



Personal Tax Relief Schemes: Awareness and Usage among Personal Income Taxpayers within Kumasi Metropolis of Ghana

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

To lessen burdens caused by enforcement of tax laws and to ensure equal distribution of tax burdens, good tax systems grant individual personal income taxpayers (PIT) reduction(s) in their taxable income through personal income tax reliefs schemes (PTRS). The Ghanaian tax system is no exception to this. The usage however depends on the taxpayer's awareness and willingness to adopt. This study therefore sought to ascertain the PTRS awareness and usage level and the factors that influence the PTRS usage in mitigating tax burdens among individual Ghanaian PIT within the Kumasi Metropolis. Also, this study sought to impale research interest in PTRS usage considering its effects on government tax revenue and disposable household and national incomes. The study used a survey research design with sets of structured questionnaires. The results of the study are based on responses from 210 PIT from Kumasi Metropolis of Ghana analyzed using descriptive statistics and binary logistic regression. The results suggest that while there is fair level of PTRS awareness, PTRS usage remains very low among Ghanaian PIT from

Kumasi Metropolis. The study also identified knowledge, awareness, challenges, and perception as statistically key factors that influence PTRS usage in mitigating tax burdens among individual PIT from Kumasi Metropolis. Consequently, this paper recommends that Ghana Revenue Authority and/or tax policy makers, social advocators and National Commission on Civic Education among others pay attention to these factors so as to step up interest in PTRS usage as means of mitigating tax burdens if voluntary tax compliance is to be encouraged.

Keywords: Awareness and usage; taxpayers; personal income tax relief schemes; tax burdens, personal income taxpayers.

1. INTRODUCTION

Review of economics literature suggests that guaranteeing adequate disposable income in the hands of individual households and at the same time, ensuring equitable distribution of disposable income in every economy have for many years remained one of the most significant themes in public finance management. In fact, the issues of adequate disposable income in the hands of households and its equitable distribution are still dominant issue in fiscal policies even in today's economic environment as nations strive to maximize tax revenue as against other forms of sources of government revenue [1]. According to literature, this stems back from the days of Adam (1776) and has remained one of the most important economic and fiscal policies of governments. This has implications for not only government revenue, but also trade (demand and supply), savings and investment which also have resultant effect on growth and national income [1]. However, tax and/or taxation may be seen as the most basic determinant of equitable distribution of wealth or resources among households in any jurisdiction [2-5].

Notably, enforcement of taxes by tax officials causes individual taxpayers to give up part of their control over private resources (that is income) to the government of a jurisdiction [1-6]. This given up resource, known as tax revenue, is one of the most crucial sources of a government's revenue for the production of common goods and services for the general citizenry [1-8]. In giving up those controls, there is huge pinch usually suffered by those who paid the taxes known as tax burden. To offload the said burden caused by enforcement of the tax law, many taxpayers resort to income tax evasion [1-6]. Evasion, however, has negative effects on both the taxpayer(s) and the tax revenue accruing to the government [1-6]. As it were, as a taxpayer engages in tax evasion, he may be regarded as disloyal citizen as well as

infringing the tax status. These may be punishable by imprisonment, fine or both. The net likely effect will be that the taxpayer will be more disadvantaged when caught in the act of tax evasion. On the other hand, the tax revenue due the government will be negatively affected as result of non-payment of the imposed taxes by the taxpayers due to evasion. Consequent to that, as the taxes are not being paid, the little tax revenue collected as well as other resources will be spent combating the crime of evasion.

Consequently, in order to lessen the burden of taxes on individuals, avoid the occurrence of evasion, ensure equal distribution of the tax burden among various taxpayers, and also to elicit voluntary tax compliance, good tax systems across the globe usually grant taxpayers a reduction in their taxable base [2,4-6]. This reduction in the taxable base is technically referred to as personal tax reliefs (PTR) and this is built into Ghanaian tax systems. According to literature, opinions are that most individual taxpayers as rational would want to take full advantage of tax incentives including PTR in reducing their tax burden as provided for in the tax laws [2,4-6,9,10]. However, the reverse is the case among Ghanaian individual income tax payers [6,11].

The knowledge that tax officials enforce the tax law in exaction and nothing more than what the tax law requires helps taxpayers to make the most of the provisions of the tax law to their advantage in order to reduce one's tax liabilities [2,4,5]. This has assumed some popularity not only among taxpayers, but also the judiciaries as postulated by Judge Learned Hands in [12] and Lord Tomlin in [13].

1.1 The Research Aim and Objectives

Considering importance of taxation and the effects of non-compliance on government cash flow, there have been enormous tax compliance researches across the globe [1,3]. However,

careful review of extant literature suggests PTRS research in developing economies specifically in Ghana is still at its infancy resulting in paucity in PTRS literature. Also, until the assertion by the Minister of Finance and Economic Planning in the 2012 Budget Statement presentation, it appears there has not been any PTRS research in Ghana despite PTRS importance to both government's tax revenue and households' disposable income and/or level of investment. In Ghanaian context, the only empirical PTRS research available (as at March, 2015) was [6] which was to corroborate the Minister's assertion. This study thus concluded that, although most Ghanaian employees are sentient of the PTR schemes, only few of them have ever taken advantage of PTRS as means of reducing their tax burden so far.

