

Measuring and Analysing Deterrence In Taxpayer Compliance Research

Ken Devos
Monash University

1. Introduction

Deterrence theory is one of the major theoretical areas of taxpayer compliance. There has been great research advances made in deterrence theory over the years with particular reference to the deterrent effect of different forms of sanctions. However, research has slowed since 1986 and in particular an off-shoot of deterrence theory, neutralisation theory¹ has been lacking in research attention.² It has also been suggested that the basic deterrence theory model has seriously underestimated the actual level of tax compliance³. To add to this, the development of the social/psychology model of taxpayer behaviour has also impacted upon and challenged the principles and fundamentals of the pure economic deterrent model with respect to taxpayer compliance.

For these reasons it is important to investigate the compliance variables used in the economic deterrence model with a view to analyzing their appropriateness and contribute to the further development of deterrence theory. In particular, the aim of this paper is to analyse the incorporation of specific compliance variables into the economic deterrence model and the employment of mixed research methods to assist in measuring the impact of deterrence upon taxpayer compliance.

The remainder of the paper is structured in the following manner. Section two begins with a brief discussion of the rationale for deterrence and this is followed by a brief overview of the nature and the definition of deterrence in section three. Section four of the paper presents the general features and major variables used within the economic deterrence model including, sanctions, probability of detection/audit rate, sanction enforcement, tax rate, income level and complexity. A recommendation for additional variables to be considered is also suggested. Section five of the paper, then outlines and evaluates the methods which have been employed in taxpayer compliance research with a view to determining which have been the most effective in measuring the deterrent element. Section six of the paper concludes by indicating that despite the problems in measurement and some limitations to this type of analysis, there are preferred compliance variables and research methodologies which arguably, measure more accurately the impact of deterrence upon taxpayer compliance.

¹ The general thrust of neutralization theory is that people who are able to eliminate feelings of guilt before engaging in acts of non-compliance are more likely to engage in such acts.

² M., Richardson and Sawyer, A.J., "A Taxonomy of the Tax Compliance Literature: Further Findings Problems and Prospects" *Australian Tax Forum*, (2001), Vol 16, 137-320, 153.

³ B, Tran-Nam, "Tax Compliance Research: An Economic Perspective," *New Zealand Journal of Taxation Law and Policy*, (2003), 455-468, 466.

2. The Rationale for Deterrence

“Every criminal law system in the world, except one has deterrence as its primary and essential postulate. It figures most predominately throughout our punishing and sentencing decisions legislative, judicial and administrative.”⁴ When confronted with a criminal problem legislator’s often agree that the best hope of control lies in “getting tough” with criminals by increasing penalties.⁵ The two basic extreme views of deterrence could best be expressed as either, purely increasing the severity of the penalty will increase the deterrent effect or because human behaviour is unpredictable and crime is determined by a variety of causes, deterrence is a myth. Despite the extreme views a belief in the efficiency of deterrent measures is attractive because it offers crime control measures where alternatives appear to be unavailable and does so without great apparent cost. To threaten with punishment is a very promising strategy for influencing behaviour.⁶ For instance, the Australian Tax Office (ATO) has been known to legislate⁷ a deterrent effect upon taxpayers without actually having the capacity to enforce the law to the full level. To what extent this has been successful remains to be seen. Nevertheless, given this background, the main reasons for deterrence can generally be explored from three viewpoints, including, ethical/moral, economic and political aspects.

2.1 Ethical/ Moral Aspect – Philosophy

It has been suggested that in order to make the threat of punishment believable the criminal law must follow through by punishing those offenders it apprehends.⁸ Punishing people in order to deter them (or others) from committing future offences raises some questions about the justice of pain inflicted for deterrent purposes which should be distinguished from the efficacy of deterrent strategies.⁹ The effectiveness of a deterrent measure must be weighted against the morality of doing it right. One of the problems this philosophy encounters is that the punishment has so little to do with the particular offender. That is, it is not determined by the degree of reprehensibility of his conduct, as retribution is and it cannot be justified as being designated to benefit the offender, as justification of rehabilitation measures.¹⁰ Indeed because it stems from other considerations, such deterrent punishments may generate conflict with rehabilitative and retributive precepts.

⁴ Morris, N., “Impediments to Penal Reform,” *University of Chicago Law Review*, 33, (1966) 631. The exception referred to is the Greenland Criminal Code of 1962.

⁵ Crime and Penalties in California (1968), a publication of the California Assembly Office of Research.

⁶ Zimring, F., E., and Hawkins G, J. Deterrence The Legal Threat in Crime Control, *The University of Chicago Press*, Chicago and London, 1973, 22.

⁷ Have a deterrent affect by passing new laws or issuing media releases.

⁸ Zimring, F, E, and Hawkins G, J, above n 6, 32.

⁹ Ibid, 32

¹⁰ Deterrence is peculiar it that ignores the personal quality of the offender. Temple, “The Ethics of Penal Action” (1934) See also G. B Shaw, “The Crime of Imprisonment,” (1946), 32-33. [Deterrence] necessarily leaves the interest of the victim wholly out of account. It injures and degrades him, destroys the reputation without which he cannot get employment, and when the punishment is imprisonment under our system, atrophies his powers of fending for himself in the world.”

2.1.1 The Distributive Limit to Deterrence

In fact punishment for deterrence seldom involves administering harsh penalties solely for deterrent motives to people who would otherwise go unpunished. Except for regulatory offences, deterrent motives condition the degree of punishment far more often than they represent the single justification for punishing crime. Punishment is set as a result of the proper balancing of legitimate punishment objectives and deterrence is certainly one of the legitimate objectives of punishment. However, is it fair that an offender's sentence should act as a general deterrent to others and assist in their moral education? Certainly the notion that the severity of punishment should fit the crime, and not grossly exceed it, is one natural limit on the imposition of sanctions for deterrent purposes (i.e. the retributive limit or the principle of just desserts). Other researchers have indicated that in our present state of comparative ignorance about the sources of control of human conduct there is no escape from the use of punishment (whether criminal or not) as a device for reducing the incidence of behaviour we consider anti-social.¹¹ The issue is that the possibility of alternatives to just imposing heavier penalties should be explored from an ethical point of view.

It should also be recognised that the harm suffered by offenders as a result of the extra measure of punishment administered for deterrent motives must be recognised as a substantial cost, to the community as a whole. The offender's interest must be given due consideration as does the community in general. Consequently, administrators have a moral duty to the punished offenders to conduct further research on the "deterrent affect" of their policies. A belief in deterrence is morally acceptable, only as long as it is necessary. When facilities exist for the evaluation of sanction policies, failure to test policies while continuing to penalise offenders, is morally unjust. In this sense further research needs to be done to gauge the effectiveness of deterrence measures.

The exemplary sentence is one designed to meet the needs of deterrence felt in particular cases or group of cases. Such sentences are usually imposed to deal with specific offences which have suddenly become more frequent or more serious. The ethical problems that emerge from such a sentence include, the issue of fair notice, that is, the offender being aware of the penalty for such an offence. Another problem is the issue of the punishment achieving the general goal of deterrence which is difficult to measure. Inequality can also be a problem where offenders are 'singled out' for more serious punishment than other offenders. One way to overcome this has been the imposition of exemplary sentences on high profile individuals by the courts. The utilitarian justification is that these cases where the exemplary sentences are apt, achieve the greatest amount of attention and presumably the greatest deterrent impact.¹²

¹¹ T., Packer, "The Limits of the Criminal Sanction" (1968), 249.

¹² Zimring, F., E., and Hawkins G, J., above n 6, 47.

2.2 The Economic Aspect

Estimating the cost of a crime prevention program is essential to the government authority which decides whether a particular program will create sufficient returns to justify the commitment of resources necessary to bring it into existence. The comparison of the costs of alternative programs in order to arrive at marginal costs which together with the marginal value of revised output is required to provide the basis of a decision under the basic model of economic analysis. It has been stated that the function of the concept of cost, is to enable “choices of alternatives according to some criterion of preference”¹³. The most expensive aspects of law enforcement from a revenue authorities’ perspective are tax officers and punishment facilities (i.e. prosecution and sentencing).

However, in the context of deterrence, it may be more important to explore the social benefit cost (i.e. values of humanity, justice and disvalues of pain and suffering) rather than just pure economic efficiency.

2.2.1 Determining Costs in Crime Prevention

A number of modest points can be made about cost considerations in deterrence. For instance, the study of costs in crime prevention is necessary for policy research as well as for accounting purposes. Researchers should seek to establish, firstly the types and amounts of the program costs which would include both monetary and non-monetary (the cost of offender rehabilitation). Secondly, the nature of the programs effect on crime needs to be investigated. For example testing for marginal deterrence¹⁴ and general deterrence amongst the general population should be employed. Thirdly, the extent of the programs affect, that is, how much is attributable to the new policy should be investigated. In particular, the quantity of the affect rather than the quality is paramount. Finally, alternative programs that can achieve better results at less cost or similar results at lesser costs should also be employed. For example an alternative approach that involves less offender suffering than the current one should be preferred as being cheaper.¹⁵

Deterrence should not be regarded as having a preferred position in crime control policy independent of empirical evidence as to effectiveness. Indeed rational resource allocation in crime control should be the aim. It may be difficult to design research that can determine with any confidence the extent to which the increase in sentences has influenced the compliance rate through marginal/general deterrence. Yet even when the extent of crime prevention cannot be precisely estimated, cost studies can assist in deciding how much impact on crime a particular program has, to justify its implementation.

¹³ Alchian, “Cost” in 3 International Encyclopedias of the Social Sciences, (1968), 411.

¹⁴ See section 3.1 of the paper

¹⁵ Zimring, F., E., and Hawkins G, J. above n 6, 60.

2.3 The Political Aspect

The political nature of the punishment policy and the system that administers it is also an important element in the rationale for deterrence. The prescription of harsh penalties may on occasion create pressures and conflicts in society because of the character of the punishment, the crime, the victim or because of some interrelationship between these factors. However, it has been suggested that the employment of harsh penalties leads to nullification of the law by virtue of the fact that at various levels or stages in the criminal justice process there is a deliberate refusal to fully implement the statutes to which severe punishments are attached¹⁶. Researchers have indicated that in these cases experience shows that excessively serve penalties may actually reduce the risk of conviction thereby leading to results contrary to their purpose.¹⁷

When penalties are not reasonably attuned to the gravity of the violation the public is less inclined to inform the government authority, the prosecuting authority is less inclined to prosecute and juries are less apt to convict.¹⁸ Previous situations have occurred where the judiciary has systematically exercised their discretion in mitigating the severity of the law.¹⁹ This suggests a number of general principles regarding the way in which increasing penalties for deterrent purposes may create pressures and conflicts. For instance, escalating the level of punishment might be acceptable and effective where there is no tendency on the part of jurors, judges, prosecutors and the revenue authority to identify with the offenders. Where there is a general moral condemnation of the behaviour being penalized, it is relatively easy to enforce harsh penalties.

On the other hand, where there is general sympathy for and identification with offenders it will be more difficult to achieve effective enforcement of penalties. In the case of tax evasion where the behaviour may not be strongly condemned but widely tolerated for instance, enforcement of stringent penal provisions will be most difficult and most necessary in order to educate the community and to reduce a high rate of evasion. However, many societies have a tradition of minimal authoritative regulation of social life and are reluctant to enforce harsh penalties as a means to achieve social control.²⁰ As a result of the selective enforcement and discrimination of offenders it is suggested that alternative means of enhancing deterrence, such as measures designed to increase the credibility of the threat of punishment could be employed.

