Article

Enhancing Domestic Revenue Mobilisation with a National Tax Lottery: Prospects for Consumer Acceptance and Engagement

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Abstract

Purpose: Transitional and developing countries need to boost revenue collection by improving citizens' tax compliance. This research explores potential consumer acceptance of and engagement with a tax lottery system designed to improve domestic revenue mobilisation by targeting non-compliant businesses. Various countries use lotteries to enhance overall tax compliance, and, in turn, increase revenue collection.
Design: An online survey that delivered 2,774 valid responses from a wide range of respondents in South Africa finds that consumers would accept and engage with a tax lottery system and that they would shift their patronage to other businesses if one refused to issue them with the requested receipt.
Findings: Various demographic variables, including gender, monthly spend, and household size, can act as predictors of which types of consumers would be more likely to "buy into" or accept a tax lottery system. A positive perception of fairness (attitude) towards the tax lottery system also increases the likelihood of consumers accepting such a system.
Value: This study adds to the limited empirical studies that have explored tax lottery systems, especially from an African perspective. Revenue authorities can replicate the survey, and potentially use the current study's results to determine whether implementing a tax lottery system would be viable. Predictors of supporters could also assist revenue authorities with targeted advertising of the system.

Keywords: tax lottery; revenue mobilisation; tax compliance; incentives; South Africa

UNISA
Southern African Business Review
Volume 28 | 2024 | #16347 | 25 pages
https://doi.org/10.25159/1998-8125/16347
ISSN 1998-8125 (Online)

Introduction

Tax non-compliance in countries like South Africa threatens government revenue (Pinheiro et al. 2021), compromising public services and infrastructure (World Bank 2022). South Africa's tax gap, estimated at R200 billion or 4% of the gross domestic product (GDP), is largely due to corporate tax evasion (*BusinessTech* 2021). Some businesses avoid taxes by not issuing receipts, especially for cash sales, leaving no paper trail, which poses the problem explored in this study. To encourage tax compliance, the South African Revenue Service (SARS) uses punitive measures such as penalties, interest on overdue taxes, and sometimes criminal sanctions (EY 2018). However, these deterrents are costly and stressful for taxpayers (Brockmann et al. 2016), prompting the exploration of incentives like tax lotteries.

The tax lottery system, used in over 20 countries (Larsen et al. 2019), incentivises consumers to demand receipts, thus creating an audit trail for cash sales (Fabbri and Hemels 2013). Customers enter their receipts into a lottery for prizes, thereby helping authorities increase tax revenue and reduce audit costs (Naritomi 2019; Wan 2021). Research on tax lotteries is limited, focusing mostly on value-added tax (VAT) lotteries in Europe and the United States. Most studies report anecdotal evidence of increased tax compliance, with few providing experimental data (Alm et al. 1992a; Bazart and Pickhardt 2011; Brockmann et al. 2016; Burger and Schoeman 2021). Two studies from Portugal used surveys to explore why customers request invoices (Pinheiro et al. 2021; Wilks et al. 2019).

Tax lotteries are often combined with other measures, making it hard to attribute revenue increases solely to the lottery. Despite their popularity, there is little empirical evidence on their direct impact on tax revenue or consumer engagement (Nicolaides 2022).

This study argues that consumer cooperation (acceptance and engagement) is essential for a lottery system's effectiveness. Previous research in South Africa showed positive perceptions of rewards for tax compliance from a limited sample (Bornman and Stack 2015), suggesting that a tax lottery system could be well received by consumers.

Research Question and Objectives

Since the implementation of a tax lottery system would not be viable if consumers did not cooperate, the main research question for this study is: Would consumers in South Africa accept and engage in a tax lottery system? The broad research objectives are to determine:

1) how likely South African citizens are to support a tax lottery system,
2) whether consumers' choice of suppliers would change due to the tax lottery system, and
3) the demographic and perception of fairness predictors of consumers' acceptance of a tax lottery system.

The main contributors to tax in South Africa are income tax (personal income tax at 39.1% and corporate income tax at 16.4%) and VAT (26.5%) (National Treasury and SARS 2022). Most tax lotteries focus on VAT, but this study considers incorporating income tax. A tax lottery system should not hinder small businesses, which are crucial for job creation and economic growth (OECD 1997). Businesses with taxable supplies below R1 million in a 12-month period are not required to register for VAT and thus do not issue valid tax invoices (section 23 of the VAT Act). To avoid pushing customers to larger suppliers for valid tax invoices, simple receipts should be sufficient for participation in the tax lottery. A broader tax lottery system could enhance compliance for both income tax and VAT by creating a paper trail for audits.