A careful review of [6] study revealed a conspicuous omission of factors that could influence taxpayers' likelihood of PTRS usage in mitigating tax burdens but rather the study was quick to recommend further studies to investigate these. Further, [6] study only concentrated on employee taxpayers, leaving out the selfemployed taxpayers. It is therefore imperative to postulate a study that probes awareness and usage of personal tax relief scheme(s) among both the self-employed and employee taxpayers in Ghana. The aim of this study, however, is to take a slight paradigm shift in its empirical investigation of the level of awareness of personal tax relief scheme using a sample comprehensive enough to include both selfemployed and employee taxpayers. This study therefore sought to ascertain and/or predict the PTRS awareness and usage level as well as the factors that influence PTRS usage in mitigating tax burdens among individual Ghanaian personal income taxpayers within the Kumasi Metropolis. It is anticipated that this study will fill the existing research gap and thereafter impale research interest in the issue under study while answering [6] call.

1.2 Research Questions

Based on the foregoing objectives, this study sought to find answers to the following main research questions:

- 1. What is the level of awareness and usage of PTRS in lessening tax burdens among Ghanaian taxpayers?
- 2. Are there any significant relationships between Ghanaian taxpayers level of

Gbadago; AJEBA, 3(1): 1-16, 2017; Article no.AJEBA.32107

PTRS usage and their demographic factors?

2. REVIEW OF LITERATURE

PTR may be defined as the statutory deductions from assessable income in ascertaining the chargeable income of an individual [2,4-6]. It is intended to reduce the taxable income and thereby lessening the individual's tax burden. PTR are given depending on the personal circumstances of the individual taxpaver [14]. In line with the provisions of [14], specifically Section 39 (1), the personal assessable income of individual taxpayer for a year of assessment shall be reduced by the various reliefs s/he is accorded as her/is circumstances depict. Besides reducing the tax burdens, the PTR are expected to encourage certain forms of behavior and actions such as the responsibility towards one's family (spouse and children), education of children, care for the aged relatives, saving towards one's old age, etc. as depicts in Table 1. Under the income tax laws of Ghana, specifically Sections 39, 57 and 60 of [14] as amended, there are the following types of personal reliefs available to individual taxpayers, namely: marginal relief; marriage (responsibility) relief; disability relief; old age relief; children's education relief; aged dependants or relative relief; professional cost of training relief; life assurance relief; and SSF or pension fund relief as summarized in Table 1.

The above personal reliefs are either granted upfront on a monthly basis or at the end of the year when filing the tax return depending on whether the applicant is in formal employment or otherwise.

Upfront reliefs are granted to qualifying individuals on a monthly basis in the course of the assessment year instead of at the end of the year when return is being filed. This usually applies to employees in formal employment who have applied for reliefs by filling the tax relief application form known as IT Form 21A. The IT Form 21A solicits important information peculiar to the individual taxpayer's circumstances. These requested information enable the Commissioner General of Ghana Revenue Authority to know what reliefs the applicant qualifies for.

The completed IT Form 21A must be counter signed by the employer of the applicant to confirm the data being provided. The reliefs so approved and granted are then transferred onto

No.	Relief	Section of Act 592	Purpose
1	Marginal Relief	First Schedule) 1(2)	Avoiding taxing minimum wage to ensure minimum standard of living
2	Marriage Relief	(S.39)	Responsibility towards one's family
3	Disabled Relief	(S.39)	Security for disability
4	Old Age Relief	(S.39)	Secure disposable income to aged
5	Children Education Relief	(S.39)	Responsibility for children & wards
6	Aged Dependant or Relative Relief	(S.39)	Care for dependant relatives
7	Professional Cost of Training Relief	(S.23, S.39)	Encourages professional, technical and vocational skills by taxpayers
8	Life Assurance Premium Reductions or Relief	(S.57)	Encourages cover for life against personal accidents
9	Social Security Fund (SSF) or Pension Fund Relief	(S.60)	Security against old age

Table 1. Tabulation of various PTRs available under act 592 (as amended)

Source: Author's compilation from act 592 (as amended)

a tax relief card (IT Form 111A & B) indicating the various amounts of reliefs granted to the taxpayer and the supposed monthly deductible deductions. The Commissioner General, having signed the IT Form 111A & B, gives a copy to the applicant (taxpayer) to be handed over to the employer to authorize him/her to effect the deductions on a monthly basis at source when computing the monthly employment earnings (pay) and Pay As You Earn (PAYE) tax liability. The reliefs that are usually granted upfront are mostly marriage or responsibility, old age, aged dependant, child education, Social Security Fund, disabled and marginal reliefs.

All other reliefs are granted at the end of one's basis period. All other individual taxpayers such as those that are not in formal employment are granted tax reliefs only at the end of the year of assessment when furnishing tax returns. The use of IT Form 111A & B does not apply in this case. If the Commissioner General is not satisfied with information provided, he may request for supporting documents in respect of reliefs applied for.

2.1 Model Specification

Extant taxation literature consistent with utility theory asserts that compliance with tax laws or otherwise is likely to be influenced by some underlying factors [8,15,16]. In spite of the increasing importance of the above mentioned assertion, such factors usually differ depending on the individual taxpayer's circumstance. Also, various tax compliance studies concluded that certain factors best influence behaviour pattern (specifically tax compliance) [1,8,15-19]. As usage of PTRS is provided for in the tax laws, we could conjecture that, PTRS usage in mitigating tax burdens within the confines of the tax law (instead of unapproved evasion) may be seen as tax compliance. Accordingly, taxpayers' PTRS usage in mitigating tax burdens can be explained by personal or demographic, institutional, and other environmental factors such as gender; age; educational background; Nature and/or type of work; Experience; Similarities in taxpayer's prior engagements to current one; Knowledge of the tax law provisions; Experience in payment of Awareness and/or consciousness; tax(es); perceptions of tax law provisions; Challenges; Among others. However, these drivers may not be constant and are entirely shrouded.

