



# Impact of Betting Tax on Gambling Behavior and Participation in Ghana

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**Citation:** Ofori, D., Adjei, K.O.K., Osei, A., Nyarko, B. (2026). Impact of Betting Tax on Gambling Behavior and Participation in Ghana. *Journal of Gambling Issues*.

**Editor-in-Chief:** Nigel Turner, Ph.D.

**Received:** 11/26/2025  
**Accepted:** 03/13/2026  
**Published:** 06/11/2026



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**Abstract:** Ghana also has a massive business of betting, primarily among young adults (Aflakpui, 2016; Tagoe and Asante, 2023). Though Ghana eliminated the withholding tax in 2014, ten years later, under the Income Tax (Amendment) Act, 2023 (Act 1094), the country reinstated a withholding tax of 10 percent on the betting and lottery winnings (Africanews, 2023; Acquah, 2023). This paper will determine whether or not the tax is linked to the variation in betting spending and involvement of the Ghanaian bettors. With 385 survey respondents, with the help of follow-up interviews, the study estimates a multiple linear regression model on change in expenditure and a logistic regression model on change in participation. The results indicate that appreciation of betting and education have a positive association with change in expenditure, whereas an increase in income and perceived tax have a negative association with change in expenditure. Participation, income, perceived tax impact, awareness, appreciation of betting, and gender end up statistically significant as predictors. On the whole, the results indicate that the betting tax correlates with behavioural adjustment, but the impact is not evenly applied to the respondents. The research adds to the existing literature on gambling in Ghana by expanding policy discussion and getting the current responses of the bettors after the reinstatement of tax. It accordingly suggests better communication of taxes to its consumers, enhanced consumer education, moderate regulation that needs to be revenue-focused, and responsible gambling.

**Keywords:** Betting Tax, Gambling Behavior, Participation, Logistic Regression, Ghana.

## Introduction

In Ghana, betting has become an important sector where young adults and low-to-middle-income earners, in particular, have actively engaged in it (Aflakpui, 2016; Tagoe and Asante, 2023). Repealing the former 10 per cent withholding tax on betting and lottery wins (Income Tax (Amendment) Act, 2023 (Act 1094)) under the Income Tax Act was the subject of renewed discussion on whether gambling tax policy can do more than just raise revenue by also affecting gambling behaviour (Africanews, 2023; Acquah, 2023). This question is of special importance to Ghana since the groups engaged in betting the most might also be the most sensitive to the effects of change in disposable income and estimated returns.

In this paper, the relationship between the betting tax and two behavioural outcomes, changes in betting expenditure and changes in betting participation, is discussed. It is argued that a betting tax cannot just be considered a fiscal instrument, but it can also influence the perceived reward, risk, and the likelihood of bettors persisting with the betting activity. Due to this reason, the analysis is based on the integration of economic, psychological, and demographic variables with the explanation of how bettors will react following the introduction of the tax.

The research is aimed at achieving three purposes: to examine the demographics of the sampled bettors, to test the significance of betting tax in modifying betting spending and gambling behaviour, and to offer policymakers measures in relation to taxation and responsible betting in Ghana. In contrast to the previous Ghana-based researchers who mostly studied youth betting, morality, or investment behaviour (Adjei and Mensah, 2023; Ofofu and Kotey, 2020; Tagoe and Asante, 2023), this study addresses the matter that concerns behavioural reaction to taxation specifically.

## Theory Conceptual Framing and Literature Review

### *Conceptual and theoretical framework.*

This work is primarily pegged on Prospect Theory and other behavioural models of perceived-loss consumer response. According to Prospect Theory, people compare results to a reference point, and the response to losses is generally greater than that of similar gains (Kahneman and Tversky, 1979).

According to this paper, a deduction due to winnings can be realized by the bettors as a direct loss of anticipated reward, though the amount of money might seem small. The perception is one of the factors that explain why betting tax might have an impact on the expenditure and the continued participation. This framing is better than a general number of non-related theories, as it directly attributes taxation to behavioural adaptations in the face of perceived loss.

A conceptual framework also relies on tax avoidance and receptiveness to consumer price literature. It has been argued that

individuals do not like taxes as much as other non-tax expenses of equal magnitude because taxes are regarded as mandatory expenses and not optional expenses (Sussman and Olivola, 2011). This observation is significant in the current research paper, as it is likely that the impact of the betting tax can change not only the size of the amount remitted but also the perceived fairness, exposure, and individual effects of the tax by the bettors. This is the reason why this model incorporates perceived tax impact and the attitude-related variables instead of ensuring the tax is treated as a background policy change.

The empirical evidence of gambling behaviour and bet taxation is in the literature.