However full enforcement is nevertheless, quite impractical²¹ and selective enforcement is inevitable. For instance, prosecutors' have a discretion on whether to prosecute or not, juries may decline to indict and acquit the guilty and sentences may be suspended. The widespread exercise of discretion which constitutes an intrinsic limitation on the

¹⁶ Andenaes, "The General Preventive Effects of Punishment", (1966), 114, *U. Pa. Law Review*, 970.

¹⁷ *Ibid*, 970.

¹⁸ Andenaes, above n 16, 970.

¹⁹ For example, an empirical study conducted by the LA County in the USA, of the California Penal Code, revealed that in a random sample of 493 defendants 95% had the sentences for their offences down graded.

²⁰ Zimring, F., E., and Hawkins G, J., above n 6, 67.

²¹ Goldstein and Goldstein, "Police Discretion Not to Invoke the Criminal Process: Low Visibility Decision in the Administration of Justice" (1960), 69 *Yale L. J.*, 586-87.

legislative process may be viewed as advantageous in that it provides in-built checks and balances against the abuse of official power. In this way the political aspect of deterrence may be both necessary and desirable. Given the general rationale for deterrence, it is important to explore more closely its meaning and nature which follows in section three.

3. The Definition and Nature of Deterrence.

3.1 Definition

It is of crucial importance to define the field of enquiry because the concept of deterrence is a complex and difficult one. Deterrence by punishment has been described as a method of retrospective interference; by holding out threats that whenever a wrong has been actually committed the wrongdoer shall incur punishment.²² However, the term deterrence is used more restrictively, applying only to cases where a threat causes individuals who would have committed the threatened behaviour to refrain from doing so.

One distinction which is of crucial importance relates to issues of marginal deterrence and absolute deterrence. When comparing the rates of behaviour that would result from a particular threat with the rates of behaviour that could be expected if the threat were removed, this would indicate the absolute deterrent affect. On the other hand, the comparison of the effectiveness of one type of threat (i.e. 10 years jail v 15 years jail) will give an indication of the marginal deterrent effect of the larger penalty in reducing the rate of the threatened behaviour below that experienced under the lesser penalty.²³

A further distinction which is commonly drawn upon in the literature²⁴ is that between general and specific or (individual) deterrence. The primary objective of specific deterrence is to improve the criminal sanction in such a way as to dissuade the offender from repeating their offence. General deterrence aims to discourage potential offenders by advertising the punishment of convicted offenders. However, many who draw this distinction make no further use of it and have drawn what is essentially the same distinction in terms of “intimidating” and “detering.”²⁵ Rather than a dichotomy we see the special effects of punishment as one variable condition in deterrence. An act of punishment may be seen as an attempt to enhance deterrent threats not only for potential criminals in society, but also for those who are actually punished by altering the way they will respond to the threats in the future. Similarly, all that is involved in the common practice of imposing progressively heavier sentences on recidivists which has also been called special deterrence is just a more rigorous application to a particular group, of the principle of general deterrence.²⁶

²² Kenny, C., S., *Outlines of Criminal Law* 13th Ed (1929) 30.

²³ Zimring, F., E., and Hawkins G, J., above n 6, 72.

²⁴ Bentham, “Principles of Penal Law” in 1 Works, (1843), 392.

²⁵ See Wechsler and Micheal, “Rationale for the Law of Homicide,” (1937) 37, *Columbia Law Review*, 731, 127 and N. Walker, “Crime and Punishment in Britain,” (1965), 131.

²⁶ N. Morris, above n 4, 632.

3.2 Nature of Deterrence

Some researchers have suggested that other psychological processes, by which the threat of punishment might result in deterrence, could be referred to as simple or direct deterrence²⁷. The theory of simple deterrence is that threats can reduce crime by causing a change of heart induced by the unpleasantness of the specific consequences threatened.²⁸ This compares a crime with a particular penalty at a specific moment. If the individual is to be kept law abiding the process of simple deterrence must confront him at every turn - making forbidden conduct a risk not worth taking. This is strictly an economic view of the punishment - weighing the benefits against the cost. An analogy which is used here is where one of a potential customer peering at a price list, where the value of the punishment must not be less than what is sufficient to outweigh that of the profit of the offence.²⁹

Other researchers have recognized the plausibility of the notion that some people sometimes refrain from crime specifically to avoid unpleasantness.³⁰ In other words, they have recognised the conceptual scheme of the classical theorists. This scheme indicates that, even though crime may be incompatible with some aspects of experience it is still compatible with others. However, simple deterrence may still be more complex than the classical theory suggests.

Beyond the notion of simple deterrence, are a number of less direct mechanisms through which the threat of punishment may induce compliance with the law. These more subtle processes may well be more important than simple deterrence in reinforcing patterns of law abiding behaviour. The search for these subtle affects involves a wide range of behaviours. Indeed it has also been suggested that the hypothesis regarding the operation of general deterrence should be broadened. It should include the affect of punishment and all the institutions of criminal justice-on the totality of conscious and unconscious motivations that govern the behaviour of men in society.³¹

Nevertheless, as a means of expressing social disapproval, punishment is a ritualistic device designed to influence persons by intimating symbolically, society's moral condemnation and penal provisions may be seen as symbolising cherished values.³² Punishment as providing an educative role, involves three aspects. Firstly the association of forbidden behaviour and bad consequences may lead individuals to view the behaviour itself as bad. Secondly, punishment by a legal system will communicate to the individual that the legal system views the threatened behaviour as wrong and that this information will also affect the moral attitudes of the individual. Thirdly, threat and punishment may aid moral education by serving as an attention focusing mechanism.

²⁷ Zimring, F., E., and Hawkins G, J., above n 6, 75.

²⁸ Ibid, 75.

²⁹ Bentham, "Principles of Penal Law" in 1 Works (1843) 392.

³⁰ See Andrenaes, above n 16, 176 and Morris, above n 26, 627.

³¹ Packer, above n 11, 42.

³² Andenaes, above n 16, 950.

Threat and punishment can also induce habits – with fear or moral influence as an intermediate link it is possible to perhaps, establish a condition of habitual lawfulness. Repeated observation of a rule which may initially be conscious and deliberate can induce a habitual disposition and ultimately automatic compliance. The principle importance of habit in relation to social control derives from the fixity of habit organisation and the consequent relative dependability of human conduct.

It is plausible to state that while the habit of obeying the law in particular situations develops over a period of time, the threat of punishment may initially produce a number of separate habits of compliance. But these in turn can result in a more generalised habit of obeying the law so that ultimately we reach a position where people automatically and without conscious follow a pattern of learned behaviour that excludes the criminal alternative without people even thinking about it.³³

Yet if commands of a legal system were not reinforced with the threat of punishment many individuals would see no basis for complying with the legal system. For most people the threat alone would be enough to ensure conformity. However, some people may not be sensitive to the abstract threat of penalty. For them the penalties must be demonstrated in concrete sentences which they feel relevant to their own life situations.³⁴ Also if penalty provisions are not enforced, it can have a demoralising effect on the law abiding citizens who watch law breakers escape unpunished.

The imposition of punishment is a demonstration to society that the legal system is serious in its attempt to prohibit criminal behaviour. The unpunished criminal is a direct challenge to the authority behind the law. From this point of view, the significance of the individual sentence and the execution of it lie in the support that these actions give to the law.³⁵ The greater the pressure coming from repressed impulses the more aware becomes the ego that it needs the institution of punishment as an intimidating example acting against one's own primitive world of repressed instinctual drives. The mere threat of punishment may not be enough, but rather a reassuring example of punishment actually being imposed may be required. Impunity may not only endanger disrespect for the legal authority but also undermine the authority of conscience.

If the threat of punishment plays a role in the development of morality and respect for the law, it is far from the only force at work in that phase of socialisation and since the threat of punishment and other socialisation processes are so closely interrelated, it is difficult to isolate the affects of threatened punishment. Consequently, given the general nature and meaning of deterrence, specifically how the deterrence theory model is utilised in measuring deterrence upon taxpayer compliance, now follows in section four of the paper.

³³ Packer, above n 11, 43.

³⁴ Andenaes, above n 16, 950

³⁵ Alexander and Staub, *The Criminal the Judge and the Public*, (1956) ed, 213.

4. Features of the Deterrence Theory Model

4.1 The “Economic Deterrence” Approach

Research on tax compliance based on the “economic deterrence” approach considers both economic and structural factors on compliance. This approach uses the utility function equation and experimental economics methods to help explain and predict compliance outcomes. The economic deterrence approach suggests that taxpayers make a cost/benefit analysis when deciding on compliance outcomes and relies on enforcement for it to work.³⁶ The deterrence model attempts to explain the change in compliance behaviour rather than the level of compliance.³⁷ The purpose of the economic deterrence approach is to identify causality in the change of taxpayer behaviour in response to changing certain variables under examination while keeping other variables constant. Without going into the detail workings of this approach a brief outline of the main features and advantages/disadvantages of the methods employed follows.

4.1.1 Utility Function Equation

This method uses an algebraic mathematical equation³⁸ which suggests that the rationale taxpayer will maximise the expected utility of the tax evasion gamble by weighing the expected utility of under-reporting against the uncertain prospect of detection and punishment. The results produced under this method are theoretical and are not supported by empirical data. The findings that use this equation and look at changes in variables, such as, income level, tax rates, audit probability and penalty rates, include the following requirements;

- A direct relationship between the audit rates and declared income (compliance will increase if there is a increase in audit probability)
- There is a positive relationship between the penalty rate and compliance
- Increases in income level and tax rates have ambiguous effects on compliance
- The utility function only considers the income level on compliance and ignores the expenses deduction
- The compliance level is determined by the level of enforcement and punishment

The model therefore relies on certain assumptions such as;

- audit probability is fixed and random and is exogenously determined by the taxing authority
- taxpayers will only face audit costs if audited

³⁶ Yong, S, “A Critical Evaluation of the Economic Deterrence Model on Tax Compliance”, *New Zealand Journal of Taxation Law and Policy*, Vol 12, No, June 2006, 95-116.

³⁷ Cuccia, A, D, “The Economics of Tax Compliance: What do we know and where do we go?” *Journal of Accounting Literature*, 81, Vol 13, (1994) 90-91.

³⁸ Yong, S., above n 36, 100-101.

- the taxpayer is fully knowledgeable of their true income levels.

Consequently, while this method is cheap, requiring no empirical testing and is free of human research issues (eg non-response and invalid response) the results remain theoretical in the absence of empirical data to support it. Also if the assumptions on which the method is based are incorrect, this could adversely affect the research outcomes. For example, these assumptions fail to capture the many institutional realities of audit rules and tax complexity.³⁹ The assumption that taxpayers only face audit costs, if audited, is inappropriate given that all activities involve not only monetary but also psychological costs, even for honest taxpayers.⁴⁰ Most importantly, the utility function fails to represent the actual taxpaying system in many facets, (for example audit policy, high compliance statistics) resulting in limited applicability in the real world. To address the theoretical problems of the utility function equation, the experimental economics method aims to produce another avenue for research into compliance behaviour of taxpayers by examining both economic and structural factors simultaneously.

