government?						
	Strongly agree	*Mildly agree*		*Mildly disagree*	*Strongly disagree*		
22.	How satisfied are you with the way the people now in national office are handling the country's affairs?						
	Fully satisfied	*Fairly satisfied*		*Fairly dissatisfied*	*Very dissatisfied*		
23.	Would you please put mark the political system as it is today?						
	Very good	*Fairly good*		*Fairly bad*	*Very bad*		
24.	How satisfied are you with the financial situation of your household?						
	Fully satisfied	*Fairly satisfied*		*Fairly dissatisfied*	*Very dissatisfied*		
25.	Could you tell me if recently you have known someone or have heard someone you know comment about somebody who has: Managed to avoid paying all his tax					*YES*	*NO*
26.	Would you say that a person in our country who has committed an illegal act gets caught?						
	is very possible	*fairly possible*		*a little possible*	*not at all possible*		

27. Could you please rank the NBR in regards to the processing returns?
Excellent *pretty good* *only fair* *poor*

28. Could you please rank the NBR in regards to the issuing refunds?
Excellent *pretty good* *only fair* *poor*

29. Could you please rank the NBR in regards to the answering questions?
Excellent *pretty good* *only fair* *poor*

30. Could you please rank the NBR in regards to the auditing returns?
Excellent *pretty good* *only fair* *poor*

31. Could you please rank the NBR in regards to the collecting taxes due?
Excellent *pretty good* *only fair* *poor*

32. The NBR employees are honest – you could never bribe them.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

33. NBR employees are just as knowledgeable as any private tax expert.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

34. I am confident that the NBR would never try to take more money from me than they should.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

35. You can depend on the IRS to keep accurate tax records.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

36. NBR procedures and practices are fair and reasonable ones that respect the rights of taxpayers.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

37 How do you feel about the government income tax system as it applies to the tax return – do you feel it is?
quite fair *reasonably fair* *somewhat unfair* *quite unfair*

38. The present tax system benefits the rich and is unfair to the ordinary working man or woman.
Strongly agree *Mildly agree* *Mildly disagree* *Strongly disagree*

39. Do you ever talk about NBR and its activities with your family? *YES* *NO*

40. Do you ever talk about NBR and its activities with your friends and co-workers? *YES* *NO*

41. What is the minimum fine for tax evasion in your jurisdiction? *YES* *NO*

42. What is the maximum fine for tax evasion in your jurisdiction? *YES* *NO*

43. Do you apply the criminal code in the case of tax fraud? *YES* *NO*

44. Is there a monetary fine in the case of tax fraud? *YES* *NO*

45. Do you treat tax fraud in the same way as tax evasion? *YES* *NO*

46. How much attention did you pay to discussions on the media about NBR and its activities?
A lot *Quite a bit* *Some* *Very little* *No attention*

47. How proud are you to be a taxpayer?
Not at all proud *Not very proud* *Quite proud* *Very proud*

48. May I know your annual level of taxable income for the current financial year 2017-2018?
BDT 2,50,000-4,00,000
BDT 4,00,001-5,00,000
BDT 5,00,001-6,00,000
BDT 6,00,001-30,00,000
BDT 30,00,000 and above

49. Statements

	Strongly Agree	*Agree*	*Moderately Agree*	*Do Not Agree*
High rates of income tax are one reason for tax evasion				
Low rates of penalties are responsible for causing tax evasion				
An increase in the probability of detection may prevent tax evasion				
The weakness of the audit system is responsible for allowing tax evasion				