Based on other studies [1,8,15-19], this paper conjectured that the factors as outlined in Table 2 have the probabilities to influence individual taxpayer's PTRS usage in mitigating tax burdens.

For instance, the gender (Genditp) of the respondents is included because though both sexes are expected to pay tax on income earned from their engagements, more males are engaged in employment than their female counterparts. Impliedly, more males are more likely to use PTRS in mitigating their tax liabilities than their female counterparts.

However, while some studies suggest that female taxpayers conformed and complied with tax rules more than male taxpayers [17], others like [20] argued that the differences in the compliance behaviour between males and females may be narrowed as more non-traditional generation of women is evolving in our time.

A dummy variable was used to specify the gender of the respondents. A value of 1 was assigned to males and 2 to females. It is expected that when an income taxpayer is a male, he will be more likely to use PTRS than if he is a female income taxpayer. Age (Ageitp) is specified as individual taxpayer's age measured in years at the time of data collection (March, 2015).

Educational background enables individual income taxpayers (EducBitp) to comprehend more easily complex legislative and general information, keep records, conduct basic analysis and interpretation so as to make the right decisions as to comply or otherwise. Literature seems to portray that educational background has a significant impact on attitude to tax compliance behaviour of taxpayers [1,21-24]. Thus, well educated individual income taxpayers are assumed to be more knowledgeable in most legislations and hence aware of PTRS usage. Educational backgrounds of respondents were specified as applicable, not applicable. It is hypothesized that individual income taxpayers with adequate educational background (or with higher levels of education) are more likely to be aware of PTRS as under the tax laws of Ghana and hence have high tendency to avail to PTRS.

The working experience of individual taxpayer (Ageweitp) measured in terms of number of years is believed to positively influence PTRS usage of individual income taxpayers. Thus, those with many years working experience may have been aware of PTRS, might have ever utilized it and are more likely to subsequently utilize it in mitigating their tax liabilities.

Nature and/or type of work of an individual income taxpayer may have different implications for PTRS usage. As employee income taxpayers are granted upfront reliefs, self-employed taxpayers are granted reliefs at the end of their basis period. This may have consequent influence on income taxpayers' PTRS usage. Nature and/or type of work of an individual taxpayer (Natworkitp) is specified as dummy variable and a value of 1 is assigned to working and 2 for not working. It is expected that selfemployed taxpayers with large taxable base outside the minimum threshold are less likely to utilize PTRS than employee taxpayer [1]. According to literature, prior similar experience has great tendency to influence behavior patterns [25]. Drawing on this assertion, this study posits that an employee's previous experience in PTRS usage is likely to influence his future usage and hence its inclusion in the model. Similarities of prior engagements to current one (SimPriorEng) specified as dummy variable and a value of 1 is assigned to similar prior engagement or working and 2 as not similar prior engagement may accord the taxpaver the opportunity to follow previous tax history. In this case making it easier for the taxpayer to rely on earlier information and practice in tax obligations. Thus, taxpayers who ever got assistance from her/is previous employer in utilizing PTRS is more likely to do same in similar engagement.

Also, prior experiences in paying taxes by the individual taxpayer (Pexpaytax) specified as dummy variable and a value of 1 is assigned to heavy tax burden and 2 as otherwise; May have significant positive effect on taxpayers. Thus, taxpayers with heavy tax burdens are more likely to deploy PTRS than those with otherwise less tax burdens.

Taxpayers' knowledge in tax laws is said to have significant relationship with tax compliance [16]. Some income taxpayers (such as accountants, lawyers, auditors, tax officers, etc.) are regarded as knowledgeable in the income tax law (Knoitp). It is therefore assumed that when an income taxpayer exhibits adequate knowledge in the income tax law, s/he is more likely to use PTRS in reducing his/her taxable base and hence pay less tax. This variable is assigned 1 if the taxpayer has adequate knowledge and 2 otherwise. It is expected to have positive relationship with probability of PTRS usage.

There is highly likelihood of PTRS usage among individual taxpayers who are very much aware of the capability of PTRS (Awareness) in helping them largely reduce their tax burdens. In other words, income taxpayers who are aware of PTRS are more likely to deploy PTRS than those who are otherwise unaware. This variable is assigned 1 if the taxpayer is aware of PTRS as under the tax law and 2 otherwise not aware. It is expected that awareness should have positive relationship with probability of taxpayer's PTRS usage.

Similarly, challenges encountered by individual taxpayers in their prior attempt(s) if any (challenges) when accessing reliefs is likely to influence his subsequent PTRS usage in

reducing tax burden. The challenges therefore specified as dummy variable with a value of 1 if regarded as cumbersome and 2 if otherwise.

Prior personal experiences and/or challenges encountered by individual income taxpayers are likely to cause the taxpayer to form a personal perception or opinion on a tax system. Thus, perception(s) and/or opinion form on tax system based on experiences or challenges are expected to have great influence on one's usage or patronage of the said tax system.

As it were, any individual income taxpayer who wishes to mitigate his/her tax burdens legally within the confines of the tax law, and more importantly without having any serious issues with the law, will ultimately utilize the PTRS instead of tax evasion. Therefore, the dependent variable denoted as the PTRS usage in mitigating tax burdens by individual income taxpayers takes the value of 1 if the individual income taxpayer uses PTRS and 2 if otherwise.