4.1.2 Experimental Economics

This method involves using controlled laboratory experiments to test the causality of economic and structural factors on compliance, by controlling and manipulating certain variables while holding other factors constant. As mainly students are used as surrogates for actual taxpayers it is convenient, however, the empirical data gathered has limited external validity.

The obvious advantages of the experimental economics method are its high response rate due to the convenient sampling of students, the low cost involved due to conducting the test in a controlled environment and the consequential high internal validity of the data. This has given this approach the capability to effectively investigate the effects of the changes in the economic and structural factors upon tax compliance.

On the other hand, the disadvantages of the experimental economics approach, is that it still involves making certain analytical assumptions about the sample chosen in order for the results to be valid to other taxpayers. Also the results drawn from students would have limited application to the general taxpaying community and consequently certain findings do not concur with the reality found in the taxing community. Likewise, the possibility of simultaneous causal interaction of crime rates and sanction levels and perhaps more generally of crime rates, sanction levels and criminal justice system resources, raises serious obstacles to empirical analysis of deterrence. To extract the deterrent impact of sanctions requires that simultaneous equation estimation procedures be used. The use of such procedures requires a number of assumptions about the nature of

³⁹ C. M. Fischer, M. Wartick and M. M. Mark, "Detection Probability and Taxpayer Compliance: A Review of the Literature," (1992) Vol 11, *Journal of Accounting Literature*, 1, 44.

⁴⁰ B. Erard, "Taxation with Representation: An Analysis of the Role of Tax Practitioners in Tax Compliance," (1993) Vol 52:2 *Journal of Public Economics*, 163.

the simultaneous relationship which again can be problematic.⁴¹ Given the basis of the economic deterrence model, a closer examination and analysis of the specific variables employed within the model follows, with a view to determining their effectiveness in measuring deterrence.

4.2 The Major Variables used within the Economic Deterrence Model

4.2.1 Penalties and Sanctions

If the absolute deterrent effect of the threat of punishment is measured by the increase in crime resulting from the virtual elimination of any threat of punishment, there is little doubt that such effects are present and are frequently of substantial magnitude. Marginal deterrent effects are measured by the response of crime rates to incremental changes in penalty rates. If absolute deterrent effects are operating then over some range of incremental changes in penalty threats, marginal deterrent effects must also be present.⁴²

A large body of research has established a negative association between crime rates and a variety of sanction risk measures.⁴³ However, the question remains whether this negative association is a reflection of deterrence or is attributable to some other causes. An argument put forward by some researchers,⁴⁴ is that the association is a reflection of a negative effect of crime rates on sanction levels rather its reverse.

However, despite the fact that many studies have generally found that sanctions have a positive effect on tax compliance, only mixed evidence was found on how sanction severity impacts on compliance⁴⁵. The majority of studies which have examined sanctions as a compliance variable have either attempted to manipulate the penalty level in an experimental setting, or have used the actual penalty rates in the particular tax system being investigated. This has been the main failing of the research, as it the taxpayers' perceptions of the penalty level rather than the real penalties which influence compliance⁴⁶. In particular, there is a need for research into how taxpayers' perceptions of the sanction levels are formed.⁴⁷

The effect of different sanction types has also lead to mixed results with respect to tax compliance research.⁴⁸ Social sanctions, such as name and shame have produced

⁴¹ F. Fisher., *The Identification Problem in Econometrics*, New York, Mc Graw Hill, In c (1966).

⁴² D. Nagin, "Crime Rates, Sanctions Levels, and Constraints on Prison Population," 12, *Law and Society*, spring, 1978, 341-366, 341.

⁴³ See generally, M. Richardson and A. J. Sawyer, above n 2, 192-197 and Zimring, F., E., and Hawkins G, J., above n 6, 224-248.

⁴⁴ A. Blumstein, J. Cohen, & D. Nagin, "Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crimes", Washington D. C. *National Academy of Science* (1978).

⁴⁵ M. Richardson and A. J. Sawyer, above n 2, 193.

⁴⁶ *Ibid*, 193

⁴⁷ M. Richardson and A. J Sawyer (2001), some research has examined how sanction perceptions are related to other tax compliance variables, in particular age gender and education.

⁴⁸ For example, social sanctions verses legal sanctions, See D. J, Hasseldine, and S. E. Kaplan (1992), T. M. Porcano and C. E. Price, (1993), Q. C. Thurman (1988), G. R. Violette (1989)and H. G. Grasmick and R. J. Bursik (1990).

positive results as has the introduction and increase in penalties. This has been due to a number of reasons including, cultural differences, different subject pools and occupational status. On the other hand, moral pleas⁴⁹ and positive inducements⁵⁰ have also been found to have a significantly greater effect in improving taxpayer compliance than sanction communications alone. Consequently despite the penalties variable being an important feature in measuring deterrence, it apparently needs to be supplemented by other tax compliance variables and be measured in alternative ways. Therefore, perhaps the operationalisation of the variable⁵¹ holds the most potential relevance for the field of tax compliance research.

4.2.2 Sentencing - The Probability of Imposition of Penalties and Sanctions

Although strictly not a variable within the deterrence model, it is considered important to analyse the deterrent aspect of sentencing upon taxpayer compliance. Particularly given that the strength of any penalty or sanction ultimately relies upon its imposition, it is important to consider the judicial opinion of deterrence.

In the case of *Williscroft*,⁵² the majority cited with approval the passage from the New Zealand case of *Radich*⁵³ that stated

... one of the main purposes of punishment... is to protect the public from the commission of such crimes by making it clear to the offender and to other persons with similar impulses that, if they yield to them, they will meet with severe punishment. In all civilised countries, in all ages, that has been the main purpose of punishment and still continues so...

It has also remained an ‘article of faith’ for the courts that punishment deters offenders. As King C J of the South Australian Supreme Court noted:⁵⁴

I think that it must be conceded that there is no proven correlation between the level of punishment and the incidence of crime and that there is no clear evidence that increased levels of punishment have any effect upon the prevalence of crime. Nevertheless the criminal justice system has always proceeded upon the assumption that punishment deters and that the proper response to the increased prevalence of crime of a particular type is to increase the level of that punishment for that crime. I think that the courts have to make the assumption that the punishment that they impose operates as a deterrent.

⁴⁹ P. Hite, “Identifying and Mitigating Taxpayer Non-Compliance,” Australian Tax Forum, (1997) 13:155-180.

⁵⁰ J. Falkinger and H. Walther, (1991), A. Frieberg, (1990), J. Slemrod, (1992) and K. W. Smith, (1992) found in M. Richardson and A. J. Sawyer, (2001).

⁵¹ Taxpayer perceptions of the levels of the penalty could really only be measured in survey and experimental studies with regression studies being restricted to the use of actual penalties.

⁵² (1975)VR 292,298-9.

⁵³ (1954) NZLR 86, 87. See also *Rushby and Davey*.

⁵⁴ *Dube and Knowls* (1987) 46 SASR 118,120 see also *Yarldley v Betts* (1972) 22 SASR 108,112. (Sentences they impose have the effect of deterring some people from committing crime.)

However, in the case of *Combey v R*⁵⁵ Starke J expressed his personal reservations as to whether increasingly heavier sentences actually deterred offenders from re-offending. Likewise similar sentiments have been expressed by the Queensland Court of Criminal Appeal.⁵⁶ The judiciary have also questioned whether marginal increases in already severe sentences will act as deterrents.⁵⁷ The courts have expressed the view that the certainty of detection and speed of prosecution are most likely to be effective as deterrents, as the severity of punishment. On the other hand, legislatures who are unwilling or unable, to invest resources in the criminal justice system to ensure that crimes are rapidly detected and speedily dealt with, have relied on increasing the severity of sentences as their principal deterrent to crime.⁵⁸ Whether this approach will produce the desired deterrent affect has been questioned by the judiciary, yet it appears that the courts still need to play their part in the overall deterrent process.

For example, in the High Court decision in *Griffith's* case, Jacobs J observed:⁵⁹

“The deterrent to an increased volume of serious crime is not so much heavier sentences as the impression on the minds of those who are persisting in a course of crime that detection is likely and punishment is certain. The first of these factors is not within the control of the courts, the second is. Consistency and certainty of sentence must be the aim... Certainty of punishment is more important than increasingly heavy punishment.”

Also the Victorian Full Court observed in *Moffat*,⁶⁰ that

A custodial sentence sends a salutary signal to all persons, no matter how unblemished their records, that depredation of trust monies, as trustee, in significant sums warrants gaol. It is likely that many persons in the general community will be deterred from the commission of these offences if it is generally known that prison follows.

Deterrence has also received legislative recognition in s 5 (1)(b) of the *Sentencing Act 1991(Vic)* and it has been held that an appropriate sentence will depend on the fundamental notion of general deterrence⁶¹. However, deterring unknown future potential offenders from committing a similar offence is not a sufficient reason for imposing a disproportionately harsher sentence than the particular crime requires. This goes against the principle of proportionality. Nevertheless, the courts in recognising that their sentencing policies will not, of themselves, prevent serious crime believe sentences can

⁵⁵ Victorian Court of Criminal Appeal 5/2/82 (Unreported).

⁵⁶ *Ryan and Vosmaer, Ex parte The Attorney General (1989)* Qd R 188 per Carter J (I remain unconvinced at the present time that to impose higher sentences here will lead to a decrease in bank robbery generally) and per Dowsett J at 191 (‘There is no direct link between sentencing levels and deterrent effect’).

⁵⁷ *Ryan and Vosmae, Ex parte The Attorney General (1989)* Qd R 188 per Dowsett J doubting whether a sentence of 15 years would act as a greater deterrent than a sentence of 10 –12 years.

⁵⁸ Sebba L, ‘Mitigation of sentence in order to deter?’ (1980), 6 *Monash University LR*, 268.

⁵⁹ *Griffiths (1977)* CLR 293, 327 See also *Dixon (1975)* 22 *ACTR* 13,18-19.

⁶⁰ 15/12/92 see also *Martin (1994)* 74 A Crim R 252. On the other hand white collar crimes often require less personal, or specific deterrence, which indicates that a lesser sentence may be appropriate, *McDonald* 1994 48 *FCR* 555 per Burchett and Higgins JJ.

⁶¹ *El Karhani (1990)* 21 *NSWLR* 370, at 378

still have a dramatic deterrent effect if appropriately applied.⁶² Consequently, in terms of improving overall taxpayer compliance, this is a vital factor that should not be underestimated in the measurement and analysis of deterrence.

4.2.3 Probability of Detection/ Audit Rate

The definition of audit rate is the probability that the return is selected for audit, while the probability of detection is the chance that non-compliance is discovered during that audit. Based on this premise, some researchers have suggested that beliefs about the probability of apprehension and certainty of punishment are more important than the sanctions actually imposed⁶³ It is interesting to note, for example, that countries like Germany and England achieve similar levels of compliance but through different methods. Germany has been known to employ rigid assessment and enforcement policies at considerable social cost, whereas England's less rigid policies foster a willingness to cooperate with tax officials at the expense of rendering enforcement procedures redundant.⁶⁴ Consequently, while the compliance variable of the probability of detection is vital in achieving deterrence, it can be employed successfully through different modes.