The extent of empirical research conducted on gambling behaviour has consistently indicated that demographic and socioeconomic factors, which include age, gender, education, and income, determine whether a person participates in gambling or abstains (Humphreys and Perez, 2010). The young men tend to be more susceptible to betting, although the intensity of this tendency depends on the environment. In Ghana, sports betting is also seen as particularly prevalent among the youth and students in the past, usually justified by entertainment, the possibility of getting easy money, and the pressure of their peers (Boateng, 2020; Glozah et al., 2019; Tagoe and Asante, 2023). Although these studies aid in setting the social profile of bettors, they do not tell much about the impacts of a particular betting tax on expenditure and participation following implementation.

The literature that is more closely related to the current study suggests that gambling behaviour can be modified by the tax policy, yet the evidence remains rather limited and situational. There has been research that increased price decreases participation or spending, whereas others have proposed that regular users will still keep on betting, but will carry out the amount or shape of their betting (Humphreys and Perez, 2010). The significant gap in the literature lies in the point that a lot of studies focus on gambling play without considering tax policy in terms of individual perceptions and behavioural reactions of bettors in a developing country context. The present research fills that gap, considering the post-introduction of the withholding tax of 10 percent on betting and lottery winnings in Ghana (Africanews, 2023; Acquah, 2023).

#### ***Model variables justification on a literature basis.***

The explanatory variables were chosen since they are not only relevant to the study objectives but can also be supported by the past literature. Demographic factors (age, gender, education, occupation, and income) are included since previous researchers demonstrate that gambling attendance and financial reactions are different among these populations (Humphreys and Perez, 2010; Glozah et al., 2019). Perceived tax impact, satisfaction with the tax, and the appreciation of betting are also components of the model since the behavioural responses to taxation are not only influenced by the economic resources but also by the interpretation of the

policy and the significance of the activity that is taxed to the individuals (Sussman and Olivola, 2011). The strategy bases the empirical model on the literature, as opposed to depicting the variables as separate decisions.

Combined, the literature suggests the model according to which shifts in expenditure and participation would not be solely responsive to the structural attributes of bettors but also conditional upon their subjective reaction to taxation. This framing reinforces the study in two aspects. First, it maintains the literature review on the literature that is directly related to behavioural change in betting under taxation. Second, it demonstrates better that the variables, hypotheses, and empirical models were based on the previous works.

### **Methodology**

The research was carried out in Ghana in the form of a survey of gamblers, and interviews served as the supporting tool in case there was a need for clarification among respondents. A total of 385 usable responses was obtained. The information gathered in the questionnaire was on the demographic traits, knowledge and familiarity with the betting tax, perceived influence of the tax, contentment, stress, enjoyment of betting, pre-tax and post-tax expenditure, and frequency modification in betting.

Two outcome variables were examined. The former was changed by percentage in expenditure, which was calculated on the expenditure categories prior to tax introduction and after it. The second one was a change in participation, which was a binary variable (1 when a respondent changed the frequency of betting and 0 when not). The independent variables included age, gender, education, occupation, income, awareness, understanding, satisfaction, perceived impact, appraisal of betting and whether the respondent had been affected by the tax.

A multiple linear regression model was estimated to determine the change in expenditure since the dependent variable was considered as the continuous percentage change. Change in participation was binary, and thus a logistic regression model was employed. The study was done in Stata. The focus on regression results as opposed to plain pairwise correlations makes the interpretation more consistent with the research goals.

### **Results**

The sample is dominated by male respondents (90.39%), and the majority of the respondents fall below the age of 35. Almost half of the sample has higher education, and the students represent the largest occupational group (40.26%). The majority of the respondents make less than GH5,000 per month. These trends are broadly aligned with previous Ghanaian literature, which indicates that betting is particularly prevalent among younger men and among the respondents who belong to rather