Stemming from the above discussions, this study adopts the binary logistic regression modeling technique as the analytical framework for predicting the Odds of PTRS usage decisions among the study respondents. According to literature, there are numerous models for estimating determinants in practice such as probit (standard normal), logit (logistic), tobit (extreme value) [8,17,19,26] and structural equation model [18]. The choice of this methodology for this study, however, is as a result of the fact that the regressors of the model are binary and that it has great potency to predict categorical outcome using multiple categorical and/or numeric predictors.

Guided by related prior studies, the logistic regression model is thus specified as:

$$ln\left[\frac{P_i}{1-P_i}\right]$$

 $\downarrow^{1-r_{1}} \downarrow^{1-r_{1}} \downarrow^{1-r_{1}} = \lambda_{0} + \lambda_{1}$ Genditp + λ_{2} Ageitp + λ_{3} EducBitp + λ_{4} Ageweitp + λ_{5} Natworkitp +

 λ_6 SimPriorEng + λ_7 Pexpaytax + λ_8 Knoitp + λ_9 Awareness + λ_{10} Challenges + λ_{11} Percpptrs + μ

Where,

- P_i = is the probability that a respondent will use PTRS in mitigating his(er) tax burden or not;
- μ = Error or random disturbance term;

 $\mathbf{\hat{\lambda}}_{0}$ = Constant term;

Gbadago; AJEBA, 3(1): 1-16, 2017; Article no.AJEBA.32107

$\lambda_{1...} \lambda_{10}$ = The logistic regression coefficients estimated.

However, these coefficients do not provide direct information about the effect of the changes in the independent variables on the PTRS, but on the probability of respondents applying the PTRS as provided under the tax laws. The regression analysis was carried out between the dependent variable (PTRS usage in mitigating tax burden) and the independent variables as specified in Table 2. Based on prior studies social economic variables such as gender of the individual taxpayer; Age; Educational background; Number of years working experience; nature and/or type of work; similarities of prior and current engagements; Prior experiences in paying taxes; Knowledge of the tax laws; Perception of the procedures for applying for PTRS; And challenges encountered in the previous attempts to apply PTRS were used as the independent variables (as specified in Table 2) as they are believed to influence behaviour [1,3,18].

As indicated above, any individual income taxpayer who wishes to mitigate his/her tax burdens legally within the confines of the tax law, and more importantly without having any serious issues with the law, will ultimately utilize the PTRS instead of tax evasion. Therefore, the dependent variable denoted as the PTRS usage in lessening tax burdens by individual income taxpayers takes the value of 1 if the individual income taxpayer uses PTRS and 2 if otherwise.

As defined above, P_i is the probability of a taxpayer choosing to utilize PTRS to mitigate his/her tax burden (that is the dependent variable) and In is a linear combination of the natural logarithm of the independent variables [18,27]). As coefficient results are not quite easily interpretable, the natural logarithm of the coefficient (ExpB, that is the odd ratio) could be taken as the times the likelihood increases or decreases with every change in value of one of the value of the independent variables [18]. Thus, should an independent variable have an ExpB or odd ratio of 5, then the likelihood of utilizing PTRS will increase by fivefold for every one increase in the value of taxpaver's PTRS usage for the independent variable. On the other hand, if an independent variable has an ExpB or odd ratio of 0.20, the likelihood of Taxpayer's PTRS usage is only one-fifth as large as a taxpayer who enters a value one point greater in the independent variable.

S#	Variables	Description of measurement item	Measurement	As shown in item
1.	ln (Pi /(1 - Pi))	Individual Taxpayer's PTRS usage	(use in mitigating his(or her) tax burden, not use)	Q13
2.	Genditp	Gender of Individual Taxpayer	(Males, Females)	Q1
3.	Ageitp	Age of Individual Taxpayer	(Age in Years)	Q2
4.	EducBitp	Educational Background of Individual Taxpayer	(Applicable, Not Applicable)	Q3
5.	Ageweitp	Number of years working experience of Individual Taxpayer	(Age in Years)	Q4
6.	Natworkitp	Nature and/ or type work of Individual Taxpayer	(Working, otherwise)	Q5
7.	SimPriorEng	Similarities of Prior Engagements to current one	(Similar; Not Similar)	Q6
8.	Pexpaytax	Prior Experiences in paying taxes by the Individual Taxpayer	(heavy Tax burden, Otherwise)	Q7
9.	Knoitp	knowledge of the Individual Taxpayer on the income tax law	(Has knowledge, Otherwise)	Q9
10	Awareness	Individual Taxpayer Individual Taxpayer's awareness of PTSR for tax burden mitigation	(Adequate, Otherwise)	Q10
11	Challenges	Individual Taxpayer Individual Taxpayer's Encountering of challenges in prior attempt(s) if any	(Cumbersome, Otherwise)	Q18
12	Percpptrs	Individual Taxpayer Individual Taxpayer's Perception of the procedures for applying for PTRS	(Fair, Otherwise)	Q19

Table 2. Description (and/or specification) of interdependent variables used in the model

Source: Authors' design, March, 2015

3. METHODOLOGY

To obtain the data for analysis, this study used a survey research approach where sets of selfadministered questionnaires were used as data collection instruments. The population for the study was basically every Ghanaian within the Kumasi Metropolis who is qualified to pay tax under the income tax laws of Ghana specifically [27] as amended. In a similar study on the current issue by [6], a sample of 219 respondents from Greater Accra. Ashanti and Brong Ahafo regions was used. For the purposes of this study, a sample of respondents from Kumasi, the capital of Ashanti Region, was used based on the estimation method as given by [28] and [29] to determine the sample size for the study as shown below:

$$n = \frac{s^2(x)(y)}{E^2}$$
(1)

Where,

- n = Sample size;
- x = The proportion of taxpayers who accessed personal tax reliefs;
- y = The proportion of taxpayers who do not access personal tax reliefs;
- S = Number of standard deviation for a chosen confidence interval level;
- E = The allowable margin of error.