In a study undertaken by Mason and Calvin⁶⁵ the independent variable with the strongest correlation with admitted tax evasion is belief in the probability of not being apprehended. The better educated in that study believed that their chances of getting caught were low. However, beliefs about the probability of apprehension may also be effected by personal experience, peer influence and mass media exposure. Although direct measures of these influences are difficult to gauge an indirect assessment could be made by examining audit and criminal investigations. In Mason and Calvin's study the low audit rate in combination with non-prosecution and the unwillingness of offenders to publish their deviance resulted in a low deterrent affect. The study also concluded that the deterrent effect of civil and criminal penalties remains uncertain while those who are audited and punished may be dissuaded from further evasion, but the general deterrent effect upon others may be small. Consequently, the authors implied that patterns of evasion could not be explained by any simple concept of deterrence.

However, fear of apprehension may effect compliance in other ways. Some researchers⁶⁶ argue that anxiety produced by uncertainty about the likelihood of detection plus the severity of punishment can be an effective deterrent. Likewise, the perceived seriousness of tax evasion may also act as a deterrent and affect compliance rates. The perception of

⁶² Knowles (1987) 45 SA SR 14 15-16; Pavlic (1995) 83 A Crim R 13, 16, Green C J ('There is no justification for the view that there exists a direct linear relationship between the incidence of a particular crime and the severity of the sentences which are imposed in respect of it such that the imposition of heavier sentences in respect of a criminal crime will automatically result in a decrease in the incidence of that crime').

⁶³ C. Title and C. Logan, "Sanctions and Deviance; Evidence and Remaining Questions," *Law and Society Review*, (spring), (1973), 371-389.

⁶⁴ R. Mason, and L. D. Calvin, "Study of Admitted Income Tax Evasion", 13, *Law and Society* / fall, (1978) 77.

⁶⁵ Ibid 77.

⁶⁶ C. Title and C. Logan, above n 63, 375.

tax evasion as a crime is critical here and interestingly this was found to be only moderately serious by a study conducted by Karlinsky.⁶⁷ In Karlinsky's study, on a scale of some 21 offences (including white collar crimes) tax evasion ranked eleven or around half way. Whether there is a link between the perception of tax evasion as a crime and the probability of being detected for that crime remains to be seen.

Nevertheless, detection probability is one of the most frequently examined variables in taxpayer compliance that the majority of evidence suggests taxpayers in general significantly overestimate.⁶⁸ Again it is the taxpayers perceived probability of detection rather than the actual probability which should be used in measuring the deterrent effect.⁶⁹ A number of demographic factors have been linked to taxpayers' perceptions of the probability of detection along with the opportunity to evade and other ethical and revenue authority concerns. Likewise detection probability has been found to be dependant upon the type of non-compliance (i.e. overstating deductions or underreporting income). There is also evidence that suggests that compliance levels differ depending on whether a random or strategic audit policy is employed by the revenue authority where compliance was found to be higher where returns were strategically selected for scrutiny.⁷⁰ Overall, an assessment of this variable indicates that it is a vital factor in the measurement of deterrence.

4.2.4 Tax Rate

Although a substantial level of research has been conducted on tax rates it is still unclear how this variable impacts upon taxpayer compliance. Mixed results of studies using three research methods (surveys, experiments and regression models) have been produced possibly due to taxpayer unawareness of rates and lack of taxpayer opportunity to influence rates. Another reason for the mixed research results could be due to evidence of strong correlation between rates and compliance and the danger of not controlling for it⁷¹.

However, it is also clear that the mixed results might be due to the failure to control for taxpayer perceptions. Only a few studies have examined the relationship between perceived tax rates and taxpayer compliance and these have also produced conflicting results.⁷² Also tax rates have been found to be dependant upon taxpayers' perceptions of horizontal equity. Where taxpayers were told that they were subject to the same tax rate as other taxpayers in the same position, an increase in the rate had no effect on

⁶⁷ S. Karlinsky, "Perception of White Collar Crime: Tax Evasion," Working Paper series, School of Business Law, Curtin University, (2005), 11.

⁶⁸ M. Richardson and A. J. Sawyer, above n 2, 197

⁶⁹ Ibid, 197.

⁷⁰ Collins and Plumlee (1991), Beck Davis and Jung (1992), and Alm, Cronshaw and Mc Kee (1993) found in M. Richardson and A. J. Sawyer, (2001), 202.

⁷¹ J. S., Feinstein, "An econometric analysis of income tax evasion and its detection," (1991) *RAND Journal of Economics*: 22 14-35.

⁷² Shultz, McGraw and Steenburgen (1992), and Wahland (1992) found in M. Richardson and A. J. Sawyer, (2001), 202.

compliance behaviour. Conversely taxpayers reacted differently when told the opposite.⁷³ Consequently, it appears that the behavioural aspects of taxpayers and particularly their attitude to risk needs to be explored further to more confidently gauge any deterrent effect of the tax rate upon taxpayer compliance.

4.2.5 Income Level

The research on the impact of income level upon tax compliance is also very mixed with a number of studies providing conflicting and inconclusive results. One possibility for the inconsistencies could be the correlation between income level and other compliance variables, particularly, the difficulty in separating the effect of income level from the effect of tax rates.⁷⁴ The correlations between the income level and other tax compliance variables may have also contributed to the mixed results, particularly income source.

Other studies have reported a positive correlation between income level and opportunity to evade, with opportunity being represented as either being in business or being able to claim deductions. The importance of the income level as a compliance variable may also be dependant upon gender as found in a study conducted by Hite.⁷⁵ Hite found that higher income levels increased the apparent acceptability of non-compliance for female subjects but had no effect on the behaviour of male participants. If these attitudes are translated into behaviour, this provides another possible explanation for the conflicting findings on the income level variable.

It was interesting to note that there is evidence for three opposing views with respect to the income level variable and tax compliance. That is firstly, that the wealthy are the least compliant, secondly that the poor were the least compliant and finally that both the poor and the wealthy are equally non-compliant while middle income earners are the most compliant.⁷⁶ In terms of deterrence these studies indicate that the poor and the wealthy are the income groups that may need to be targeted by the revenue authorities. Also as these groups tend to be the minority in the western economies, the research may be suggesting that deterrent measures are not as important to the wider majority of complying middle class taxpayers. Consequently, despite some mixed previous findings, it would appear that this variable be considered in conjunction with other tax compliance variables in measuring any deterrent impact, as there is the potential for some interesting results to emerge.

4.2.6 Complexity

Complexity of the tax laws can impact on compliance in a number of different ways including; encouraging non-compliance by providing a greater opportunity for it, by also increasing the uncertainty of the tax laws and thereby encouraging greater compliance

⁷³ Moser, Evans and Kim (1995) found in M. Richardson and A. J. Sawyer, (2001), 201.

⁷⁴ See study by Feinstien (1991) above n 71.

⁷⁵ P. Hite, above n 49.

⁷⁶ B. R. Jackson and V. C. Milliron, Tax Compliance Research: Findings, Problems and Prospects, *Journal of Accounting Literature*: (1986) 5 125-165.

amongst risk adverse taxpayers or alternatively complexity can frustrate taxpayers and thereby reduce their willingness to comply.⁷⁷

Major studies have been carried out by Long and Swingen⁷⁸ which indicated that tax complexity reduces not only a taxpayers ability to comply with the tax laws but also his or hers willingness to do so. Other studies⁷⁹ have also supported these findings but further research in investigating this variable is still needed. More recently, a study by Mc Kerchar⁸⁰ in Australia found that the main cause of complexity was found to be uncertainty in the tax laws and the level of detailed information that was provided to taxpayers as a result. Where taxpayers completed their own returns, complexity caused a high level of unintentional errors and these generally favoured the tax authority. Further in response to complexity, some committed taxpayers chose to be intentionally over compliant. McKerchar's study concluded that complexity compromised the fairness of the Australian tax system, by imposing an unfair burden on personal taxpayers, in terms of both compliance costs and taxes paid.

To rely on the assumption that most people are risk adverse and that therefore, increased complexity will act as a deterrent measure by encouraging greater compliance amongst taxpayers who want to "do the right thing" and seek professional help, is dangerous. As found by McKerchar's study, the perception of fairness will be compromised and people may even feel that to evade will be an easier option. Increasing complexity would certainly appear to have a more undesirable effect upon tax compliance and further research utilizing this variable needs to be undertaken. Suffice to say that an assessment of this variable indicates that it is also a vital factor in the overall measurement of deterrence.

Consequently, based on the major tax compliance variables discussed thus far, it is apparent that the economic model assumes that taxpayers' make compliance decisions in a social vacuum.⁸¹ However, economic factors only partly contribute to our understanding of why people comply with the tax requirements. Human and behavioural factors also need to be accounted for. Consequently the following section of the paper now elaborates on how and why this should be done.

⁷⁷ G. A. Carnes and A.D Cuccia, "An Analysis of the effect of Tax Complexity and its perceived justification on equity judgements", *Journal of the American Taxation Association*, (1996), 18 Fall, 40-56.

⁷⁸ S. B.Long and J. A. Swingen, (1988) The Role of Legal Complexity in Shaping Taxpayer Compliance, in Van Coppen, PJD. Hessing and G Van Den Heuvel (eds) *Lawyers on Psychology and psychologists on law*. Amsterdam the Netherlands: Swets and Zeitlinger: 127-146.

⁷⁹ See Milliron and Toy (1988) and Collins, Milliron and Toy (1992) found in M. Richardson and A. J. Sawyer, (2001), 187.

⁸⁰ McKerchar, M, "The Effects of Complexity on Unintentional Non-Compliance for Personal Taxpayers in Australia," *Australian Tax Forum* (2002).

⁸¹ J. G. Cullins and A .Lewis, Why People pay Taxes: From a Conventional Economic Model to a Model of Social Convention," (1997) Vol 18: 2-3 *Journal of Economic Psychology*, 305, 310-312.

4.3 Justification for Additional Compliance Variables to be considered in Measuring Deterrence

Given the most common variables of the economic deterrence model discussed previously, it is suggested that this model could be further improved by the incorporation of additional compliance variables also employed in the social/psychology model.⁸² For example, a study by Schwartz and Orleans⁸³ showed that both sanction threats and conscience appeals could induce greater conformity, but conscience appeal was found to be more effective. While their study suggested that reminding individuals of the possibility of negative sanctions does help to secure conformity, the results confirmed that sanctions may be successful deterrents for only potential offenders. Once norms are violated the sanction threat loses its potency for inhibiting further violations.

Consequently, in order to enhance the measurement of the deterrent element, further analysis of taxpayers' characteristics and their environment is highly recommended. One way to achieve this is to cater for the influence of demographic, social, political and cultural variables within the deterrence model. The way in which the deterrence of deviance varies by the characteristics of potential rule breakers has to be specified. Such things as social class, age, sex, race, social visibility, personal alienation from the political and social system and moral commitments to the norms, will also be major determinants in assessing whether a deterrent effect is probable in a given situation.⁸⁴ In particular, it is suggested that the following major demographic and other variables play a vital role in assisting in the measurement of deterrence upon the level of tax compliance.

