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Article

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Tax education and fear-appealing messages: A grease or sand in the wheels of tax compliance?

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Abstract: The phenomenon of tax education, fear-appealing, and the convenience of tax has become vital in contemporary tax revenue discourse as it is believed that non-compliance of tax has adverse implications on the revenue generation capacity, especially in developing countries. This study departs from the traditional studies on tax compliance by examining the relationship between tax education, committed tax compliance, and capitulative tax compliance among the self-employed in the context of a hierarchical regression. The research design was cross-sectional and correlational using a sample of 400 respondents from a population of 28,355. The results show that albeit tax education and the convenience of tax compliance act as grease in the wheels of committed tax compliance, with both establishing a significant positive relationship with committed tax compliance while fear-appealing messages act as sand in the wheels of committed tax compliance. Also, convenience tax compliance positively influences committed tax compliance

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PUBLIC INTEREST STATEMENT

Tax compliance is a major obstacle to revenue generation in most developing countries. The Ghana Revenue Authority (GRA), realizing the high level of income tax non-compliance among the self-employed, has devised various unconventional tax policies to capture as many self-employed persons as possible. However, the incidence of non-compliance is on the rise, probably because most self-employed taxpayers do not understand the tax system due to its complexity and the higher costs involved in ensuring compliance. Due to this, tax compliance has remained low in the country. This study, therefore, suggests that the Ghana Revenue Authority should make the tax laws less complex to reduce the cost of compliance and enhance tax convenience. Also, regulators of the education sector in conjunction with the revenue authorities should introduce basic tax education as a compulsory course into the school curriculum especially in vocational schools (since most of them end up being self-employed) to boost general tax knowledge so as to enhance tax compliance.

while general tax knowledge, fear-appealing messages, and convenience compliance have a unique contribution to capitulative tax compliance. Based on these findings, it is recommended that the revenue authorities should make tax laws less complex to reduce the cost of compliance and enhance tax convenience. Also, regulators of the education sector in conjunction with the revenue authorities should introduce basic tax education as a compulsory course into the school curriculum to boost general tax knowledge because it enhances tax compliance.

Subjects: Taxation; Finance; Financial Reporting and Economics

Keywords: Tax education; committed tax compliance; capitulative tax compliance hierarchical regression

1. Introduction

Taxation is one of the most significant elements in managing national income, especially in developing and poverty-stricken countries (Gadzo et al., 2013; Lymer & L, 2009). From this backdrop, low tax compliance trammels the capacity of the government to raise revenue for developmental projects (Pobbi et al., 2018). This implies that, with a surge in revenue generation, the government will increase capital expenditure to enhance the living standard of the people. Tax compliance is when taxpayers decide to observe tax laws and regulations by filing returns and paying tax accurately (Mittone & Saredi, 2016; Sebele-Mpofu & Ntim, 2020; Nguyen et al., 2021). In terms of the forms of compliance, Youde and Lim (2019) contributes to the understanding of tax compliance by identifying three forms of compliance, which are: committed compliance, creative compliance and capitulative compliance. Committed compliance is the disposition to discharge tax obligations by a taxpayer without whining. However, creative compliance refers to any act by a taxpayer aimed at reducing taxes by re-evaluating income and deductible expenditure within the confines of the law. On the other hand, capitulative compliance is the observance of tax obligations, although reluctantly. Despite the role played by taxation in economic development, tax non-compliance exists. To encourage taxpayers to pay their taxes, authorities turn to either educate the taxpayers or send them fear appealing messages which has the backing of taxation laws.

Tax education which is denoted as tax knowledge and fear-appealing messages are considered a major factor that affects the level of tax compliance (Fauziati et al., 2016; Lakuma, 2019; Musimenta et al., 2017; Musimenta & Ntim, 2020). In view of this, researchers have continually turned attention to unearth the relationship between these two variables and tax compliance. Studies have also revealed that tax compliance among the self-employed leaves much to be desired. For instance, the study by Scheutze and Bruce (2006) concludes that non-compliance among the self-employed is an important concern as the self-employed sector of the economy makes a very important contribution to the total level of tax evasion in the USA. From the theoretical perspective, most studies on tax compliance rely mainly on the theory of planned behaviour and therefore use intention as a measure of tax compliance (Khuong et al, 2020; Damayanti et al., 2015; Luong & Ha, 2011). However, intention and real behaviour are not the same (Fauziati et al., 2016; Musimenta et al., 2017). One's positive compliance intention may be through circumstances (Sayidah et al 2019; Peprah, Abdulia & Agyemang-Duah 2020). Therefore, recommendations made from these studies may not be true in the real world of taxation. From this backdrop, this study uses real taxpayers to measure both tax education and tax compliance levels.

Moreover, most of the reviewed studies use correlation to measure the causal relationship between tax education and tax compliance which may provide a misleading result (Ling et al, 2018; Machogu & Amayi, 2013; Mukasa, 2011; Olowookere & Fasina, 2013; Tusubira & Nkote, 2013). For instance, a direct correlation between "A" and "B" does not mean "A" positively affects "B" or vice-versa. This study seeks to revise the methodological problems to ascertain robust

results to draw reliable conclusions. The study uses regression analysis to examine the relationship between tax education and tax compliance. Furthermore, this study is also unique in the sense that, it examines tax education and tax compliance by segregating compliance into key elements as suggested by earlier writers (Kportorgbi et al. 2018; Chow, 2004; Hart, 1998; McBarnet, 2001). This would help to know which tax education content influences a particular tax compliance element. The contribution of the paper can be seen from both the academic and policy or operational perspective. In relation to the academic perspective, this study adds to the body of existing knowledge on the subject of tax education and tax compliance among the self-employed in Ghana. From the policy perspective, the study will help the Ghana Revenue Authority (GRA) to develop effective tax educational programmes that would enhance tax compliance behaviour not just among the self-employed, but amongst the entire taxpayers of the country. The greatest beneficiary as a result, would be the citizenry, since improved compliance to tax laws would heighten government revenue for better economic development to improve the welfare of the citizenry.

2. Background

In Ghana, a study conducted by the Institute of Statistical Social and Economic Research (ISSER) in their “State of the Economy Report” in 2018, indicates that the percentage contribution to government revenue of income tax from the self-employed was as low as 5.45%, 6.12% and 6.08% for the tax years 2015, 2016 and 2017 respectively. This is largely attributed to the non-compliance of income tax among the self-employed. According to Peprah et al. (2020), revenue loss from non-compliance by individual taxpayers, specifically the self-employed is estimated to range from \$93.20 billion to \$95.30 billion annually in Ghana. The Ghana Revenue Authority (GRA) has devised various unconventional means of taxation (standard assessment, identifiable groupings and, most recently, the tax stamp) to rope many self-employed persons into the tax net (“GRA,” 2019). After all these measures, the problem of tax non-compliance still persists.