According to [6] study, about 19.20% of the 78.1% taxpayers who are aware of the existence of the personal tax relief scheme under the tax laws of Ghana, have taken advantage of the scheme. In other words, about twenty-five percent of those who were aware of the existence of the scheme in [6] study used personal tax relief scheme(s) as a means of reducing their tax liabilities (i.e. burdens). Based on the above assertions, we thus assumed 95% confidence level and 5% margin of error to estimate our sample for the study as follows:

$$N = \frac{1.96^2(0.192)(0.808)}{0.05^2}$$
(2)

Therefore, 236 taxpayers comprising both selfemployed and employees were sampled from Kumasi Metropolis for the study. It is generally recognized under Central Limit Theorem that in a sample of 100 or more, distribution is approximately normal and the results of regression analysis (in other words, statistical meaningful tests performed) are and representative [30] as cited in [29,31,32]. Therefore, the sample size of 236 used is reasonable and representative for this study. The data were obtained primarily from the field survey conducted within Kumasi and its suburbs, namely, Abuakwa, Tanoso, Kwadaso, Danyame, Adum. Harper Road, Ridge, Ahodwo Roundabout using a structured questionnaire. The data collected were analyzed using SPSS Version 21 with help from MS Excel Application.

However, at the field due to the vastness of the population, a purposive and convenient sampling approach was used. The sample comprised members of universities' communities (both private and public): employees of financial institutions; local government staff; employees in the private sector: and self employed individuals. These respondents were selected for this study as they are perceived as relatively regular [6,33] taxpayers and hence maybe knowledgeable and well informed on issues of PTRS. Thus, they are believed to have knowledge on the existence of the personal tax relief schemes under the tax law and hence providing the basis for their selection for this current study. The research questionnaire or instruments were largely administered to respondents within their normal working environments.

Out of 236 sets of the research questionnaire distributed, 210 were returned answered and usable thus giving an 88.98% response rate. The data obtained from the completed instruments received were collated and coded into SPSS Version 21 for statistical analysis to enable interpretation.

Attempts were made to administer the questionnaire to all the respondents approached at their various places unless s/he declined to participate in the study. The instrument was largely closed-ended items with possible responses. Closed-ended items were used due to it's ability to obtain the needed data within the shortest possible time line within which respondents were expected to complete the instruments coupled with the number of respondents that the study intended to cover.

The questionnaire for this study consisted of four sections labelled A to D. Section A gathered demographic data, as well as general and experience-related information on the respondents. Section B ascertained the

awareness level of respondents on personal tax relief schemes. Section C focused on the types of personal tax relief schemes and section D attempted to ascertain the factors that influence the usage or otherwise of the personal relief schemes.

4. RESULTS AND DISCUSSION

The results of the study were analyzed using descriptive statistics and regression model as presented and discussed under the ensuing headings.

4.1 Descriptive Statistics

The study revealed that the respondents were made up of 135 (64.30%) males and 75 (35.70%) females (Table 3). This suggests the male taxpayers' dominance in the sample used for this study.

The study respondents' ages ranged between 20 years to above 60 years with the age group 30-39 years dominating as this constituted about 83 respondents (39.50%) of the respondents. The rest were 20 to 29 years with 79 respondents (representing 37.60%), 40 to 49 years with 33

respondents (representing 15.70%), 50 to 59 years with 14 respondents (representing 6.70%), and 60 & above years with 1 respondent (representing 0.50%). It was revealed that the respondent taxpayers have average age of 37 years with standard deviation and coefficient of variation of 37.26 and 1.06 respectively.

Further, the results of the study revealed that the respondents had some form of education as Senior Secondary School Certificate Examination (SSSCE) 13 (6.20%), O' Level 6 (2.90%), A' Level 6 (2.90%), Diploma 54 (25.70%) and degree 126 (60.00%) while those without educational background constituted 5 (2.30%). Those with degree educational background constituted the largest proportion of the study sample, followed by those with a diploma, SSSCE, A' level and O' level in that order suggesting that most respondents have had adequate formal education.