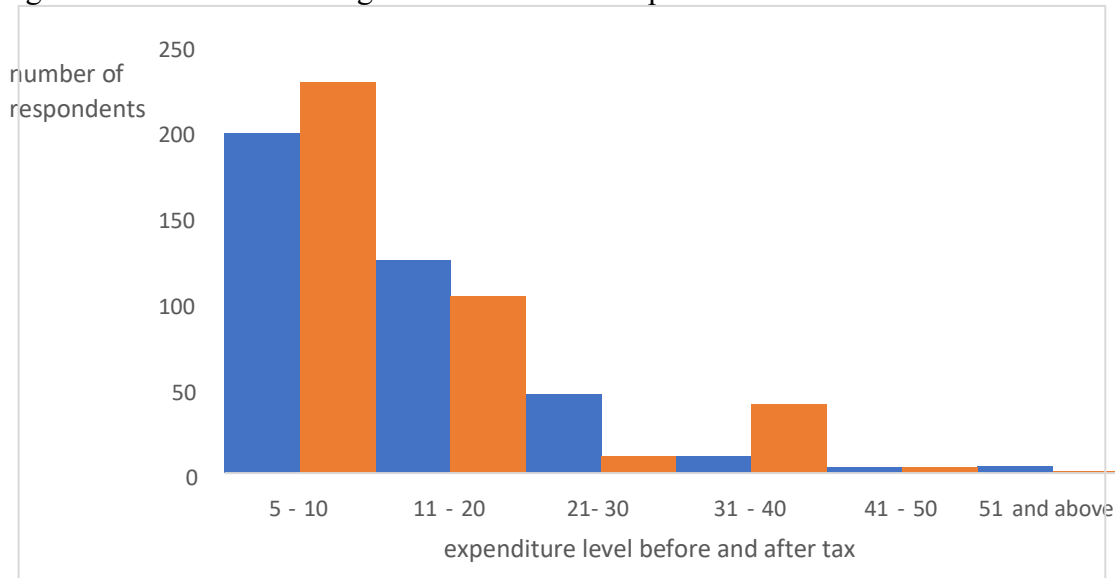
modest income groups (Boateng, 2020; Glozah et al., 2019; Tagoe and Asante, 2023).

The betting tax awareness is high (97.92%). Respondents have a negative tax opinion, with 56.10 per cent of the sample indicating a negative opinion and 28.05 per cent being neutral. The majority of the respondents are either indifferent or discontented with the tax. These descriptive tendencies indicate that the tax is very visible to bettors, but not every respondent is capable of converting the awareness into a corresponding behavioural reaction.

***Pre-tax/after-tax distribution.***

The distribution of expenditure indicates that there is a slight movement in the expenditure to spend at low levels following the tax, though it is not constant across all the groups. The two bars in Figure 4.1 are supposed to be marked as before tax and after tax to help in interpretation. Although descriptive patterns do not prove the existence of causality, the distribution is widely in line with the opinion that the tax might have tempered spending at least for part of the sample.

Figure 4.1 Bar chart showing the distribution of expenditure level before and after tax



***Regression results***

The revised manuscript is a precursor to the regression findings, with the aim of taking the findings to the research questions. The original analysis results are statistically significant and can be summarized in the following tables.

Table 1. Report of statistically significant predictors of expenditure change.

Variable	Reported coefficient	p-value	Interpretation
Appreciation of betting	7.52	0.043	Higher appreciation is associated with higher expenditure change.
Education	3.46	0.010	Higher education is associated with higher expenditure change.
High income (> GH¢4,000)	-12.96	0.042	Higher income is associated with lower expenditure change.
Affected by betting tax	-3.45	0.035	Respondents who felt affected by the tax reported lower expenditure change.

The multiple linear regression model gave an R-squared of 0.1226, which is a modest explanatory power, which is usual in behavioural survey research. Intrinsically, the most crucial aspect is that expenditure changes are associated with intrinsic appreciation of betting and taxation sensitivity. That is, betting pleasure seems to decrease the deterrent effect of the tax among a group of respondents, but being directly influenced by the tax leads to reduced spending.

Table 2. Overview of the reported statistically significant predictors of change in participation.

Variable	Reported odds ratio	p-value	Interpretation
Income: GH¢2,000–3,000	4.865	0.007	More likely to report a change in participation.
Income: GH¢3,000–4,000	6.111	0.004	More likely to report a change in participation.
Income: > GH¢4,000	5.722	0.009	More likely to report a change in participation.
Perceived impact of betting tax	7.189	<0.001	Strongly increases the likelihood of participation change.

Appreciation of betting	0.392	0.033	Higher appreciation reduces the likelihood of participation change.
Awareness	0.190	0.047	Higher awareness reduces the likelihood of participation change.
Gender	0.328	0.019	Participation change differs significantly by gender.

The logistic regression equation had a pseudo R-squared of 0.2840. Perceived tax impact is the strongest predictor and is a major boost to the possibility of a change in participation in betting. Betting appreciation makes behavioural change less likely, and this coincides with the point that certain bettors become less responsive to tax when they are deeply engaged in the activity (Kahneman and Tversky, 1979). There is also a correlation between awareness and the reduced likelihood of participation change, indicating that the knowledge of the tax in isolation is not always the reason to make respondents decrease and quit betting.

### Discussion

The arguments revolve around the results that have been most substantiated by the models. Firstly, the value of gambling seems to be vital at all times. It boosts expenditure change in the linear model and minimizes the chances of change of participation in the logistic model. This implies that money is not the primary motivator of all bettors; some of them find recreational or psychological gratification in betting. Taxation might be a less powerful inhibitor in such situations. Such a reading is aligned with behavioural arguments that the perceived value and attachment have the power to influence loss and policy change responses (Kahneman and Tversky, 1979).