In the Ghanaian context, studies have considered various aspects, for instance, Atuguba (2006) considered the Ghanaian tax culture, Terkper (2007) focused on ways to improve the accounting systems of taxation of Ghanaian SMEs, Ayee (2007) looked at compliance by creating and enhancing reciprocity with the government and Ohene (2011) looked at knowledge of tax reliefs and incentives as well as knowledge of tax education programme by SMEs in the Juaben Municipality of Ghana, Pobbi et al. (2018) looked at the utilisation of personal tax reliefs and most recently Peprah et al. (2020), delved into compliance with income tax administration among micro, small and medium enterprises in Ghana. None of the extant Ghanaian studies have looked at how tax educational interventions would influence the tax compliance behaviour of taxpayers, despite the theoretical supports for such relationships. Therefore, for tax educational policy, the formulators may be tempted to rely solely on literature from other parts of the world which may not be relevant to Ghana’s economy.

The study, therefore, seeks to redefine the theories which define the tax compliance behaviour of taxpayers in Ghana through tax education and provides reference literature for tax education programmes. Following the tax compliance problems and the inadequate evidence-based studies in the Ghanaian context, it is tempting for policymakers to rely solely on studies from other regions whose conclusions have been affected by methodological problems and differences in regional characteristics. It is against these backdrops that the study seeks to investigate the effect of tax education and fear appealing messages on tax compliance among the self-employed in the Cape Coast metropolis of Ghana. The remainder of this paper is as follows: section two is literature review where the hypotheses are developed. The third section is the methodology adopted for this study. This is then followed by the presentation of the results, discussion, conclusions, and recommendations.

3. Theoretical literature review

This study deviates from the norm of using economic deterrence theory and the wider behavioural theory by premising the study under the trans-theoretical model of change (TTM) and the extended parallel process model (EPPM). The trans-theoretical model of change (TTM) explains

the relationship between tax education and committed tax compliance. The TTM is a behaviour change model which is extensively studied (Prochaska & DiClemente, 1986). According to the TTM, behavioural change is considered to be a progression through a succession of six phases, namely: (i) pre-contemplation, (ii) contemplation, (iii) preparation, (iv) action, (v) maintenance, and (vi) termination (Prochaska & DiClemente, 1986). The TTM acknowledges that individuals have particular informational demands at all stages of behavioural change, and it is capable of providing the intervention strategies which are most effective at all of the stages (Prochaska & DiClemente, 1986). Thus, the model proposes that individuals must obtain teaching interventions that are suitable for the stage in which they find themselves in the process of behavioural change (Brewer & Rimer, 2008). Balanced decision-making as well as self-efficacy is a central part of the theory (Brewer & Rimer, 2008). Drawing from the TTM, when individuals in the contemplation and preparation stages of change are educated on the need to change as well as the benefits and the costs of changing, then they will be committed to complying with tax regulations. This theory thus indicates that education on general tax knowledge and convenience of tax compliance has a positive influence on committed tax compliance.

The extended parallel process model (EPPM) establishes a relationship between tax education and capitulative tax compliance. The model which was proposed by Witte (1994) tries to predict the manner in which people would react when they are confronted with fear provoking stimuli. Messages which are fear-appealing have been effective in behavioural change since they draw attention to the risk(s) a person faces for performing or not performing a particular action (Murray-Johnson et al., 2004; Bernardus et al 2020). Certain persuasive strategies attempt to produce particular behaviour or decisions by giving information that is emotionally loaded or biased. Strategies of such sort might use urging, inducement and reasoning, and also use either rational or emotional appeals, or a combination of both appeals as the basis of their message. Also, persuasive communications usually employ “fear tactics” as a technique to boost the level of arousal of recipients and also to make them have the feeling that they are more susceptible to certain risks. It posits that, when people are given risk messages, they undertake two appraisal activities (Murray-Johnson et al., 2004).

First, they observe whether or not they stand susceptible to a recognized threat and also whether that threat is a severe threat. Secondly, if individuals think they stand susceptible to some threat which is severe and their fear level is stimulated, they become motivated to consider whether the required action could minimize that threat, the response efficacy and whether they could carry out the required action. Once they feel they are capable to act, they will suitably keep the risk under control. Several fear-provoking work-related studies have tested the EPPM. This includes gun safety (Roberto et al., 2000), tractor safety (Witte, 1993), loss of hearing amongst occupational groups, for instance, coal miners (Murray-Johnson et al., 2004) or landscape farmers and workers (Smith et al., 2008), as well as pandemics amongst workers (Barnett et al., 2010). Witte and Allen’s (2000) meta-analysis of the EPPM indicated that usually, threats serve as an effective stratagem in a number of situations. This theory may also be applicable as a theoretical justification for the study: Influence of tax education on the tax compliance behaviour of taxpayers since its proponents’ touch on how fear appeal influences the behaviour of individuals (Witte, 1993). Thus, it helps understand how tax education on the consequences of tax non-compliance might affect the attitude towards tax compliance amongst taxpayers.

4. Empirical literature review and hypothesis development

4.1. Tax education and committed tax compliance

Committed tax compliance occurs when people choose to comply willingly when they are faced with a tax bill (McBarnet, 2011). The researcher is of the view that committed tax compliance is “when taxpayers are willing to pay taxes with no complaint”. A number of prior studies also sought to ascertain the relationship between tax education and committed tax compliance. Among those studies is the study of Machogu and Amayi (2013) which focused on ascertaining the influence

taxpayer education has on voluntary tax compliance amongst small and medium enterprises in the Mwanza City of Tanzania. The study specifically establishes the degree of tax education amongst the SMEs, the degree of voluntary tax compliance with the SMEs as well as how taxpayer education influences the degree of voluntary tax compliance, amongst entrepreneurs in the Mwanza City of Tanzania. Machogu and Amayi (2013) recommended that taxation should be taught in the levels of education with the aim of fostering voluntary compliance with tax. This is a comprehensive study as it considers data from both the taxpayers and the tax authorities. However, the methodology and analysis are too simplistic. The findings are mere opinions and analysis are quite subjective. Although the focus of this study looks at tax education and compliance similar to Machogu and Amayi (2013), higher-order analysis with scientific tools is used to make the findings and conclusions more objective.

In addition, Olowookere and Fasina (2013) recommended that tax education be offered to all students at all educational levels. Although Olowookere and Fasina's (2013) research used real taxpayers' behavioural data, it suffers from an inappropriate measure of a relationship. The use of ANOVA is appropriate when one is to investigate the associations or association between nominal and ratio/scale variables. Furthermore, the study conducted by Brainyyah and Rusydi (2013) discovered that tax complexity, tax knowledge and perceived fairness of tax simultaneously affect the compliance decision of taxpayers so as to fulfil their tax obligations. Whereas partial test indicated that tax complexity and tax fairness both influence tax compliance amongst Malang's SME taxpayers, the tax knowledge did not show any significant impact on compliance with tax laws. This study used appropriate methodology in establishing the relationship through multiple regression. Therefore, the present study borrows the methodology in its analysis for comparative analysis. The fact that the real estate industry is among the fastest developing businesses of the Kenyan economy, but yet, the tax authority having to deal with the continual decline in the collection of taxes from the sector for a number of years prompted Osebe (2013) to investigate how tax compliance is affected by certain factors. The findings of the research revealed that the cost of compliance had a negative influence on the level of tax compliance. On the other hand, tax knowledge and tax education had a positive influence on the tax compliance level amongst investors in the real estate business. Osebe's (2013) research was more robust and served as empirical evidence to compare with the ultimate results of the study. However, the scope of the study was limited to only the real estate and may be difficult to transfer the implications to other sectors. The present study seeks to extend this study by including taxpayers from different sectors.