Further, the results of the study revealed that the respondents had working experience ranging from at least one year to above thirty years as shown in Table 3. While those with between 1-5 years working experience dominate the sample studied 106 (50.50%), those with 21 years and

Table 3.	Descriptive	statistics
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Variable	Measurement	Frequency	Percent (%)
Gender	Male	135	64.30
	Female	75	35.70
	20 - 29 yrs	79	37.60
	30 - 39 yrs	83	39.50
Age	40 - 49 yrs	33	15.70
-	50 - 59 yrs	14	6.70
	60 yrs & above	1	0.50
	SSSCE	13	6.20
	O' Level	6	2.90
Educational background	A' Level	6	2.90
-	Diploma	54	25.70
	Degree	126	60.00
	Others	5	2.30
	1 - 5 yrs	106	50.50
	6 - 10 yrs	57	27.10
	11 - 15 yrs	20	9.50
Number of years working experience	16 - 20 yrs	25	11.90
	21 - 25 yrs	1	0.50
	31 yrs & above	1	0.50
	Employee	188	89.50
	self-employed	14	6.70
Type (Nature) of work	Pensioner	1	0.50
,	Unemployed	7	3.30
Previous experience outside current	Yes	140	66.70
engagement/service	No	62	29.50
	Not sure	8	3.80

Source: Field survey, March to April, 2015

above working experience constitute just about 1 (1.00%). It further came to light that about 140 (67.00%) of the respondents have worked outside their current service or engagement(s) while about 62 (30.00%) have never worked outside their current service engagement(s) and about 8 (3.00%) were either not sure or failed to indicate any responses as shown in Table 3.

Analysis of the background of the respondents revealed that the sample studied comprised 188 (89.50%) employees, 14 (6.70%) self-employed, 7 (3.30%) unemployed and 1 (0.50%) pensioners as shown in Table 3. This suggested that the sample studied is largely made up of employees and self-employed people representing active taxpayers and hence providing a fertile ground for the intended investigation into the level of awareness and usage of personal tax relief schemes in reducing one's tax burdens or liabilities.

4.2 The Level of Awareness and Usage of Personal Income Tax Relief Schemes

The findings of the study on the level of awareness and usage of personal tax relief schemes among the respondents appear in Table 4. The study revealed that 191 (91.00%) of the respondents have ever paid income tax, 14 (6.70%) have never paid income tax, while 5 (2.30%) were not sure if they have ever paid income tax. Probing further, it was found that, out of those who have never paid income tax, are those who earn or receive income that are either exempted from tax or within the marginal relief bracket (specifically within minimum wage band/bracket).

This finding largely coincided with that of [6] observation that, while 91.80% of their study respondents have ever paid tax, about 7.30% never paid. As it were, those who pay income taxes are qualified under the income tax law [14] to apply and use personal tax relief schemes in reducing their taxable base (tax burdens). Consequentially, the study attempted to ascertain the level of awareness and usage of personal tax relief schemes among the respondents and it was revealed that 108 (51.40%) were aware of PTRS, 90 (42.90%) were not aware, while 12 (5.70%) were not sure. This finding is largely contrary to that of [6] study which observed that 78.10% of their study respondents were aware of personal tax relief schemes as against 21.90% who were not aware of the schemes' existence.

The study further revealed that just about 29 out of 210 (representing 14.0%) respondents (that is 29 out of the 108 (27.0%) of those who are aware of PTRS have ever applied and used PTRS to reduce their taxable base as shown in Table 4. This finding is very much consistent with [6] observation and the then Finance and Economic Planning Minister's assertions as reported in the Budget Statement (2012) confirming low usage of PTRS among income taxpayers.

The computed descriptive statistics in Table 4, which suggest fair level (51.40% that is 108 out of 210) of awareness of availability of personal tax relief schemes for reducing tax burdens. Contrary, to the fair level of PTRS awareness, there is however, very low (about 14.00% that is 29 out of 210) usage of PTRS on the part of the respondent income taxpayers studied. This coupled with numerous challenges allegedly encountered in previous attempts could be attributed as the disincentive for the low PTRS usage by the respondent income taxpayers in reducing their tax liabilities as provided for under the income tax laws of Ghana [14].

The challenges identified by the study as being largely responsible for the low usage of personal tax relief schemes among the income taxpavers are shown in Table 4. The study revealed that about 37.93% of the respondents who have ever applied for PTRS alleged that too much time is needed to go through the personal relief application process; 17.60% perceived the attitude of the Tax Officers as uncooperative; 20.69% alleged they were not granted the reliefs when they applied for it in their previous attempts; and 24.14% indicated unavailability of the PTRS application forms at the time of applying as the main challenges encountered. Given this, most respondent income taxpayers may prefer not to use personal tax relief schemes should the above mentioned challenges continue to linger around. From the foregoing, the experiences of the respondent income taxpayers seem to be very much contradictory to the procedure painted under the literature review section. Thus, it is asserted that in applying, taxpayers just need to submit IT Form 21A with necessary information and where applicable supporting documents in respect of

No.	Variable			Ме	asurement				Total
			Yes	No		Not sure			
		No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
1.	Payment of Income Tax	191	90.95	14	6.67	5	2.38	210	100.00
2.	Awareness of personal income Tax Relief Schemes (PTRS) as under Act 592 for reducing tax burdens?	108	51.43	90	42.86	12	5.71	210	100.00
3.	Readiness to take advantage of PTRS in lessening tax burdens	147	70	32	15.24	31	14.76	210	100.00
4.	Reasons for not availing PTRS	59	28.10	80	38.10	71	33.81	210	100.00
5.	Ever applied for PTRS	29	13.81	181	86.19	0	-	210	100.00
6.	Challenges faced during application for PTRS	26	12.38	119	56.67	65	30.95	210	100.00
7.	Nature of the challenge(s) ever encountered:								
	Wasted too much time	81	38.57						
	Was not granted the reliefs applied for	40	19.05						
	Commissioner was not co-operative	39	18.57						
	Application form was not available at the time	50	23.81						
		210	100.00						

Table 4. Level of awareness and usage of personal tax relief schemes among respondents

Sources: Field survey, March to April, 2015

reliefs being applied for in case of employee taxpayers. In the case of self-employed, they are to apply together with their returns of income at the end of their basis period. This implies that the authorities at the Ghana Revenue Authority's offices need to review PTRS procedures in order to eliminate the above identified challenges if income taxpayers are to be encouraged to access the personal tax relief schemes as a means of reducing their tax burdens. The citizenry, especially the personal income taxpayers, need to be educated on the required procedures and processes one needs to follow to have an application for personal tax relief approved or granted by the Commissioner General of Ghana Revenue Authority.