4.3.1 Gender

A common finding amongst studies reviewed by Richardson and Sawyer and previously Jackson and Milliron⁸⁵ was that female taxpayers were more compliant than their male counterparts. In particular, a comprehensive study conducted by Oxley⁸⁶ in New Zealand reported that women were more often compliers in comparison with men and less often tax evaders or tax avoiders. However, Richardson and Sawyer noted that this compliance gap between males and females appears to be narrowing with the emergence of a more independent, non-traditional generation of women.⁸⁷ In a survey of American taxpayers Hite⁸⁸ focused on the interaction between gender and education. Female respondents with college degrees tended to be more tolerant of non-compliance than females without

⁸² Common variables utilised in the social/psychology model include those that deal with taxpayer behaviour/attitudes, demographics.-relating to internal and external social norms. (i.e. morals, fairness, efficiency of public spending)

⁸³ R. Schwartz and S. Orleans, "On Legal Sanctions" *University of Chicago Law Review*: (1967) 34, 274-300.

⁸⁴ Zimring, F., E., and Hawkins G, J., above n 6, 75.

⁸⁵ Richardson, M. and Sawyer, A. J., above n 2 and Jackson, B. R., and Milliron, V. C., above n 76.

⁸⁶ Oxley, P., "Women and Paying Tax," (1993) in C., Scott, (Ed) *Women and Taxation*, Wellington Institute of Policy Studies, 31.

⁸⁷ For example, Robben et al [1989] found no significant relationship between gender and compliance, but their experiment involved only 22 females and twice as many males.

⁸⁸ Hite, P. A., above n 49, 155.

college degrees. On the contrary, males tended to be less tolerant of non-compliance as their education levels increased. There are also studies that have looked at the effect of gender on sanction threat perceptions and found that taxpayers with higher perceived sanction threats are more compliant.⁸⁹

4.3.2 Age

The majority of studies reviewed by Richardson and Sawyer⁹⁰ that examined the age variable found that older taxpayers tended to be more compliant than younger taxpayers.⁹¹ However there have been a significant number of studies that have found no relationship.⁹² Richardson and Sawyer have proposed four possible explanations for the inconsistent findings. Firstly, the significance of the age variable does not extend to all taxpayers. Second, inconsistent definitions of taxpayer non-compliance are employed throughout the research. Third, when age is considered in association with a number of other variables its affect on taxpayers' compliance is diluted. Finally, the interaction of age with other compliance variables could be problematic. For instance, Grasmick and Bursick's⁹³ study revealed that older taxpayers have a higher perceived threat of legal sanctions which in turn increases compliance. Similarly, Smith⁹⁴ found that taxpayer ethics improve with age and thereby increase compliance levels. The greater tendency to be more compliant when one gets older could also be due to the lowering of risk taking attitudes.

4.3.3 Nationality

Unfortunately, there has only been minimal research undertaken to date with respect to tax compliance and nationality. A literature review by Roth et al⁹⁵ which used whites and non-whites as a proxy variable found whites to be more compliant. However, Beron et al⁹⁶ suggests the results are dependant upon other variables used in the study. In particular the income variable was found to have a distortive effect. Nevertheless studies of commitment to compliance using indices have found the largest differences between

⁸⁹ H. G Grasmick and R. J Bursick, "Conscience Significant others and Rational Choice: Extending the Deterrence Model" *Law and Society Review*: 24 (1990), 837-861.

⁹⁰ For example, Beron, K. J., Tuachen H., V., and Witte, A. D., [1992] found the age was positively related to compliance for low and middle income proprietors, whereas Dubin and Wilde [1986] found a similar effect only for low and high income non-business taxpayers, found in M. Richardson and A. J. Sawyer, (2001), 156.

⁹¹ See for example, Smith, K., W., "Reciprocity and Fairness: Positive Incentives for Tax Compliance," in Slemrod, J., (ed), *Why People Pay Taxes: Tax Compliance and Enforcement*, (1992) Ann Arbour, MI, *University of Michigan Press*, 223-250.

⁹² See for example, Porcano, T. M., "Correlates of Tax Evasion," (1988), *Journal of Economic Psychology*, 47.

⁹³ H. G Grasmick and R. J Bursick, (1990) above n 89.

⁹⁴ K. W. Smith (1992), above n 91, 223-250.

⁹⁵ Roth, J. A., and Scholz, J. T., and Witte, A. D.,(eds) "Taxpayer Compliance: an Agenda for Research," Vol 1 Philadelphia, P A *University of Pennsylvania Press* (1989) 21.

⁹⁶ Beron, K. J., Tauchen, H., V. and Wittie, A., D., "The Effect of Audits and Socioeconomic Variables on Tax Compliance," in Slemrod, J. (Ed), *Why People Pay Taxes: Tax Compliance and Enforcement*, (1992) Ann Arbour, MI, *University of Michigan Press*, 67.

rac⁹⁷. This could be an interesting finding in terms of the impact of any overall deterrent effect. How individuals from certain cultures view the payment of taxes is sure to produce differing results which in turn should give some indication of the deterrent impact ones nationality can have on taxpayer compliance attitudes.

4.3.4 Education/Qualifications

The affect of education on taxpayer compliance is also unclear, based on previous studies.⁹⁸ The reasons given for these conflicting findings are varied. First, there can be difficulty in determining which aspect of education is being measured. Comprehensive literature reviews⁹⁹ have identified four measures of education; the general degree of fiscal knowledge, knowledge involving evasion opportunities, general educational attainment and specific tax knowledge. These different dimensions may assist in explaining the confusion surrounding the effect that the education variable has on taxpayer compliance. Correlations between education and other compliance variables may also have contributed to the inconsistent results found. Other possible compliance variables that have been suggested to have a relationship with education are gender,¹⁰⁰ income level,¹⁰¹ ethics,¹⁰² taxpayers' perceptions of fairness,¹⁰³ detection¹⁰⁴ and sanctions.¹⁰⁵

A few studies have also examined the link between higher levels of education and taxpayers' detection and sanction perceptions. For example, Smith¹⁰⁶ found that the perceptions of the probability of detection are lower for those taxpayers with a higher level of education, while Grasmick and Bursick¹⁰⁷ found a similar relationship between education and perceived threat of sanctions. More importantly it was found that there also

⁹⁷ See for example Song, Y., and Yarborough, T., "Tax Ethics and Taxpayer Attitudes: A Survey," (1978), *Public Administration Review*, 442.

⁹⁸ See for example, I. Wallschutzky [1993] who indicated that education is the variable most likely to improve compliance, whereas Beron, Tauchen and Witte [1992] indicated that inconsistent results are produced as education is highly correlated with income level.

⁹⁹ See for example, Jackson, B. R., & Milliron, V. C., "Tax Compliance Research: Findings, Problems, and Prospects," *Journal of Accounting Literature*, Vol 5, 1986, pp125-165 and Richardson, M. and Sawyer, A. J., "A Taxonomy of the Tax Compliance Literature: Further Findings Problems and Prospects," (2001), Vol 16, *Australian Tax Forum*, 137-320, at 149 and Lewis, A., *The Psychology of Taxation*, (1982), Martin Robertson, Oxford, 127.

¹⁰⁰ Hite, P. A., above n 49, 155.

¹⁰¹ Beron, K. J, Tauchen, H. V., and Wittie A. D., above n 96, 67.

¹⁰² Mc Graw, L. K., and Scholz, J., T., "Norms, Social Commitment and Citizens Adaption to New Laws," in Van Koppel, P. J., Hessing, D. and Van den Heuvel, G. (eds), *Lawyers on Psychology and Psychologists on Law*, Amsterdam the Netherlands, Sweets and Zeitlinger, (1988), 105.

¹⁰³ Roberts, M. L., "An Experimental Approach to Changing Taxpayers Attitudes,' Towards Fairness and Compliance via Television," (1994), *Journal of the American Taxation Association*, Vol 16, 67.

¹⁰⁴ Smith, K.W., above n 91, 223.

¹⁰⁵ Grasmick, H. G., Bursick, R. J., above n 89, 837.

¹⁰⁶ K. W. Smith (1992), above n 91, 223.

¹⁰⁷ Grasmick and Bursick (1990), above n 89.

appeared to be a need for the incorporation of the education variable in future studies, if a more accurate measurement of deterrence was sought.¹⁰⁸

4.3.5 Occupation

There is a lack of clear research direction with respect to occupation and employment status as variables contributing to taxpayer's compliance behaviour.¹⁰⁹ The reasons for this lack of clarity could be that many studies employ different occupational categories in their research. These occupational categories have ranged from specific occupational strata¹¹⁰ to broad categories¹¹¹. Another reason for the lack of direction could be the suggestion that the opportunities for non-compliance are associated with the particular occupation rather than the occupation itself.¹¹² In its current status, this variable tells us little, if any, of a deterrent effect upon taxpayer compliance nevertheless future research should be employed using occupation as an independent variable.

4.3.6 Ethics

The majority of studies reviewed on the relationship between ethics and taxpayer compliance generally found that higher levels of individual ethics are associated with greater taxpayer compliance. However Jackson and Milliron¹¹³ noted that the significance of the relationship between ethics and compliance tended to vary depending on the particular definition of ethics adopted. The results of two major American studies¹¹⁴ suggested that taxpayer ethics play a crucial role in the compliance decision by controlling the extent to which a taxpayer is sensitive to situational influences. Further research into the mediating role of ethics in the compliance decision is required beyond the four situational variables currently identified¹¹⁵. This could also therefore have implications for deterrence via the situational variable of sanction levels.

¹⁰⁸ See for example, Jackson, B. R. & Milliron, V. C., "Tax Compliance Research: Findings, Problems, and Prospects," *Journal of Accounting Literature*, Vol 5, 1986, 161-165

¹⁰⁹ See for example, Parcano [1988] and Beron, Tuachen and Witte [1992] above n 96.

¹¹⁰ See for example, Mason, R. and Calvin, L., "A Study of Admitted Income Tax Evasion," (1978) *Law Society and Review*, Vol 12, 73. The author's occupational categories were, professional/technical, managers and officials (not-self employed) managers and officials (self employed), clerical and sales, craftsman, operators and unskilled.

¹¹¹ Hasseldine, D. J., Kaplan, S.E., and Fuller, L. R., "Characteristics of New Zealand Tax Evaders: A Note" (1994), Vol 34, *Accounting and Finance*, 79. Hasseldine's survey only included two categories-self-employed/sales/professional and clerical/administration/manual.

¹¹² Robben, H. S .J., Hessing, .D. J, and Elffers, H., "Legal Controls and Type of Employment in Tax Evasion Behaviour," in Lea, s. E.G., Webley, P. and Young, B. M, (eds), *Applied Economic Psychology in the 1990's*, Vol 1, Exeter, UK, Washington Singer Press, (1990), 512.

¹¹³ See for example, Jackson, B. R. & Milliron, V. C., "Tax Compliance Research: Findings, Problems, and Prospects," *Journal of Accounting Literature*, Vol 5, 1986, pp125-165 and Richardson, M. and Sawyer, A. J., "A Taxonomy of the Tax Compliance Literature: Further Findings Problems and Prospects," (2001), Vol 16, *Australian Tax Forum*, 137-320,

¹¹⁴ Smith 1990 and Reckers, Suanders and Roark (1994) indicated the 4 situational variables to be, opportunity, the probability of detection, tax rate and withholding status at year end.