In addition, Mengere (2014) evaluated the education of taxpayers as being a basic strategy for the achievement of voluntary compliance with PAYE tax on the part of the taxpayers and found that adequate knowledge about issues of tax existed amongst the financial managers and owners of the businesses. It was also found that "Pay as you earn" tax education actually has an impact on PAYE voluntary tax compliance. Mengere (2014) then concluded that government, as well as other stakeholders, must work hand-in-hand to minimize the cost of compliance and the complexity of PAYE tax so as to enhance tax compliance. In a study on the tax compliance determinants in Zimbabwean SMEs, Maseko et al. (2014) found that SMEs are faced with different conditions of business as compared to large companies, and as a result, the SMEs bear high burdens of tax compliance. It was also indicated by the results that the SME operators' perceptions about the fairness of tax, quality of tax service and the priorities of government spending hugely influenced decisions on tax compliance. Unlike the findings of many extant studies reviewed, it was discovered that tax knowledge has no correlation with the compliance with tax registration, but it showed a weak negative relationship with the compliance with filing. Additionally, Maseko et al. (2014) discovered that tax compliance has a negative relationship with costs of compliance. Thomas et al. (2019) observed that countries with a very complex tax code tend to have a larger population, a higher GDP, and higher tax rates.

To support the assertion made by Thomas et al. (2019), Musimenta and Ntim (2020) indicated that, developing countries are majorly characterised by framework complexity (as measured by

Tax guidance, Tax law enactment, Tax filing and payments, Tax audits and Tax appeals) which hinders compliance. From this backdrop, the results of the study suggest that knowledge requirements do not have a significant relationship with compliance costs. Knowledge requirements are best suited in explaining the internal costs of compliance than external costs. Musimenta and Ntim (2020) further opined that taxpayers have sufficient tax knowledge to enable them to comply with taxes but that does not rule out the fact that taxpayers still incur the cost of complying. The forgoing review leads to the development of the first hypothesis:

Hypothesis 1: There is no significant influence of tax education on committed tax compliance of the self-employed in the Cape Coast metropolis.

4.2. Tax education and capitulative tax compliance

McBarnet (2011), explains capitulative to mean when taxpayers choose to comply unwillingly, complain but pay up, nonetheless. This study adopts the meaning of capitulative as given by McBarnet (2011). Several empirical studies have investigated the effect of tax education on capitulative tax compliance. For instance, a study was conducted in New Zealand by Tan and Luong and Ha (2011) to ascertain how tax knowledge influenced tax compliance. The study examined the links between the increases in tax knowledge and how fairness is perceived as well as the attitudes towards tax compliance using students enrolled in a course on introductory taxation in a tertiary institution in New Zealand. Contrary to prior research, the results showed that increasing tax knowledge had no significant effect on the attitudes towards tax compliance and the perceptions of tax fairness. This study did not use actual taxpayers. The study relied on only students. This might have been influenced by the propositions from the theory of planned behaviour. It has been argued that intention is not a major behaviour predictor any longer (Hagger et al., 2002; Kportorgbi, Gadzo, Gatsi, 2018; Merle et al, 2019). The present study, therefore, refines this study by incorporating real behavioral measures rather than mere intention. The declined efforts of revenue collection in Uganda in the midst of a taxpayer atmosphere typified by a poor tax culture of compliance, low tax knowledge levels, and the inequitable and excessively complicated laws on tax-motivated the researcher Mukasa (2011) to study the links between tax knowledge, tax compliance, and perceptions of tax fairness of SMEs in Uganda. Both qualitative (explanatory and analytical) and quantitative (inferential and descriptive) research approaches were adopted. The study focused on tax registered SMEs inside the Kampala District's Central Division who formed the study population.

The study found out that a causative relationship existed between tax knowledge, perception of tax fairness, and tax compliance. It was also discovered that tax compliance has a positive significant correlation with tax knowledge. In a similar vein, tax compliance did have a significant and positive correlation with perceived fairness of tax. Nonetheless, a weak relationship was found between perceived fairness of tax and tax knowledge. The author opined that if taxpayers' perceptions of tax fairness as well as tax knowledge are positively improved, it will result in enhanced attitudes towards tax compliance. It was thus recommended by Mukasa (2011) that a great deal of emphasis must be placed on the spreading of concrete, technical tax knowledge in the course of leading tax education. Also, the government must improve the accountability and provision of its service so that taxpayers will perceive a reasonable and just exchange with the government. This study is similar to the present study as it also uses real taxpayers. Therefore, the present study borrows the research design from this study in its methodology. However, this study suffers technical methodological flaws as it uses correlation to measure relationships. Correlation in fact measures associations between or among variables. For instance, if there is a positive correlation between "A and B" does not mean "A" causes "B" or "B" causes "A". The appropriate method to establish a relationship is regression. Therefore, the present study revises the methodological errors to ascertain robust results to conclude. Hence the second hypothesis is developed as:

Hypothesis 2: There is no significant effect of tax education on capitulative tax compliance of the self-employed in the Cape Coast metropolis.

5. Research design

The cross-sectional survey and correlational design were employed in collecting, analysing and interpreting the data. The choice of cross-sectional survey design was influenced by the aim of the study which is to ascertain the effect of tax education on both committed and capitulative tax compliance by taking a cross-section of self-employed taxpayers in Ghana in 2020. In addition, the cross-sectional survey design allows for the collection of large amounts of data from the population in a highly economical way while the characteristics of variables being measured would not change much due to the short period of data collection (Creswell & Creswell, 2018). Correlational research involves observing two variables to establish a statistically corresponding relationship between them (Leedy & Ormrod, 2015; Gadzo et al., 2019). This was chosen because the study seeks to establish a statistical corresponding relationship between tax education and committed tax compliance as well as capitulative tax compliance. The total self-employed population of this metropolis is 60,330 (PHC, 2010). The self-employed without employee's category of this population on which this study is based is about 28,355 (PHC, 2010). A sample size of 400 respondents is generated from this population using Yamane's (1967) model.

Yamane's sampling size determination model is presented as $A = \frac{k}{[1+(ke^2)]}$

Where: **A** is the sample size, **k** is the population, **e** is the error limit (0.05 on the basis of 95% confidence level) Substituting the data on these variables in the study, the sample size is determined as:

$$A = \frac{28,355}{[1+(28,355(0.05)^2)]}$$

$$A = \frac{28,355}{[70.89]} = 399.99 \text{ or approximately } 400$$

Therefore, using a population of approximately 28,355 self-employed without employees and apprentices with an error limit of 5%, a sample size of 400 is considered adequate as computed above. To give an equal chance of selecting equal number of respondents from the communities within the Cape coast municipality, a rotary method. A rotary method of sampling was used as it gives equal chances of selection to the entire sampled population (Musimenta & Ntim, 2020).