5. ANALYSIS OF REGRESSION RESULTS

The results of the factors likely to influence PTRS usage among Ghanaian individual income taxpayers within the Kumasi Metropolis based on the field data fed into our binary logistics model (as previously stated) are as shown in Tables 5a, 5b, 5c, 5d, 5e, 6 and 7. In all, based on prior studies, 11 factors were listed (as shown in Table 2) to have a significant relationship and/or influence on the respondent income taxpayers' PTRS usage in mitigating tax burdens. Thus, the results of this study (as shown in Table 5) indicate that 181 respondents are predicted as not likely to use PTSR in mitigating their tax burdens at 100% accuracy rate, while 29 respondents are predicted to use PTRS.

The overall classification accuracy rate for the predictive potency of our stated model is at 86.20%, which is seen as pretty good for our purpose. This result is much more like what was exhibited in the frequency distribution table

(Table 3). In addition, the variables in the model (i.e. the predictors) are statistically significant in predicting the likelihood of the PTRS usage decisions of the respondents. This gave an assurance to proceed accordingly.

From the result as shown in Table 5c, our stated model as a whole is statistically significant in terms of goodness of fit to better predict judging from a Chi-square value of 60.689 per the omnibus test of model coefficients from Table 5c. This is confirmed by the Model Summary result indicating a Cox & Snell R square value of 0.251 and Nagelkerke R square value of 0.455 and the Hosmer and Lemeshow Test result (Table 5d & 5e); with a Chi-square value of 9.619, which accordingly is not statistically significant confirming the prediction model. Stated differently, the prediction model is able to explain roughly 45.50% of the likelihoods of the PTRS usage by the respondent income taxpayers and should be considered a huge achievement.

However, in term of classifying the respondents into those likely to use PTRS and those not, the overall goodness of fit (per the result as shown in Table 6), revealed that all together, 179 respondents as against 181 (98.90%) were correctly classified as actually not likely to use PTRS.

Also, from Table 6, 15 respondents compared to 29 were correctly confirmed by the model as likely to use PTRS giving 48.30% classification accuracy rate. Overall, this gave a 91.9% accuracy rate in terms of classification. This implies that our model is about 92.0% accurate in predicting the Odds (the probability) of respondents' PTRS usage.

Table 5a.	Predictor	prediction	membershi	o classification Ta	ıble ^{a,b}
	110010101	production	11101118010111		

Observe	d		Predicted				
			Dependen	t variable	Percentage		
			0.00	1.00	correct		
Step 0	Dependent variable	0.00	181	0	100.00		
-		1.00	29	0	0.00		
	Overall Percentage				86.20		

Sources: Author's result of field data analysis, March to April, 2015

Table 5b. Regression result showing predictive potency of the variables in the equation(Model)

		В	S.E.	Wald	Df	Sig.	Exp(B)
Step 0	Constant	-1.831	0.200	83.816	1	0.000	0.160
Courses Authoris result of field data analysis Marah to April 2015							

Sources: Author's result of field data analysis, March to April, 2015

|--|

		Chi-square	df	Sig.		
Step 1	Step	60.689	11	0.000		
	Block	60.689	11	0.000		
	Model	60.689	11	0.000		
Sources: Author's result of field data analysis, March to April,						
	2015					

Table 5d. Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square			
1	107.937 ^a	0.251	0.455			
Sources: Author's result of field data analysis, March to April, 2015						
Note: a. Estimation terminated at iteration number 7 because parameter estimates changed by						

less than .001.

Table 5e. Hosmer and lemeshow test

Step	Chi-square	df	Sig.			
1	9.619	8	0.293			
Sources: A	Author's result of field a	lata analysis,	March to April,			
2015						

5.1 Factors Influencing Individual Personal Income Taxpayers' PTRS Usage

Beyond the goodness of fit of our model in predicting the likelihood of PTRS usage, we now proceed with the individual factors (variables) in the model accordingly as revealed in Table 7. From the result (Table 7 referred), it could be noticed that, even though all the factors (variables) in the model contributed in predicting the Odds (likelihood) of the respondents' PTRS usage in mitigating tax burdens, four of these factors (variables) are however statistically more significant. These are the respondents' knowledge of the tax laws, awareness of PTRS usage in mitigating tax burdens, challenges encountered previously when applying for the PTRS, and perceptions. This finding is consistent with [1] assertions as discussed below.

Based on the binary logistic regression analysis, the respondents' knowledge of the tax laws and its provisions has a negative and significant relationship with PTRS usage for tax burden mitigation as revealed in Table 7 (regression coefficients of -1.171 and Odds ratio of 0.310). Alternatively stated, all things being equal, those with adequate knowledge on the provisions of the tax law in terms of PTRS are more likely to exploit this to manage their tax burdens compared to their counterparts who do not possess adequate knowledge. This implies that, in attempt to have income taxpayers utilize PTRS in mitigating tax burdens, those attempts should be geared towards improving the income taxpayers' knowledge in the tax laws especially those provisions relating to personal income tax reliefs.