Second, there is no linearity in the effect of income. As it was stated in the results, the more income one has, the less they tend to change their expenditure, and many higher-income groups are more likely to report a change in participation. The first possibility is that individuals with more financial resources can change the way in which they bet and not just carry on with their past behaviour. This interpretation, however, ought to be taken with a lot of care since the research is based on self-reported categorical data as opposed to observed betting transactions.

Third, the perceived tax impact is of greater importance compared to the general dissatisfaction. The descriptive findings indicate that the proportion of neutral and dissatisfied respondents with the policy is high, but satisfaction is not among the important predictors in regression models.

This suggests that not liking the tax does not necessarily mean a change of behaviour, which is quantifiable. Of more significance seems to be whether the respondents believe that the tax has a material impact on their betting decisions. This explanation widely conforms to the arguments of tax salience in the literature (Sussman and Olivola, 2011).

The modified discussion also explains what cannot be asserted by the study. The draft presented previously implied the potential shift to underground or non-taxed betting platforms. But the number of respondents who would change to other platforms was extremely low. Such evidence is too scanty to make a forceful conclusion on the migration to underground betting. That issue can thus be better treated as a guide to further investigation as opposed to being a given finding.

### **Policy Implications**

The evidence can be identified as the careful policy. Since behavioural responses vary among income groups or based on the intensity with which the respondents feel impacted by the tax, the efficacy of the policy may not be based on the rate of the tax alone. The transparency of the withholding tax and confusion may be enhanced by communicating clearly to the public how the withholding tax functions. Simultaneously, the younger male bettors and students are to be subjected to responsible gambling campaigns, as they constitute the most significant portion of the sample and have been identified in previous Ghanaian investigations on the topic as the most engaged with betting (Boateng, 2020; Tagoe and Asante, 2023). The regulators and operators are also supposed to focus on longer-term behavioural responses, particularly in instances where the bettors change their spending patterns without abandoning the market altogether.

### **Conclusion**

The paper has looked at how the reintroduced betting tax in Ghana relates to the alterations in betting spending and participation. The results show positive relationships exist between appreciation of betting and education and expenditure change, as compared to higher income and feeling, which are related negatively to expenditure change. To be eligible to participate, the following key reported predictors are income, perceived tax impact, awareness, appreciation of betting, and gender. Collectively, this is an indicator that taxation of betting is behaviourally relevant, although its impacts are contingent and not omnipresent. The research also brings in the gambling studies in Ghana in that it goes beyond the general argument about whether to tax betting or not but reveals that the reaction to taxes lies in the perceptions, values, and experiences of betting by the bettors in their daily lives.

The conclusions are supposed to be proportional to the data. The results indicate that there are moderate fluctuations in spending and

involvement of certain bettors, but do not confirm a compelling argument of a massive shift to underground gambling. Longitudinal or platform-based data, able to monitor actual betting behaviour through time and determine causal effects more directly, would be more helpful in future research.

### **Limitations and Future Research**

The study is limited by its reliance on self-reported survey data, categorical expenditure measures, and a cross-sectional design. These features make it difficult to establish causality and create the possibility of reporting bias. In addition, informal or illegal betting was not directly observed in the analysis. Future research should extend the model by using longitudinal data, broader behavioural measures, and direct indicators of tax incidence, platform choice, and informal market substitution.

**STATEMENT OF COMPETING INTERESTS**

None declared.

**ETHICS APPROVAL**

In line with the publication and research ethics policy (October 2020) of Kumasi Technical University, ethical approval is not required for studies that do not involve human participants, animals, or confidential data. This study meets those criteria.

**RELATIVE CONTRIBUTIONS**

Daniel Ofori conceived and drafted the introduction and analysed the quantitative data. Kwabena Osei Kuffour Adjei and Abraham Osei reviewed the literature and designed the methodology of the study. Benson Nyarko organized the references. All the authors proofread and approved the final manuscript and nominated Kwabena Osei Kuffour Adjei to be the corresponding author.

**ACKNOWLEDGEMENTS AND FUNDING SOURCES**

Our sincere gratitude goes to all the betting firms in Ghana for giving us the opportunity to use their services for the research. We would also like to thank our colleagues and service personnel who assisted in conducting the study or critiquing the manuscript.

**RESEARCH PROMOTION**

This study investigates how betting taxes in Ghana influence betting behaviour, including frequency, spending patterns, and consumer decision-making, using surveys with bettors and industry stakeholders. The study is important because it evaluates the effectiveness of taxation as a regulatory tool while highlighting potential unintended consequences, such as underground gambling and unequal socioeconomic impacts. The funding shows that while betting taxes and higher income reduce betting expenditure, factors like enjoyment and education increase it, with education also strongly linked to higher income and satisfaction, raising concerns about the policy's disproportionate effects on different income groups.

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**Article Submission:** <https://gamb.manuscriptmanager.net/>