5.1. Study area

The study area covers the entire Cape Coast Metropolis. Cape Coast is currently the regional capital of the Central Region of Ghana and forms part of the Cape Coast Metropolitan Assembly (CCMA). The Cape Coast Metropolitan Assembly (CCMA) is one of the seventeen (17) political and administrative districts in the Central Region of Ghana. The Metropolis shares a common boundary to the south with the Gulf of Guinea, west with the Komenda-Edina-Eguafo-Abrem Municipal Area (at Iture Bridge), east with the Abura-Asebu-Kwamankese District and to the north with the Twifo-Hemang-Lower Denkyira District. The Metropolis occupies an area of approximately 122 square kilometres (12,200 ha.). The southernmost point is the Cape Coast beach. The northern and furthest point is at Brabedze and is about 17 kilometres from the Cape Coast Township. According to the 2010 Population and Housing Census conducted by the Ghana Statistical Service (GSS), the Metropolis has a total population of 169,894 dominated by females. Out of the total population, 87,084 are females and 82,810 are males (PHC, 2010). The major economic activities that the people of the metropolis engage in include trading and farming. The choice of Cape Coast for the paper is because of the low tax revenues generated from the metropolis ("GRA," 2019). Cape Coast has a large informal sector made up of the self-employed. The self-employed account for a major part of this non-compliance. Forty-seven (47) percent of these self-employed are without employees. The study is conducted on the self-employed without employees. The reasons that accounted for the choice of this self-employed without

employees are self-employed without employees carried out large business activities in the metropolis, however, no type of research has been conducted in this area and the self-employed are prone to tax non-compliance in Ghana (Flynn, 2003).

5.2. Data collection instrument and measurements

Data were collected from respondents using a structured questionnaire with close-ended questions. The use of questionnaire appears to be one of the most pertinent instruments used to answer research questions. It represents a comparatively cheap means of collecting information, and normally provides a rapid turn-around time (Remenyi, 2003). The first step in planning a questionnaire is to define and describe the phenomenon distinctly to identify the construct to be measured (Remenyi, 2003, Punch, 2009). Respondents are provided with elaborate instructions as to how the questionnaires are to be completed and returned. The principle behind providing clear instructions and ensuring the confidentiality of data is since this significantly declines the likelihood of getting biased responses (Sekaran, 2003).

The questions were affixed on a six-point Likert scale ranging from Not at all (1) to Very high (6), allowing the respondent to register the degree of compliance. Regarding operationalisation of the study variables, tax education was operationalized by general tax knowledge, fear-appealing education, education on the convenience of tax compliance, education on the cost of tax compliance, and education of tax compliance (Machogu & Amayi, 2013; Mukasa, 2011; Musimenta et al., 2017; Olowookere & Fasina, 2013; Tusubira & Nkote, 2013). Committed compliance was measured by legal compliance without delay, self-assessment of tax obligation and payment of tax obligation without delay (McBarnet, 2011; Machogu & Amayi, 2013; Olowookere & Fasina, 2013). Capitulative compliance was measured through the payment of tax obligations reluctantly and payment of your tax obligations reluctantly (Brainyyah & Rusydi, 2013; Mukasa, 2011; Osebe, 2013).

5.3. Data management

The reliability test was used to examine the reliability of the study variables, instruments and the questions used to measure these variables. The test was based on the Cronbach Alpha. This is widely used and considered as one of the most effective measures of reliability (Pallant, 2005). From the analysis, the overall score for the Cronbach Alpha are 0.796, 0.762 and 0.710 for tax education, committed tax compliance and capitulative tax compliance respectively. Although there is no generally agreed score for determining the extent of reliability, some experts have argued that approximately 0.70 is a relatively high-reliability score. Therefore, the results from the study show that the questionnaire issued to the sampled respondents were more reliable to measure tax education and tax compliance among the self-employed in the Cape Coast metropolis.

5.4. Model parameters

In the review of literature, it was established that there is a theoretical relationship between the variables in the hypotheses. Hence this study adapted the model by Musimenta and Ntim (2020) by utilising the hierarchical regression model in investigating the contribution of tax education on both committed and capitulative tax compliance while controlling for the age of business, business type, source of finance and size of the business. The hierarchical regression is deemed to be appropriate and not the stepwise regression because empirical literature (Adrian, 2017; Field, 2009; Keith, 2015; Musimenta & Ntim, 2020; Turkson & Otchey, 2015; Bringula et al, 2018) suggests that it bests fit studies that focus on establishing the contribution of any independent variables to the variances in the dependent variable which is the intention of the current study. Specifically, the models below were tested in line with the hypothesis developed for the study. The use of the hierarchical regression useful because it helps in evaluating the contributions of committed, capitulative and convenience of tax compliance above and beyond previously entered predictors, as a means of statistical control, and for examining incremental validity.

Hypothesis 1: There is no significant influence of tax education on committed tax compliance of the self-employed in the Cape Coast metropolis.

The development of the model starts from the empirically (Machogu & Amayi, 2013; Mukasa, 2011; Musimenta et al., 2017; Musimenta & Ntim, 2020; Olowookere & Fasina, 2013; Tusubira & Nkote, 2013) established influences of committed tax compliance which are the age of the business, the source of finance of the business, the size in terms of number of workers of the self-employed and the business type representing model 1. The tax education variable, Fear-appealing Messages and Convenience of Compliance are then introduced in models 2, 3 and 4 respectively to establish the contribution of any of them to the variances in the dependent variable.

Model 1

$$Coc_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + e_t$$

Model 2

$$Coc_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + e_t$$

Model 3

$$Coc_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + \beta_6 FAM + e_t$$

Model 4

$$Coc_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + \beta_6 FAM + \beta_7 COC + e_t$$

Hypothesis 2: There is no significant effect of tax education on capitulative tax compliance of the self-employed in the Cape Coast metropolis.

The development of the model starts from the empirically (Machogu & Amayi, 2013; Mukasa, 2011; Musimenta et al., 2017; Musimenta & Ntim, 2020; Olowookere & Fasina, 2013; Tusubira & Nkote, 2013) established influences of capitulative tax compliance which are the age of the business, the source of finance of the business, the size in terms of number of workers of the self-employed and the business type representing model 1. The tax education variable, Fear-appealing Messages and Convenience of Compliance are then introduced in models 2, 3 and 4 respectively to establish the contribution of any them to the variances in the dependent variable.

Model 1

$$Cac_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + e_t$$

Model 2

$$Cac_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + e_t$$

Model 3

$$Cac_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + \beta_6 FAM + e_t$$

Model 4

$$Cac_t = \alpha_i + \beta_1 AG + \beta_2 SR + \beta_3 SZ + \beta_4 BT + \beta_5 GTK + \beta_6 FAM + \beta_7 COC + e_t$$

Where

Coc_t connotes Committed Tax Compliance.

Cac_t connotes Capitulative Tax Compliance;

α_i connotes intercept

β connotes gradient

AG connotes the operational period of the business since its inception

SR connotes sources of finance

SZ connotes the number of employees

BT connotes the business type

GTK connotes General Tax Knowledge.

FAM connotes Fear-appealing Messages.

COC connotes Convenience of Compliance.

e_t represents the error term.