Similarly, awareness created as a result of education and/or consciousness has a positive and significant effect on PTRS usage for tax burden mitigation as revealed in Table 7 (regression coefficients of 0.636 and Odds ratio of 1.889). This implies awareness is able to influence the Odds of PTRS usage by respondent taxpayers. Thus, individual personal income taxpayers with fairly good awareness created with education are 1.889 more likely to use PTRS than individual personal income taxpayers without much awareness. As matter of policy for tax authorities, any attempt to have income taxpayers utilize PTRS in mitigating tax burdens and ensure voluntary tax compliance, should be geared towards improving the individual personal income taxpayers' awareness of PTRS usage as enshrined in the tax laws for mitigating personal income tax liabilities.

Challenges encountered in previous attempts to use PTRS are likely to negatively influence the individual personal income taxpayers' PTRS usage as revealed by the regression coefficient of -1.999 and Odds ratio of 0.136 (Table 7 referred). This means that, Challenges encountered in previous attempts

Observed			Predicted			
			Dependent variable		Percentage Correct	
			.00	1.00		
Step 1	Dependent variable	0.00	179	2	98.90	
		1.00	15	14	48.30	
	Overall Percentage				91.90	

Sources: Author's result(s) of field data analysis, March to April, 2015

Variable	Co-efficient	Std. error	Wald	P values	Odd ratio
Genditp	0.040	0.565	0.005	0.943	1.041
Ageitp	0.532	0.345	2.374	0.123	1.703
EducBitp	0.153	0.283	0.294	0.588	1.166
Ageweitp	0.048	0.279	0.030	0.863	1.049
Natworkitp	-1.093	0.896	1.489	0.222	0.335
SimPriorEng	0.762	0.507	2.258	0.133	2.142
Pexpaytax	0.916	0.696	1.730	0.188	2.499
Knoitp	-1.171	0.499	5.505	0.019	0.310
Awareness	0.636	0.353	3.244	0.072	1.889
Challenges	-1.999	0.459	18.940	0.000	0.136
Percpptrs	-1.055	0.326	10.501	0.001	0.348
Constant	1.995	2.890	0.477	0.490	7.353

Table 7. Estimated binary logistics result

Sources: Author's result of field data analysis, March to April, 2015

by individual personal income taxpayers in their previous attempts to use PTRS has a negative and significant relationship with their subsequent PTRS usage in tax burden mitigation. Thus, all things being equal, the less or no challenges encountered previously by an income taxpayer, the more likely that income taxpayer is to use PTRS in mitigating his or her tax burdens. As this has consequence for government tax revenue, Tax Authorities and policy makers need to ensure that income taxpayers do not encounter any challenges or bottlenecks when applying for PTRS so as to encourage them subsequently.

the results, just like challenges From encountered in previous attempts in using PTRS, income taxpayers' perceptions also have high likelihood to negatively influence PTRS usage among the respondent income taxpavers as revealed by the regression coefficient of -1.055 and Odds ratio of 0.348 (Table 7 referred). This implies that individual income taxpayers' perception of the procedures for applying for PTRS has negative and significant relationship with PTRS usage for tax burden mitigation. The more favourable the perception is, the more likely the respondent is to utilize PTRS in mitigating tax liabilities. Thus, unfavourable perception however is more likely to negatively influence income taxpayers' PTRS usage in mitigating tax liabilities.

6. CONCLUSION AND RECOMMENDA-TIONS

Although this study cannot be said to be without limitations, especially in respect to its inability to cover the whole country as it measures the level of awareness and usage among Ghanaian taxpayers. This may therefore impede the generalization of the inferences made based on the findings. However, the study could be seen as one of the few that lead the way in understanding the provisions of [14] as amended regarding personal tax reliefs schemes and necessary procedures one should follow to access the reliefs. The purpose of this study was to ascertain and/or predict the PTRS awareness and usage level as well as the factors that influence PTRS usage in mitigating tax burdens among individual Ghanaian personal income taxpayers within the Kumasi Metropolis. Also, to impale research interest in personal income tax reliefs schemes considering its effects on government tax revenue and disposable household income and national income in Ghana, an emerging economy.

The results of the study established that though there is fair level of awareness of PTRS, the level of usage however is very low among the respondent personal income tax payers suggesting that personal income tax payers in Kumasi Metropolis are largely not utilizing personal tax relief schemes available under [14] as amended in reducing their taxable base resulting in higher tax liabilities being suffered. Furthermore, study predicted the the respondents' knowledge of the tax laws, awareness of PTRS usage in mitigating tax burdens, challenges encountered previously when applying for the PTRS, and perception as key factors influencing individual personal income taxpayers' PTRS usage within Kumasi Metropolis.

The policy implications stemming from these findings call for the Ghana Revenue Authority, taxpayers and advocates such as the National Civic Educators, as a matter of urgency, to step up educational campaigns on PTRS usage among the various personal income taxpayers

Gbadago; AJEBA, 3(1): 1-16, 2017; Article no.AJEBA.32107

especially those with low income so that they can take advantage of the scheme in mitigating their tax burdens if the scheme is actually meant for them. Also, any policy strategy to encourage PTRS should be geared towards influencing these identified factors (and/ or variables) as they significantly influence personal income taxpayers' PTRS usage in mitigating tax burdens. This is critical as PTRS usage has implications for government tax revenue.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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Gbadago; AJEBA, 3(1): 1-16, 2017; Article no.AJEBA.32107

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