¹¹⁵ The 4 situation variables linked to taxpayer ethics in studies by Smith (1990), and Reckers, Saunders and Roark (1994).

4.3.7 Other Factors

Finally, a study by Torgler and Murphy¹¹⁶ expanded further upon the analysis of taxpayer traits by investigating the typology of taxpayers to include the social intrinsic, honest and tax evaders. Social taxpayers are influenced by social norms such as guilt and shame and their compliance behaviour is conditional upon the actions of other taxpayers. The intrinsic taxpayers are sensitive to institutional factors that encourage them to comply. This group of taxpayers, 'is the ones to be most likely influenced by deterrence mechanisms. The other category of honest taxpayers are generally good responsible citizens that always do their best to comply with the tax laws regardless of the tax authorities deterrence measures. Finally, at the opposite end there are exceptionally dishonest taxpayers (tax evaders) bad, irresponsible citizens, who have low tax morals, are reliant on economic choices, and are insensitive to deterrence measures.¹¹⁷ The social/psychology model of tax compliance indicates that it is vitally important to take into account the personality characteristics of taxpayers. Based on Torgler's and Murphy's work, it would appear necessary to concentrate on the middle majority of (intrinsic) taxpayers in between the two extremes of taxpayers who would be influenced most by deterrence measures.

5. An Evaluation of the Methods employed in Taxpayer Compliance Research that Assist in Measuring Deterrence

A number of different research methods have been used in measuring the deterrent impact upon taxpayer compliance. The most common of these have been the quantitative techniques including; survey (self reports), experimental, analytical studies and regression modelling. It is suggested, however, that the deterrence impact upon taxpayer compliance could be best evaluated by using a combination of research methods. The paper therefore proposes that a combination of both qualitative and quantitative research techniques should be employed in measuring deterrence mechanisms in taxpayer compliance. Consequently, a brief discussion of the nature and both advantages and disadvantages of the most common quantitative and qualitative research methods is outlined and evaluated below. The criteria used in evaluation will be to indicate whether generally some deterrent impact can more easily and efficiently be identified within the method and also whether the methodology has been able to show evidence of a deterrent impact upon taxpayers.

5.1 Quantitative Techniques

5.1.1 Surveys and Self Reports

It has been suggested that as the effectiveness of deterrence depends on the public's response to multiple threats and examples of punishment provided by the criminal law, survey research techniques, should be employed in order to determine the real nature and

¹¹⁶ B. Torgler and K Murphy, "Tax Morale in Australia: What shapes it and has it changed over Time?" *Journal of Australian Taxation*, 7 (2), (2004), 298-335.

¹¹⁷ B T Tran- Nam, above n 3, 458.

extent of that response.¹¹⁸ Consequently it is suggested that “the survey technique has a great untapped potential as a method of providing additional information about the relative effectiveness of different programs in crime control.”¹¹⁹

Some researchers believe that the direct method of investigating public response to punishment policy by questioning individuals appears attractive and that this methodology can make a contribution to the understanding of deterrent processes as long as it is conducted with care and its limitations are appreciated.¹²⁰ Finding out what people say and think about crime and punishment and in particular what tax evaders and offenders think is difficult, but this is a case where some information is better than no information at all.¹²¹

However, it is important to be aware of certain problems that can arise from drawing straight out conclusions based on survey research. For instance, even if it is found that public knowledge of the specific levels of a criminal penalty is limited this does not necessarily mean that the sanction for the crime is not achieving a deterrent affect amongst the population. As long as the public feels that unpleasant consequences are attached to apprehension for forbidden behaviour, a deterrent effect is possible. Likewise, public ignorance of the level of penalties may produce a pattern of responses which results in both overestimates and underestimates of what is actually the case. It has been found in previous studies¹²² that the public's perceived knowledge of the level of penalty is higher than what it actually is. This has led some researchers to suggest that an uncertain sanction, or the behavioural equivalent of an unknown one, may be a better deterrent than a specially defined punishment¹²³.

The lack of knowledge regarding penalty levels does not necessarily mean that sub-groups in the community like tax evaders would not have considerable knowledge of their behaviour. Those in the community with the lack of skill, opportunity, and ability to evade would not tend to get involved in the criminal activity, but it is the measure of such threats on the subgroup that is critical.

Other than the general notion of communicating changes in penalties effecting community perceptions, there is the theory that, as information about punishment policy

¹¹⁸ T. Wootton, *Crime and Criminal Law*, (1963) 98.

¹¹⁹ See generally, the U.S. President's Commission on Law Enforcement and Administration of Justice Report, *The Challenge of Crime in a Free Society* (1967), 22-23.

¹²⁰ Zimring, F., E., and Hawkins G, J., above n 6, 296.

¹²¹ Walker, *Sentencing in Rationale Society*, (1969) 63.

¹²² Zimring, F., E., and Hawkins G, J., above n 6, 298.

¹²³ For example (a) Morris, *The Habitual Criminal* (1951) 12: “Frequently it is the unpredictable quality of punishment that conditions its deterrent force.” (b) Wilkins, “Criminology: An Operational Approach” I A. T Welford (ed) *Society Problems and Methods of Study* (1962) 325. “It might perhaps be argued that a measure of uncertainty is necessary to maximise the effect of deterrence to crime. In terms of the theory of strategy, this means that an element of randomness may be necessary to achieve the maximum social controls of deterrence.

(c) Campbell *Defence Of the Middle East, Problems of American Policy* (1958) 17, cited in Halperin, *Deterrence and Local War* (1963) 21. “The maximum deterrent effect then should come from creating in the minds of the Soviet Leadership a mixture of uncertainty and certainty”.

trickles down to significant sub-groups it is more likely to have an influence on behavioural decisions. However, there may also be a time delay between the individuals' perception of a crime changing and the individual actually being aware of the legislative change. As stated previously, lack of knowledge does not necessarily result in failure to deter. In most income tax evasion cases the offender group will usually only be limited to a portion of the population. It will usually be confined to a demographically definable group. Consequently it follows that even if only ten percent of the whole population knows the penalty for a particular offence this ten percent may belong to the potential criminal population in regards to the offence, a fact that may be significant in relation to deterrence.¹²⁴

In general it is suggested that survey research regarding public knowledge is most usefully directed at samples of distinct sub-populations whose responses to punishment policy can be assumed to be different from those of the general population and whose involvement in particular types of criminal activity is extensive enough to make distinct subgroup response of some significance to criminal regulation.¹²⁵ Consequently a study that compares and contrasts the views and responses of both, evader and non-evaders, should produce findings which are worthwhile in terms of the effectiveness of future penalties and sanctions for tax offences. It is also vitally important to obtain an estimate of the level of knowledge concerning penalties from the evader group itself. Such research can indicate which penalties are now most widely recognised so that it can be established where a broad deterrent effect will work and how information about penalties can be more efficiently disseminated. Likewise variables other than penalties such as, the probability of apprehension and new enforcement methods may also be tested through survey research (Refer Appendix 1). Care in the administration and interpretation of the results is nevertheless required.

Surveys of tax evaders as a subgroup in particular are valuable as they are a high risk tax fraud group their future behaviour constitutes such a substantial proportion of what can be defined as a "crime problem" and also because they may give us some indication of what the experience of punishment adds to the information an individual has about penalty levels in society. Deterrents do not deter unless they are at least perceived as such by prospective offenders. On the other hand as they represent the criminal population that has not been deterred, they may provide an unreliable sign of the deterrent potential of marginal increments in penalty.¹²⁶

Other potential problems include the likelihood of under and over-reporting in surveys particularly when extremely sensitive topics such as tax evasion behaviour are canvassed it is ambitious to expect all participants to be completely honest. For example, in a study conducted by Wallerstein and Wyle¹²⁷ many personal comments made by participants were attempts at self justification by individuals who clearly felt the need to offer some excuse for their behaviour. It is not insignificant that these excuses were offered in

¹²⁴ Zimring, F., E., and Hawkins G, J., above n 6, 301.

¹²⁵ Ibid, 310.

¹²⁶ Zimring, F., E., and Hawkins G, J. above n 6, 301.

¹²⁷ Wallerstein and Wyle, "Our Law abiding Law Breakers", (1947) 25 Probation 197-218.

questionnaires which were returned anonymously to ensure frankness.¹²⁸ Generally, trivial offences are more likely to be over-reported while more serious ones underreported.

Overall despite problems of unreliability because questionnaires are inevitably selective and thus may condition the nature of the responses, or there may be a lack of candor on the part of the respondents, due to the influence of competing emotional and psychological factors, surveys have generally been found to be most valuable. Indeed, carefully constructed questionnaires designed to present situations in their full complexity coupled with conservative principles of interpretation rigorously applied could render such surveys useful for sentiment sounding. As peoples' opinions however, are on a large scale very different to their actions for a variety of reasons, it is probable that the survey may not be a precise instrument for prediction. Nevertheless, it is possible that attitude surveys supplemented by intensive and aggressive interviewing closer to the pattern of psychotherapy might enable us to reconstruct patterns of relationship between sentiment and action set to produce data upon which changes in sanction or enforcement policies could be based with reference to other evidence.¹²⁹

Finally surveys which ask individuals who have committed offences themselves does provide the possibility of revealing whether and to what extent provisions of punishment policy have influenced their behaviour. In particular bi-focal questions enquiring about evaders conduct and their opinion about factors affecting their conduct are vital. Researchers also agree that it is useful to use self report data to determine responses to particular control measures by those who have been personally subjected to them in the assessment of the effects of punishment on those actually punished. Differences in reported behaviour could accordingly then be attributed to an evader and non-evader groups¹³⁰.

5.1.2 Experiments

Unlike the survey instrument, the field experiment is designed to bring to natural situations some of the precision of the laboratory.¹³¹ Generally using students as surrogates for real taxpayers in most situations, an assimilation or experiment of a real taxpaying situation or activity is replicated. Unfortunately in all but few instances it will not be possible to randomly assign individuals into test and control groups and to vary as between the groups the conditions of threat and punishment that accompany the detection and conviction of an individual for law violation.

There are on the other hand a number of deterrent variables other than penalties which could be varied, so as to carry out random assignments of different variables to different groups. An example of a variable susceptible to such manipulation was found in a field

¹²⁸ Ibid, 197-218.

¹²⁹ Zimring, F., E., and Hawkins G, J. above n 6, 327.

¹³⁰ Ibid, 327.

¹³¹ R. Schwartz and S. Orleans, above n 83, 285.

experiment conducted by Schwartz and Orleans.¹³² In the experiment, real taxpayers were divided into four different groups receiving four different messages. One message was a threat appeal, one was an appeal to conscientious motives, one a neutral message and another no message. Of these options, the appeal to conscientious had the greatest impact on compliance.

The Schwartz and Orleans study illustrates an aspect of deterrence suitable for field experiment. That is, if the manner in which the threat is communicated is varied rather than the terms of the threat there are no major ethical objections to carrying out the field experiment and the co-operation of revenue authorities may be more likely. On the other hand, variables such as law enforcement strategies affecting the probability of apprehension are more difficult when subjected to field experimentation (Refer Appendix 1). The main reasons for this are that it is difficult to alter the probability that an individual offender will be apprehended without general changes in apprehension rates. Variations in enforcement techniques and manipulation of enforcement strategies also make it problematic.