6. Empirical results and discussion

This section presents the data analysis of the study. The results are presented in tables and detailed analysis are made before and after the various relevant tables.

6.1. Descriptive results

This section presents the background and descriptive statistics of the data. [Table 1](#) provides a summary of the study variables while [Table 2](#) shows the scale reliability of the study variables. As shown in [Table 3](#), males were the dominant category representing 51.5%, with 48.5% been females. The dominance of male stemmed from the fact that men are considered family heads and they must work to cater for the family as acclaimed by Ghanaian culture. The informal sector where the self-employed operates is akin to the Ghanaian culture. The culture places the responsibility of income stability and welfare of the family members in the hands of men. Therefore, male dominance is not surprising. Regarding the age, 18.3 % of them fall within the age of 18 to 30, 31 to 43 (30.3%), 44 to 56 (37.3%), 57 and above (14.1%). From the age distribution, it is evident that the age range of 44 to 56 presents the highest opportunity for the self-employed. This can be related to the fact that it is within that bracket that individuals might have formally worked and gathered enough experience and resources to support their self-employed ventures. It is also revealing that only a few people within the retiring age (14.1%) go into self-employment within the Cape Coast metropolis.

In addition, on the issue of academic attainment, 20.8 % of respondents had attained tertiary level qualifications, while 39.8 % had secondary level qualifications, 30.3% have attained JHS or middle level qualification and 9.3% have no formal education. To expand and critically examine the results, 90.7% of the self-employed are formally educated while only 9.3% have no formal education. Furthermore, the results from [Table 3](#) indicate that majority of the self-employed (55.5%) within Cape Coast metropolis are married. The table specifically shows that under the analysis of the marital status, 20.5% are single, 55.5% are married, 16.8% are divorced and 7.2% are widows and widowers. Again, the table shows the statistical analysis of business activities or object of business of the respondents. From the analysis 4.5% of the respondents are engaged in crop farming, 10.8% are food farmers, animal farming constitutes 5.5%, 5% are in poultry or aquaculture farming, 12% are into general trading while 62.2 % are also into other forms of business activities. Again, from [Table 3](#), most of the businesses established by the self-employed are over 6 years old. This should lead to higher tax compliance because of their longevity. Finally, it is established that most of the self-employed are financed by both debt and equity capital representing 72.5%.

Table 1. Summary of study variables, sources of data and measurement

| Variables | Definition | Measurements |
|---------------------------|---|--------------|
| Committed Compliance | When taxpayers are willing to pay taxes with no complaint. | Likert Scale |
| Capitulative Compliance | When taxpayers choose to comply unwillingly, complain but pay up nonetheless when faced with tax bill | Likert Scale |
| General Tax Knowledge | Awareness of tax legislation and other tax related information | Likert Scale |
| Fear Appealing Messages | These are messages which have the effect of provoking fear in taxpayers. For example, threat of imprisonment, fines, closure of business, etc. | Likert Scale |
| Convenience of Compliance | The ease/convenience with which a taxpayer can pay his/her tax. This includes accessing the tax office, filling the necessary returns, and making payments. | Likert Scale |

Source: *Field survey, (2020)*

Table 2. Scale reliability of study variables

| Study variables | Number of items | Cronbach Alpha |
|-----------------------------|-----------------|----------------|
| Tax education | 9 | .796 |
| Committed tax compliance | 10 | .762 |
| Capitulative tax compliance | 12 | .710 |

Source: *Field Survey, (2020)*

Table 4 presents the results of the descriptive statistics of the variables. The Table specifically captures the mean, t-test statistic and median of the various variables. A six-point Likert scale was employed in this study. Two-tailed t-test is employed to determine whether or not mean scale responses are significantly different from zero (0). Regarding the general tax knowledge by the respondents, the mean of the self-employed is 3.59 (median = 3.67). The t-test statistic of 1.617 shows that the mean is not statistically different from the point of indifference, the mid-point. This means that the self-employed within the Cape Coast metropolis were indifferent on their level of general tax education. Thus, they could not establish whether their level of general tax education is high or low. Again, the mean score on knowledge of fear-appealing messages is 4.86 (median = 5.00). The t-test statistic (40.91) associated with the mean of 4.89 reveals that the self-employed knowledge of fear-appealing messages in relation to tax education in Ghana is high.

Furthermore, the table provides the descriptive statistics of the level of education on tax convenience. The table indicates that the mean of respondents on this content of education is 4.70 (median = 5.00). The t-test statistic (25.79) associated with the mean mark of 4.70 means that the level of tax education on tax convenience among the self-employed in the Cape Coast metropolis is high. With reference to tax compliance, the descriptive analysis capture committed compliance, capitulative compliance, creative compliance and overall tax compliance. The level of committed compliance among the self-employed within the study frame as measured by the mean mark is 4.43 (median = 5.00). The t-test score (15.64) associated with the mean score shows

Table 3. Descriptive statistic of background information

| | Variable | Frequency | Percentage (%) |
|--------------------------|----------------------|-----------|----------------|
| Gender of the respondent | Male | 206 | 51.5 |
| | Female | 194 | 48.5 |
| | Total | 400 | 100.0 |
| Age of the respondent | 18–30 | 73 | 18.3 |
| | 31–43 | 121 | 30.3 |
| | 44–56 | 149 | 37.3 |
| | 57 and above | 57 | 14.1 |
| | Total | 400 | 100.0 |
| Level of education | No formal education | 37 | 9.3 |
| | J.H.S/Middle School | 121 | 30.3 |
| | S.H.S/Technical | 129 | 39.8 |
| | Tertiary | 83 | 20.8 |
| | Total | 400 | 100.0 |
| Marital status | Single | 82 | 20.5 |
| | Married | 222 | 55.5 |
| | Divorced | 67 | 16.8 |
| | Widow/Widower | 29 | 7.2 |
| | Total | 400 | 100.0 |
| Source of finance | Equity | 50 | 12.5 |
| | Debts | 40 | 10 |
| | Both Debt and Equity | 290 | 72.5 |
| | Grant | 20 | 5 |
| | Total | 400 | 400 |
| Business Type | Crop farming | 18 | 4.5 |
| | Food Marketing | 43 | 10.8 |
| | Animal farming | 20 | 5.0 |
| | Poultry/Aquaculture | 22 | 5.5 |
| | General trading | 48 | 12.0 |
| | Others | 249 | 62.2 |
| | Total | 400 | 100.0 |
| Age of organisation | 0–5 years | 83 | 20.75 |
| | 6–10 years | 159 | 39.75 |
| | Over 10 years | 158 | 39.50 |
| | Total | 400 | 100.0 |

Source: *Field Survey*, (2020)

committed tax compliance. Thus, the self-employed do not complain much in complying with tax directives.

Additionally, the table shows statistics for capitulative compliance. As explained in the literature review, this shows obedience to the payment of tax. The respondents have a mean of 2.05 (median = 1.00). The level of creative compliance among the respondents is measured by the mean with the score of 1.43 (median = 1.00). The t-test score (89.32) associated with the mean score shows that creative compliance among the self-employed in Cape Coast is relatively low. The analysis of the overall tax compliance among the respondents is also captured on [Table 4](#). Regarding the overall tax compliance, the mean mark of the self-employed is 2.64 (median =

Table 4. Descriptive analysis of variables

| Variables | Mean | T-Stats | Median |
|-----------------------------|-------|----------|--------|
| General tax knowledge | 3.591 | 1.617 | 3.667 |
| Fear-appealing message | 4.863 | 40.91*** | 5.000 |
| Convenience of tax | 4.699 | 25.79*** | 5.000 |
| Committed tax compliance | 4.425 | 15.64*** | 5.000 |
| Capitulative tax compliance | 2.050 | 43.32*** | 1.000 |

***Denotes significant at 1% level of significance

Source: Field Survey, (2020)

2.67). The t-test statistic (2.64) associated with the mean mark shows that the overall tax compliance among the self-employed within the Cape Coast metropolis is low.

6.2. Results on the effect of tax education on committed tax compliance

Table 5 shows the contribution of the predictor variables onto the dependent variable tax compliance without the control variables. The results in Table 5 show general tax knowledge, fear-appealing messages, and convenience of compliance. This is to eliminate the bias which may originate from the control variables, Table 6 shows hierarchical regression results in 4 models; the first model (Model 1) includes only control variables. The models 2, 3 & 4 show each predictor being introduced in succession to determine the contribution. Tax education for the purpose of this study was classified into three, namely, general tax knowledge, fear-appealing messages, and convenience of tax compliance. The interest of this study is to find the different effects of these components of tax education on committed tax compliance.

The model for this analysis therefore contains the three categories of tax education as predictors and committed tax compliance as a dependent variable. As depicted in Table 5, all the three tax education categories have unique contributions to explaining the level of committed tax compliance. From Table 5, F-value of 87.991 is statistically significant at the 1 per cent level. The P-value of F-statistic is specifically 0.0000 which implies that general tax knowledge, fear-appealing messages and convenience of compliance collectively influence committed tax compliance. The Farrar-Glauber Multicollinearity Chi2-test (Chi2 Test = 71.7228 P-Value > Chi2 (1) 0.0000) shows that there is no multicollinearity among the explanatory variables used in this analysis. The elements of tax education have a significant influence on the level of committed tax compliance among the self-employed within the Cape Coast metropolis. From Table 5, GTK is the most influencing tax education category on the level of committed tax compliance.

Table 5. Influence of tax education on committed tax compliance

| Variable | Beta (β) | t-stats | Std. Error | P-Value | Adjusted R ² |
|--|------------------|---------|------------|-----------------------------|-------------------------|
| Constant | 1.247 | 2.729 | .457 | .004 | .573 |
| GTK | .0370 | 4.570 | .081 | .000 | |
| FAM | -.256 | -1.893 | .135 | .161 | |
| COC | .312 | 3.213 | .097 | .002 | |
| Sums of Square of regression (653.077) | | | | F-stat 87.991 (0.000) | |
| Total sums of square (1139.750) | | | | Fgtest: Chi2 Test = 71.7228 | |
| P-value >chi2(1) | | | | | |

Source: Field Survey, (2020)

Where: GTK is the general tax knowledge; FAM is fear-appealing messages and COC is the convenience of compliance

The GTK represents general tax knowledge. It is evident from the table that there is a positive relationship between general tax knowledge and committed tax compliance. Similarly, the level of significance of this category is less than one (1) percent. Specifically, it has a coefficient of 0.370 with a p-value of 0.000. This implies that the general tax knowledge has a significant relationship with tax compliance among the respondents within the Cape Coast metropolis. It is therefore worthwhile to include general tax knowledge in planning tax education to enhance committed tax compliance. The convenience of tax compliance, as shown in Table 5, also shows significant effect on committed tax compliance. The convenience of tax compliance has a significant t-statistic coefficient. The sign on the coefficient is positive showing a positive relationship between convenience of tax compliance and committed tax compliance.

Conversely, the analysis from Table 5 indicates that fear-appealing messages in tax education as represented by “FAM” has no significant effect on the level of committed tax compliance among the self-employed in the Cape Coast metropolis. This means that the use of threats or undue influence to influence the level of committed tax compliance may not be effective as per the results of the study. The positive contribution of general tax education and convenience of tax compliance to committed tax compliance meets the study expectations. The findings are not only consistent with the study expectations but also confirm theoretical positions and it is further proved under the discussion section. From Table 6, Model 1 reports only control variables and the results show that apart from the size of the self-employed business, all the other control variables explain significant variance in committed tax compliance. Results in model 2 indicates that general tax education is a significant predictor of committed tax compliance (standardized $\beta = 0.370$, $p < 0.01$). In model 3 we introduce fear-appealing message, and it is a significant predictor (standardized $\beta = -0.018$, $p < 0.05$) and model 4 shows convenience of compliance (standardized $\beta = 0.006$, $p < 0.05$) as significant predictors of committed tax compliance. Fear-appealing messages and business type are not significant in the 4th model.

Table 6. Influence of tax education and other controlling variables on committed tax compliance

| | (1) | (2) | (3) | (4) |
|-------------------|----------|----------|----------|---------|
| Constant | 3.817* | 3.914** | 5.868** | 5.554** |
| AG | 0.245** | 0.287** | 0.120 | 0.116 |
| SR | 0.020** | 0.019** | 0.020** | 0.018** |
| SZ | 0.057 | 0.066 | 0.078* | 0.072* |
| BT | -0.041** | -0.041** | -0.042** | -0.045 |
| GTK | | 0.370** | 0.310*** | 0.211** |
| FAM | | | -0.018* | -0.019 |
| COC | | | | 0.006* |
| R Square | 0.070 | 0.133 | 0.180 | 0.270 |
| Adjusted R square | 0.036 | 0.089 | 0.139 | 0.236 |
| Model F | 2.191 | 3.679 | 4.661 | 6.700 |
| Durbin Watson | | | | 2.497 |

Dependent variable: Committed tax compliance

** Significant at the 0.01 level

* Significant at the 0.05 level

Source: Primary data, (2020)

General tax knowledge requirements defuse the established relationship between fear-appealing message and committed tax compliance. This means that when taxpayers are knowledgeable about taxes and know how to file returns and pay them, then fear-appealing messages sent to taxpayers become meaningless in the committed tax compliance model. Model 4 presents the combined effect of all the predictor variables on the outcome variable, and the results show that general tax knowledge is the most significant predictor variable of committed tax compliance (standardized $\beta = 0.211^{**}$), followed by the source of finance of the self-employed taxpayer. Overall, the model explains variance of 23.6% in tax compliance.