Of the positive aspects of experimental research, is the use of loaded terminologies which may not be evident in surveys for instance.¹³³ The fact that loaded terminology is used which ensures that the subjects are not left to draw on their own background knowledge during the experiment improves the validity of results. Another advantage has been that experiments improved the realism particularly with respect to audit probabilities and penalty levels. This is particularly important in terms of measuring deterrence and having an accurate indicator of the impact upon taxpayers. The realism of experiments has also been enhanced by using business simulations to hide the tax focus and thereby minimizing any change in real-world behaviour. Evidence of the success of this approach was found in a study by Elffers, Robben and Hessing,¹³⁴ where subjects found simulations realistic and were not alerted to the tax evasion focus. Again this would be effective in measuring deterrence. Finally the use of randomized field experiments conducted in a real world setting as opposed to laboratory and the comparison of the effectiveness of the different procedures also increases the validity and confidence of the results under this method.

On the other hand, the first problem in experimental research has been the issue of small sample sizes. The degree of confidence only grows with larger samples and thus findings cannot be totally relied upon. Secondly, the random assignment of subjects to experimental conditions, without checking for equivalent groups has the potential to render any results obtained meaningless, especially where the variability in the subject pool is significant. For example, experimental results may be distorted if two experimental conditions contain uneven percentages of subjects who find it morally

¹³² Ibid, 274-300.

¹³³ ‘Loaded Terminology’ refers to the use of emotive terms such as taxes audits and penalties. This can be contrasted with neutral terminology which uses terms such as payments, checks and shortfall instead.

¹³⁴ H. Elffers, H s J.Robben and D. J Hessing, “On Measuring Tax Evasion,” *Journal of Economic Psychology*, (1992) 13, 545-567.

wrong to evade taxes.¹³⁵ A third problem in experimental research are the payment of subjects for participation and the linking of payment to performance. The results of Baldry¹³⁶ indicate that payment based on performance is necessary to induce rational behaviour in subjects and this has been supported by the more recent work of Callihan and Spindle,¹³⁷ who compared both contingent and non-contingent rewards.

Another problem with this methodology has been the number of rounds the experiment has been conducted. As compliance behaviour may change as a result of familiarity with the experimental procedure, it has been suggested that at least 15 repetitions be aimed for as a minimum number.¹³⁸ Finally, the representation of participants itself has been a problem and this has mainly been due to the use of students rather than real taxpayers because of cost and convenience. Nevertheless it is suggested that further development and refinement of experiments could have major implications for measuring deterrence when used in combination with other methods.

5.1.3 Analytical Studies

Analytical studies involve the use of analytical or economic models to measure taxpayer compliance. These models are usually highly dependant upon a number of assumptions for them to work. In particular, a number of models retain a number of unrealistic assumptions such as utility maximizing taxpayers and risk neutrality. The pure economic deterrence model is an example of an analytical study.

To improve the validity of this method the analytical models have incorporated additional features such as, allowing for strategic audit selection by the revenue authority,¹³⁹ the uncertainty regarding a taxpayers' income level and the different levels of taxpayer risk aversion. Furthermore non-economic variables have been included in a number of models, such as fairness, psychic costs of evasion and the provision of public goods. All of these improvements have increased the level of realism in methodology and the validity of results (Refer Appendix 1)¹⁴⁰. Consequently, improved models of this nature could give a more accurate measure of any deterrent effect. Also the testing of these models using other data sources also assists in improving the realism. In particular, the use of actual revenue authority data can be the most beneficial.

¹³⁵ M, Richardson and Sawyer, A, above n 2, 231.

¹³⁶ J. C. Baldry, Tax Evasion is not a Gamble: A Report on Two Experiments, *Economic Letters* 22 (1986): 333-335.

¹³⁷ D. S. Callihan, and R M, Spindle, An Examination of Contingent and Non-Contingent Rewards in a Tax Compliance Experiment in Porcano, T. M, (eds) *Advances in Taxation* 9:Greenwich, CT:JAI Press (1997)1-23.

¹³⁸ C. M Fischer, M Wartick and MM, Mark, "Detection Probability and Taxpayer Compliance: A review of the Literature," (1992) *Journal of Accounting Literature*, 11 1-46.

¹³⁹ M J Graetz, J F Reinganum and L L Wilde, "The Tax Compliance Game: Toward an interactive Theory of Law Enforcement" (1986), *Journal of Law Economics and Organisation*," 2:1-32.

¹⁴⁰ See Cowell and Gordon, (1988), Falkinger (1995), Cullis and Lewis (1997), in M, Richardson and Sawyer, A.J., above n 2, 236.

On the negative side, one of the overriding problems with economic models is finding the correct balance between simplicity and complexity. It has been suggested that a good economic model is one that is complex enough to be relevant yet simple enough to be understood. Unfortunately many models have been so complex that they have been incomprehensible¹⁴¹ and others of little use because of oversimplification.¹⁴² However a model developed by Spicer¹⁴³ proved that the correct balance could be found which consequently resulted in more meaningful results. Therefore it would be highly desirable although rare to have a model that incorporates a good balance of both complexity and simplicity to assist in measuring deterrence. Overall the results of any study on deterrence using purely this approach, although limited could be useful.

5.1.4 Regression Analysis

Regression analysis typically involves accessing various data sets and applying statistical techniques that can be used to explore the relationship between say one continuous dependant variable and a number of independent variables or predictors. Multiple-regression is based on correlations but allows for a more sophisticated exploration of the inter-relationship among a set of variables.¹⁴⁴ Multiple-regression can also tell how well a set of variables will predict a particular outcome such as, non-compliance, or be used to statistically control for an additional variable (variables) when exploring the predictive ability of the model.

Many improvements in data quality have made this technique more desirable. These include access to individual level data rather than aggregated figures, the use of more sophisticated statistical measures and the use of multiple data sources to obtain access to a wider range of information, including socio-economic factors which have previously been ignored in regression studies (Refer Appendix 1).¹⁴⁵ It has also been demonstrated by other researchers¹⁴⁶ that the use of both cross sectional and time series data has allowed for the separation of highly correlated variables such as, tax rate and income level which has improved the validity of results. Likewise, a new data source such as, amnesty data, has meant that information which was previously unavailable can now be obtained from non-lodgers which will allow research into their behaviour. This is of particular importance with regards to deterring future non-lodgers.

The most obvious problem with performing regression modeling for assessing taxpayer compliance is getting access to good data. Revenue authorities around the world (other than the Netherlands) are unfortunately reluctant to distribute data to researchers. Another problem with this quantitative technique is the accuracy of return –based measures, that is, factual information obtained from the tax return. The issue here is that ‘hard data’ may not be superior to that derived using other research methods. This was evidenced in a

¹⁴¹ See Cronshaw and Alm (1995), and Myles and Naylor, (1996) in M, Richardson and Sawyer, A. J., above n 2, 236.

¹⁴² Keppler and Nagin (1989), in M, Richardson and Sawyer, A.J., above n 2, 236.

¹⁴³ Spicer (1986), in M, Richardson and Sawyer, A.J., above n 2, 236.

¹⁴⁴ Pallant, J, “SPSS Survival Manual,” A step by step guide to data analysis using SPSS, 2nd Ed (2005) 140.

¹⁴⁵ S. B. Long and J. A. Swingen, (1988) above n 78.

¹⁴⁶ M, Richardson and A. J. Sawyer, (2001) above n 2, 238.

study performed by Elffers¹⁴⁷ where the tax on a number of processed returns found inconsistent treatment by officials. Again the use of this technique in combination with other techniques could be useful, although there has been limited evidence its measurement of deterrence to date.

5.2 Qualitative Techniques

Qualitative research is consistent with an open-minded inductive approach whereby theories are developed and explored, rather than tested. The balance here is that such an approach will confirm the adequacy or inadequacy of the design of the quantitative element of the research, for example, in terms of the identification of the direction of relationships and the influence of mediating variables. Following are some of the more common qualitative techniques employed in tax compliance research.

5.2.1 Process Tracing – Observations

Process tracing indicates that taxpayer compliance is a process rather than a one off action. This method, which is only in its infancy and was developed and tested by Carroll,¹⁴⁸ involves observing taxpayers while they carry out their tax activities so that insights into the compliance process can be obtained. For example, Carroll in 1992 asked a group of 100 volunteers to keep a diary over the course of a year recording any taxpaying thoughts or activities. Subjects were observed by the researcher while filing a return and asked to think aloud. The results were inconsistent and difficult to code. Despite the method being ambitious it has the potential to reveal a lot about taxpayer behaviour, particularly with regards to exploring deterrence mechanisms. Things will be discovered unintentionally, in a natural environment that would not normally be discovered in an experimental setting. The factors that influence taxpayers' decision making may well become more obvious in using this approach.

5.2.2 Interviews - Questioning

Likewise by observing the actual behaviour of taxpayers in their natural setting and undertaking systematic interviews in the field, the researcher becomes the instrument for data collection and is in a better position to make meaning of the process from the taxpayer's perspective (Refer Appendix 1). The instrument is a set of substantive questions reflecting the actual inquiry. These questions are different to a survey in that firstly, they are posed to the investigator, and secondly, each question should be accompanied by a list of probable sources of evidence. Such sources may include individual interviewees, documents or observations. The questions form the structure of the inquiry and are not intended to be the literal questions asked of the interviewee. Instead, the data collection follows a general plan, but the specific information that may become relevant is not readily predictable. The questions may be part of a table shell, where blanks are left to fill in by row and column headings, indicating the categories of

¹⁴⁷ Elffers (1991), in M. Richardson and Sawyer, A, J above n 2, 239.

¹⁴⁸ Carroll (1989) (1992), in M. Richardson and Sawyer, A, J. above n 2, 239.

data to be collected. This approach can be also helpful in managing the format of the data for subsequent analysis. Despite these advantages, interviewing can be difficult in demanding both time and honest responses from participants who are willing to get involved. Nevertheless, it is a method worth pursuing in order to extract more information regarding deterrence mechanisms in taxpayer compliance.

5.2.3 Case studies

A case study is the study of an event within its real-life context. It can be both descriptive and explanatory and is ideally suited to when a “how” or “why” question is being asked about a contemporary set of events, over which the researcher has little or no control.¹⁴⁹ The purpose of the case study is to draw analytical generalisations to theoretical propositions not to draw statistical generalisations to a population. Thus in a case study, there is no “sample”. Instead, there are multiple sources of evidence collected in accordance with a set of pre-specified procedures. Design is still a critical issue as the data to be collected must be appropriate to allow the research questions to be addressed and must be collected in a consistent manner.

In the case of an exploratory case study, Yin¹⁵⁰ argued it was more critical that the study had a clear purpose, rather than propositions. The unit of analysis may be an event, entity or an individual. An event or an entity may be more difficult to define than an individual. The unit of analysis needs to be in accordance with the purpose of the study and well defined so that the limits of the data collection and analysis are clear. Linking data to propositions is commonly done by using control groups or by pattern matching data to a theoretical proposition or to data from other sources or tests.