6.3. Result on the effect of tax education on capitulative tax compliance

Capitulative tax compliance measures the extent to which a taxpayer obeys but pays tax reluctantly. The statistical and inferential analysis and discussions between the tax education components, as the predictors, and capitulative tax compliance, as dependent variable, are presented in Table 7. The model presented in Table 7 indicates that all the predictors contribute significantly to explaining the extent of capitulative tax compliance. Similarly, the F-statistic is significant, the F-statistic as presented in Table 7 is 98.476 with a significant level of 0.000. A p-value of less than one percent, 5 percent or 10 percent is significant. In the case of this study, the p-value is less than 1 percent confidence level. The Farrar-Glauber Multicollinearity Chi2-test (Chi2 Test = 29.2791 P-Value > Chi2 (1) 0.0000) shows that there is no multicollinearity among the explanatory variables used in this analysis. Table 6 shows that all the variables have significant coefficients. This means that all the predictors significantly affect the level of capitulative tax compliance among the self-employed within the Cape Coast metropolis. As explained under the first objective, the GTK, FAM and COC in the table are general tax knowledge, fear-appealing messages, and convenience of compliance respectively. The inferential discussions in this study are primarily on explaining the norms of the statistics of the variables, the meanings and implications, their relationships with the response or dependent variables and how they are situated in theories and other empirical comparisons.

Table 7 provides statistics which explain the extent and nature of the relationship between general tax knowledge (GTK) and capitulative tax compliance. The coefficient of the causal relationship between general tax knowledge and capitulative tax compliance is negative. This means when the self-employed under consideration are educated on general tax issues, it will enhance voluntary tax compliance and reduce reluctant compliance. The statistical coefficient of general tax education is -0.176 with a p-value of 0.020. This implies that the coefficient is significant to explain the effect of general tax knowledge on capitulative tax compliance. The t-statistic for this variable as shown from the table is 2.339. This statistic is absolutely greater than 2. Therefore, with reference to this result, in tax education planning that purports to reduce taxpayers' reluctance to compliance, keen consideration should be given to general tax education. The table also depicts the relationship between fear-appealing messages as indicated by FAM. The table shows a coefficient of 0.213 with a significant level of 0.002. This means that the coefficient

Table 7. Influence of tax education on capitulative tax compliance

| Variable | Beta (β) | t-stats | Std. Error | P-Value | Adjusted R ² |
|---|------------------|---------|---------------------------------|---------|-------------------------|
| Constant | .665 | 2.841 | .234 | .080 | .652 |
| GTK | -.176 | -2.339 | .075 | .020 | |
| FAM | .213 | 3.185 | .067 | .002 | |
| COC | -.296 | -3.264 | .091 | .001 | |
| Sums of Square of regression (690.468) | | | F-stat 98.476 (0.000) | | |
| F test: Chi ² Test = 29.2791 | | | Total sums of square (1059.000) | | |
| P-value > chi2 (1) | | | | | |

Source: Field survey, (2020)

is significant at less than 1 percent significance level. This suggests a positive relationship between fear-appealing messages and capitulative tax compliance. Specifically, the coefficient explains that a percentage increase in fear-appealing tax education causes about 0.213 compliance of tax by the self-employed but doing so reluctantly. Simply put, should tax education focus on fear-appealing messages or threats, the taxpayers may comply not committedly but rather unwillingly. The above-expected change in behaviour resulting from the fear-appealing messages in tax education is quite rational as humans require free will to act and take decisions and therefore will not be pleased if they are compelled to act by whatever means. The t-statistic for fear-appealing messages shows that the relationship is relevant.

The t-statistic is greater than 2 in absolute terms. The table provides t-statistic of 3.185. Similar to the relationship established by the general tax knowledge, the convenience of compliance also has a negative effect on capitulative tax compliance. From Table 7, the actual coefficient value for the convenience of tax compliance education is negative. The coefficient statistic is -0.296 with a p-value of 0.001. This means that hypothesis 2 is rejected, and the study concludes a significant negative causal relationship between the study variables. The negative coefficient of 0.296 implies that when the taxpayers' (self-employed) knowledge about tax convenience is strengthened by one (1) percent, it will lead to 0.296 falls in the negative behaviour towards tax obligation. The relevance of the model and the causal relationship can be observed from the t-statistics. The t-statistics from the table shows the value of -3.264 . In absolute terms, this statistic is greater than 2. This implies that the established causal relationship is relevant. Having explained the statistical significance of the model presented in Table 7 and the descriptive analysis of the study variables in Table 3, comparative discussions are presented to identify the relevance of the study to the existing literature.

From Table 8, the results in model 1 which reports on only control variables show that apart from the source of finance, all the other control variables significantly influence capitulative tax compliance. Results in models 2 indicate that general tax education is a significant predictor of capitulative tax compliance (standardized $\beta = -0.082$, $p < 0.01$). In model 3 we introduce fear-appealing message, and it is a significant predictor (standardized $\beta = 0.213$, $p < 0.01$) and model 4 shows that convenience of compliance (standardized $\beta = -0.811$, $p < 0.01$) as significant predictors of capitulative tax compliance. Age of the business and the source of finance are not significant in the 4th model. General tax knowledge and fear-appealing messages were all significant at 1%. This

Table 8. Influence of tax education and other controlling variables on capitulative tax compliance

| | (1) | (2) | (4) | (4) |
|--------------------|----------|----------|----------|----------|
| Constant | 5.092** | 4.850** | 4.860** | 4.977** |
| AG | -0.027** | -0.028** | -0.024* | -0.025 |
| SR | 0.067 | 0.067 | 0.069* | 0.072 |
| SZ | 0.245** | 0.246** | 0.268* | 0.149* |
| BT | 0.021** | 0.022** | 0.020** | 0.019** |
| GTK | | -0.082** | -0.085** | -0.101** |
| FAM | | | 0.213** | 0.211** |
| COC | | | | -0.811** |
| R Square | 0.6201 | 0.6543 | 0.6987 | 0.7030 |
| Adjusted R square | 0.5487 | 0.5457 | 0.5109 | 0.6628 |
| F-stat | 1.5478 | 2.6570 | 3.1875 | 17.4781 |
| Durbin-Watson stat | | | | 2.8911 |

**Significant at the 0.01 level

*Significant at the 0.05 level

Source: Primary data, (2020)

means that when self-employed taxpayers are knowledgeable about taxes and fear-appealing messages are sent to them, they comply to tax regulations. Model 4 presents the combined effect of all the predictor variables on the outcome variable, and the results show that convenience of compliance is the most significant predictor variable of capitulative tax compliance (standardized $\beta = -0.811^{**}$), followed by the source of finance of the self-employed taxpayer. Overall, the model explains a variance of 66.28% in tax compliance.

6.4. Discussion

6.4.1. Effect of tax education on committed tax compliance

From the result, there is a tax education positively influence tax compliance hence hypothesis 1 which stated that “*There is no significant influence of tax education on committed tax compliance of the self-employed in the Cape Coast metropolis*” is rejected because there is a significant positive relationship between tax education and committed tax compliance. This result is consistent with the theoretical position of the trans-theoretical model of change (TTM) which indicated a possible positive relationship between tax education and committed tax compliance when the respondents are within the contemplation and preparatory stages where general information about the tax is needed for a positive attitude towards taxation. With regards to the use of fear-appealing messages, results showed that there is no significant effect of fear-appealing messages on the level of committed tax compliance which contradicts the preposition of the extended parallel process model (EPPM). This implies that, fear-appealing messages do not automatically change behaviour positively and that the consequence of behaviour changes is determined by three factors, namely susceptibility to the threat, the severity of the threat, and the possibility to control the associated risks. This is particularly the situation in Ghana because an individual can easily have a way around these fear-appealing messages (Tsen & Yeboah, 2007). It is therefore not surprising that fear-appealing messages do not have a significant effect on committed tax compliance.