The case study protocol is an essential element of the method design as it contains the instrument for data collection and the procedures and general rules to be followed. The protocol serves to improve the reliability of the case study, particularly where there is to be more than one interviewer or multiple units to be studied. Yin argued that the opportunity to use multiple sources of evidence is a major strength of case study data collection in that it allows the researcher to address a broader range of issues and to develop converging lines of inquiry.¹⁵¹

Reliability is the extent to which the case study results are objective, with errors and biases minimised. Reliable findings and conclusions in a case study require well-documented research procedures so that a subsequent researcher can follow exactly the same procedures and arrive at the same findings and conclusions. Yin argued that a case study protocol provides an appropriate guideline for procedure documentation¹⁵².

¹⁴⁹ R. Yin, *Case Study Research*, Sage, Newbury Park CA, 1989, 20.

¹⁵⁰ *Ibid*, 20.

¹⁵¹ R. Yin, above n 149, 96-97.

¹⁵² R. Yin, above n 149, 97.

An embedded design breaks down the purpose of the study into sub-units, and includes outcomes for these sub-units, sometimes in a quantitative form. This facilitates a deeper level of findings and understandings, about the sub-units. It is important in an embedded case study to be able to draw together the findings and conclusions on the sub-units in relation to the overall purpose of the study, that is, not to lose sight of the bigger picture. The protocol is a guide and does not require rigid adherence. In the field, there will be times when the investigator needs to be flexible and adaptable, and provided there is no bias, these attributes could be the very strength of case study research.

On the negative side, there are no statistical tests to assist in the interpretation of a case study's findings. Instead, the researcher must set the criteria for interpretation. As a result, external validity is problematic for case studies in that statistical generalisation cannot be supported. Likewise sampling logic has no application to case studies. However, given that case studies rely on analytical generalisation, then external validity is less of an issue. Even so, it can be addressed to some extent by documenting the study in such a way as to allow for its replication. In critical (or extreme) single unit case studies however, replications are not always possible given their unique nature.

A case study design maybe of a single unit or multiple units. A single unit case study would be appropriate in the case of a critical, extreme or revelatory situation, but it has the disadvantage of possible misrepresentation given its isolated nature. However, in the revelatory situation, where the researcher is observing a phenomenon that was previously inaccessible to scientific investigation, then the likelihood of misrepresentation can be reduced by undertaking replications of the single case study. A holistic design is appropriate where a global approach is required. However, such an approach will not facilitate the examination of any specific phenomenon in operational detail nor provide any clear measures of data.

Given the merits of the case study approach, it appears that it would be useful in measuring deterrence if it was applied correctly and the protocols were followed precisely to ensure the reliability and validity of the results. In particular, it is here that a mixed method research design is an advantage, as the degree of convergence of the results from the two phases can in effect be the criteria by which the findings of the case study can be judged (Refer Appendix 1).

5.2.4 Grounded and Neutralisation Theories

Finally two theories rather than methodologies which flow from the qualitative spectrum are grounded and neutralization theory. Grounded theory is an approach which requires constant comparison of data with emerging categories and the theoretical sampling of different groups to test for consistencies and internal validity. Basically, it seeks to discover a theory that is grounded in information from informants. That is, rather than try and confirm existing theories it tries and establishes new ones that emerge directly from talking to people. New visions and opinions are analysed and confirmed to provide a new alternative theory. However, the problem with using this approach in testing for

deterrence in taxpayer compliance is that the construct of a single theory would appear to be inadequate, given the number of variables that can impact upon it.

Neutralisation theory is based on the assumption that people who are able to eliminate feelings of guilt before engaging in acts of non-compliance are more likely to engage in such acts. As stated previously this is an offshoot of deterrence theory and is mentioned here as a possible future strategy given its relevance to deterrence and taxpayer compliance behaviour¹⁵³. Unfortunately this theory has lacked research attention to date, but given that it could be quite easily incorporated within qualitative interviewing or case studies analysis it is highly recommended that it be further explored.

6. Problems of Measurement and Limitations of this Analysis

In adopting a mixed method approach to measure the deterrent impact of penalties and sanctions and other variables upon taxpayer compliance, certain problems and limitations are nevertheless evident. As stated previously, deterrence by its very nature is a complex and difficult concept. The number of people deterred from a particular criminal act cannot be measured directly in theory, and number of other factors, including social, economic and political, also come into play which impact upon the accuracy of research methods in measuring deterrence. Controlling for these other factors is often difficult in both quantitative and qualitative terms, not to mention that both time and resources of researchers are generally limited and some research methods are incompatible.

Likewise deterrence research utilises a great variety of indices, including the commonly used index of the severity of punishment, the probability of apprehension and crime rates. Problems can arise in the use of some of the more important index variables. Serious problems can arise when a common method of defining severity of penalty as an immediate step in the analysis of whether variations in the severity of punishment over time or between locations, influence the incidence of crime.¹⁵⁴ In particular the proportion of actual offences that result in prison sentences is likely to be an extremely small fraction. It has been suggested that less than one percent of actual offences result in sentences although it does vary from crime to crime.¹⁵⁵

It appears that if social science is going to provide useful information on the deterrent effect of sanctions a much better appreciation of the effect of crime on criminal justice will also be required. The results of Nagin's¹⁵⁶ study make a strong case for the argument that the negative association between the index crime rate and imprisonment risk which has been so thoroughly documented in the literature, is attributable to the negative effect of crime rate on imprisonment risk.

¹⁵³ M, Richardson and A. J. Sawyer, (2001) above n 2, 243.

¹⁵⁴ Zimring, F., E., and Hawkins G, J., above n 6, 327-338.

¹⁵⁵ Wilkins, "Crime Prevention and Costs in National Planning: A Discussion of Concepts and Issues (1967) 25 *Internet Rev Criminology Policy*, 23-24.

¹⁵⁶ Nagin, D., above n 42, 364.

Specifically, some of the problems associated with some of the quantitative methods of analysis may include for instance, where survey research is investigating the public attitudes to punishment policy. Surveys can be deficient in this endeavour as it has been found that attitudes “differ greatly in their amenability to observation and measurement.”¹⁵⁷ Particularly on certain sensitive subjects such as tax evasion, the difference in attitude and action can be quite pronounced. Researchers have indicated that most people in answering questions relating to attitude will naturally express their public rather than their private views and their responses will not necessarily tell much about their actual behaviour¹⁵⁸.

Likewise an individual’s reactions or attitudes may not be deliberately adopted modes of regarding a particular subject. Unconscious personality factors have the ability to exercise considerable influence which has the potential to distort findings. Punishment after all is something which most human beings will have experienced in some form and very commonly that experience would have been a highly emotional one. Consequently, peoples’ attitudes in this area are frequently both ambivalent and labile. In surveying tax evaders as a particularly difficult sample, it would not be uncommon for identification with and sympathy for the victims of tax evasion to inspire feelings of indignation and aggression. On the contrary identification with offenders may induce feelings of tolerance and compassion.¹⁵⁹

Another problem incurred in using statistical models and analysis in trying to evaluate the quality of data has been to consider whether the model improves upon chance in classifying respondents. For example, if you are trying to place respondents of taxpayers in one of two categories, evaders and non-evaders, the chances are 50% given no other information about the individual. However in reality this is not that simple and models despite having some theoretical relevance have little implied importance given the number of erroneous predictions that remain.¹⁶⁰

Other problems associated with some of the qualitative techniques include, the on-going issue of honesty in interviews of sensitive topics, such as tax evasion and biases that cannot simply be removed by the case study approach. Also qualitative data may not be viewed as objective, particularly when it may be conditioned by motivational and emotional responses, and unconscious personality dynamics which the observer may not be aware of. It is also critical that the protocol of the case study be strictly followed to ensure the reliability and validity of the results. This can be the most difficult part in carrying out the case study, which has proven to be the downfall of past studies that could not be replicated. Process Tracing although promising, has had problems associated with coding and the variation of results and needs further development. Likewise both grounded and neutralisation theories are also in their infancy in terms of tax compliance studies and require greater adoption and application to support their case.

¹⁵⁷ Stephen, and Mc Carthy, *Sampling Opinions: Analysis of Survey Procedure*, (1958) 355.

¹⁵⁸ Vernon, “Measurement of Abilities, Attitudes and Personality Traits”, in Welford (ed) *Society: Problems and Methods of Study*, (1962) 71.

¹⁵⁹ Zimring, F., E., and Hawkins G, J., above n 6, 336.

¹⁶⁰ R. Mason, and L. D. Calvin, above n 64, 84.

Finally, the inclusion of some of the demographic variables to assist in the analysis of deterrence upon tax compliance also raises certain problems and issues. As mentioned previously some variables such as the income variable may have a distortive effect on other variables like nationality. Also the use of different occupational and employment status categories in various studies has made it difficult to analyse the impact of this variable upon tax compliance. A similar issue was found in the educational/qualification variable, when determining which aspect of education was being measured. The age and gender variable were affected by other compliance variables, and possibly when too many variables are utilized in a particular study it can mitigate the value of the overall findings.

7. Conclusion

Nevertheless, despite the forgoing problems and issues it is suggested that a mixed method approach incorporating both quantitative and qualitative research methods would still be the most effective in measuring deterrence. Given that the research problem or underlying purpose of the research is to measure the deterrent effect of penalties and sanctions for taxation offences and its impact upon improving taxpayer compliance, it is proposed that to address this issue in its entirety requires both descriptive knowledge and knowledge about both outcomes and process. Consequently, to pursue this knowledge a mixed method design, drawing from both quantitative and qualitative research paradigms is recommended.

As the underlying research is about people's behaviour, a quantitative study alone would not fulfill the purpose of the research nor provide an adequate explanation of why people behave the way they do. This is supported by the literature as many authors have concluded that very little is known about taxpayer behaviour.¹⁶¹ Therefore, a study of descriptions and outcomes is well suited to the quantitative paradigm while a study of the process is more within the realms of the qualitative paradigm. While both paradigms and the particular methods within each have their advantages and disadvantages as indicated throughout the paper, the aim is to draw upon the strengths of both in a complementary and cross validation research method. In particular a combination of the survey and statistical analysis techniques along with an interview and/or case study approach would provide a sound basis on which to evaluate and measure deterrence in taxpayer compliance. This will hopefully ensure that not only deterrence measures are revealed but more importantly, how taxpayers' perceptions of deterrent measures are formed.

¹⁶¹ For example see S. B. Long and J. A. Swingen, (1988) above n 78, 127-146.

Appendix 1

The table below indicates the various compliance variables which have been suggested for adoption into an expanded deterrence theory model along with the various research methodologies available in order to measure deterrence in tax compliance.

The symbol (✓) indicates which research methods could be used in combination with which compliance variables to best measure deterrence

Compliance variable	Penalties & Sanctions	Probability of Detection	Enforcement/ of sanctions Sentencing	Tax Rate	Income Level	Complexity	Demo-graphics	Other-Ethics
Surveys*	✓	✓	✓	✓	✓	✓	✓	✓
Experiments	✓			✓	✓			
Analytical Studies	✓			✓	✓	✓	✓	
Regression * Analysis	✓	✓	✓	✓	✓	✓	✓	
Process Tracing	✓	✓	✓			✓	✓	✓
Interviews*	✓	✓	✓	✓	✓	✓	✓	✓
Case Studies*	✓	✓	✓	✓	✓	✓	✓	✓
Neutralisation Theory	✓	✓	✓			✓	✓	✓
Grounded Theory								

* Recommendation to utilize these mixed research methods