The established relationship between tax education and committed tax compliance in this study is further supported by empirical studies such as Machogu and Amayi (2013) which indicated that tax behaviour could be enhanced if taxpayers understand tax laws better. Although the results from this study have shown consistency with some empirical literature, it repudiates other empirical shreds of evidence. For instance, the findings repudiates the results of the study conducted by Brainyiah and Rusydi (2013) which discovered that general tax knowledge did not show any significant impact on tax compliance. Furthermore, unlike the findings in this study, Osebe (2013) empirically found that penalties and fines (fear-appealing messages) had a positive impact on the tax compliance level. Similarly, Maseko et al. (2014) discovered that tax knowledge has no correlation with compliance with tax registration, but it showed a weak negative relationship with compliance with filing. Musimenta and Ntim (2020) concluded that to enhance commitment to tax compliance among SMEs, the concentration should be on providing SMEs with unique tax incentives rather than mere tax education. Aside from the above comparative explanations to the results of the study, the meaning and soundness of the findings can be deduced logically. For instance, the insignificant effect of fear-appealing messages to committed tax compliance is logically valid. Committed tax compliance, according to Musimenta et al. (2017) means a willingness on the part of taxpayers to pay taxes with no complaint. It is indisputable that no individual will be committed to act or behave in a particular manner through threat or undue influence or coercion. Therefore, fear-appealing messages at best will cause taxpayers to comply with tax obligations but not willingly. Hence achieving voluntary or committed tax compliance requires a type of tax education that does not aim at frustrating or intensifying fear in taxpayers.

6.4.2. Effect of tax education on capitulative tax compliance

The statistical analysis shows that both general tax knowledge and convenience of compliance have a negative effect on capitulative tax compliance which is measured by the extent of taxpayers' unwillingness to pay tax. From this backdrop, hypothesis 2 which stated that “*There is*

no significant effect of tax education on capitulative tax compliance of the self-employed in the Cape Coast metropolis” is rejected because there is a significant negative effect of tax education on capitulative tax compliance. This shows that tax education enhances committed tax compliance and minimises the unwillingness to paying tax. On the other hand, fear-appealing messages recorded a positive effect on capitulative compliance. This is because fear or threat has the potential to cause one to act positively but not in that person’s volition. The result from the study further provides explanation to the relevance of the extended parallel process model which posits that “fear tactics” heightens the level of arousal of recipients and make them have the feeling that they are more susceptible to certain risks if they do not change or act in a required manner. The results suggest that the individual will rationally evaluate the severity of the risk and act accordingly even if unwilling (Hanum & Hasibuan, 2019; Peprah, Abdulai & Agyemang-Duah 2020).

Rationally, commitment is based on mental power decisions or volition. This cannot be achieved through the application of force or threats. It is therefore important for one to identify his audiences, their behavioural trend, and the purpose of the education prior to deciding the content of the tax education. Again, tax compliance should not always be considered holistic but rather as a concept with dimensions. A particular tax education may be relevant to a particular dimension of tax compliance as proven by the relationship between fear-appealing messages, committed tax compliance, and capitulative tax compliance. Similarly, the positive effect of fear-appealing messages on capitulative tax compliance confirms the precontemplation stage of the TTM. At the precontemplation phase, TTM postulates that individuals are not ready to change and have no interest in any sort of help. According to Alm (2018), a person in this phase is inclined to defending the existing bad habit(s) despite efforts to persuade for change and he does not deem it a problem. This means that tax authorities should not expect committed tax compliance from taxpayers within this phase. At best they may endorse capitulative compliance as shown by the findings in this study. Therefore, the findings suggest the application of both TTM propositions and EPPM’s fear tactics to boost compliance from these tax groups.

Despite the strong empirical arguments to support the relationship between fear-appealing messages and capitulative tax compliance, the negative significant causal relationship between general tax knowledge, the convenience of tax compliance, and capitulative tax compliance provide evidence to the contrary. The negative relationship suggests that with education on general tax issues and education on the convenience of tax, willingness to pay tax can be boosted without the need for “fear tactics” as suggested by the extended parallel process model. The results of the study contradict the conclusions drawn by Inasius (2019) because one’s positive compliance intention may change over time or by circumstances. The study has proven the assertion that although the intention may influence actions, it is not a good predictor of behaviour (Kportorgbi et al, 2019). Unlike Abdul-Razak (2013), the findings in this study confirm the results and conclusions drawn by Mukasa (2011) which showed a significant causative relationship between tax knowledge and willingness to pay tax. A critical evaluation of the empirical comparison and discussions shows that the subjects within a sample frame significantly influence the outcome and conclusions of the study. Similarly, theoretical arguments should be placed in a context rather than being too generic. For instance, fear tactics as posited by EPPM, may be applicable in some context but not in all situations. Generally, the objective of evaluating the influence of tax education on capitulative compliance has been achieved.

7. Summary and conclusion

It is concluded that tax education significantly affects committed tax compliance, however, the direction of the relationship depends on the content of the tax education. Specifically, it is concluded that when the level of general tax knowledge and tax convenience is high, committed tax compliance will be enhanced. Also, fear-appealing messages weaken the taxpayers’ commitment to comply with the tax. Thus, fear tactics do not improve tax commitment as claimed by some researchers. The study also reveals that the level of general tax knowledge and tax

convenience are antidotes to capitulative tax compliance and therefore correct capitulative tax compliance behaviour. Despite the positive role by these tax education contents to correct capitulative behaviour, fear-appealing messages in tax educations encourage capitulative tax compliance. In summary, tax education affects tax compliance. However, the nature of the relationship, whether positive or negative, depends on the type or the content of the tax education, the type of tax compliance to achieve, and the behaviour of the audience. Generally, tax compliance segregated into committed tax compliance, capitulative tax compliance, and source of finance has significant bearings on overall tax compliance.

Based on the observed key findings and conclusions drawn above, it is recommended that the revenue authorities in the world should make the tax laws less complex to reduce the cost of compliance and enhance tax convenience. This could be done by, distributing easy-to-read information leaflets and fliers. From the study, it is apparent that tax convenience is enhanced when the self-employed understand the tax laws. Also, regulators of the education sector in conjunction with the revenue authorities should introduce basic tax education as a compulsory course into the primary and high school curriculum to boost general tax knowledge so as to enhance tax compliance. The education may include the roles that taxes have played in our nation's history, how taxes affect people and the economy, how to file a simple tax return, and tax rights and responsibilities. Furthermore, revenue authorities can also boost tax knowledge by circulating updates on tax more frequently to improve voluntary or committed tax compliance and reduce capitulative tax compliance. From the study, general tax knowledge improves committed tax compliance and reduces the capitulative tax compliance behaviour of the self-employed. Finally, revenue authorities must be aware of the history of their taxpayers concerning their tax compliance and attitude toward tax, to identify the educational needs for them because as identified in the study, it is not all tax education campaigns that are successful for tax compliance. Some may require fear-appealing messages, others may also need general tax knowledge.

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