The study contributes theoretically by addressing the lack of understanding of how tax lotteries may improve compliance and domestic revenue mobilisation, an under-explored area (Pinheiro et al. 2021). It also adds to the limited knowledge of consumer acceptance of tax lotteries in an African context. Practically, revenue authorities can use the survey results to consider implementing a national tax lottery system to boost compliance and revenue. While data were collected from a South African sample, the findings may be applicable to similar countries considering tax lotteries.

The study is presented as follows: the theoretical framework is given, followed by the research methodology; the results are then analysed and discussed; and finally, appropriate conclusions are drawn, including recommendations for future research.

Literature Review

Tax Lotteries

Governments employ various methods to improve tax compliance, ranging from punishment (such as penalties) to incentives or rewards for good behaviour such as electronic payment incentives, VAT refunds, electronic fiscal devices, and tax lottery systems (Awasthi and Engelschalk 2018). This study focuses on tax lottery systems.

Over 20 countries have implemented tax or VAT lottery systems to enhance tax compliance and increase tax revenue (Larsen et al. 2019). Successful examples include Taiwan, China, Slovakia, and Romania (BBC News 2015; Giebe and Schweinzer 2014; Mercer 2016; Wan 2010). Puerto Rico and Georgia discontinued their systems shortly after implementation (Wan 2021). In sub-Saharan Africa, only Rwanda has implemented a tax lottery, and Tanzania plans to do so (Fjeldstad et al. 2021).

Tax lottery systems can encourage consumers to demand receipts, aiding revenue authorities by creating an auditable paper trail. This could improve both income tax collection and VAT compliance, potentially increasing overall tax revenue (Burger and Schoeman 2021; Fenochietto and Benitez 2021). Research in Tanzania supports this, showing that only 30% of more compliant businesses issue receipts without customer prompting (Fjeldstad et al. 2020).

Tax Compliance

Research on tax compliance often focuses on factors influencing tax evaders and methods to prevent or punish non-compliance (Yong et al. 2019). Taxpayers may engage in tax avoidance or tax evasion (Alm and Torgler 2011; James and Alley 2002). According to Allingham and Sandmo's (1972) expected utility theory, a rational person weighs the costs (penalties) against the benefits (tax savings) of tax evasion. If penalties are less than the taxes owed, tax evasion may seem rational.

Numerous factors influence tax compliance. Meta-analyses conducted by Jackson and Milliron (1986) and Richardson and Sawyer (2001) identify 19 such factors including age, gender, education, income level, withholding of income at source, occupation, peer influence, ethics, fairness, complexity, contact with revenue authorities, sanctions, audit probability, tax rates, compliance costs, tax preparers, framing, positive inducements, and tax amnesties. More recently, Yong et al. (2019) highlighted 19 additional factors affecting tax compliance behaviour including tax evasion, tax enforcement, trust, power, sole traders, culture, tax system, politics, individual taxpayer, business taxpayer, tax morale, social norms, religion, withholding taxes, reciprocity, perception of tax, perceived opportunity, tax avoidance, and wealthy taxpayers. Given the number of factors that influence tax compliance, it is clearly a complex issue.

Most research examines tax compliance from the perspective of businesses or suppliers, focusing on those who evade taxes. However, a tax lottery system shifts the focus to consumers, who could act as agents for revenue authorities by demanding receipts and creating an audit trail. While research on consumer perspectives is limited, existing studies on business perspectives suggest that demographics and perceived fairness influence tax compliance (Richardson and Sawyer 2001). These factors may similarly affect consumer support for a tax lottery system. Motivation, intricately linked to a fairness perception, is also relevant.

Demographic Factors

Extensive literature using various methodologies explores the effects of demographic factors on tax compliance, but results are mixed. Commonly studied factors include gender, age, education, income level, source of income, and occupation. Generally, studies suggest that females and older individuals are more tax compliant than males and younger individuals (Aladejebi 2018; Carsamer and Abbam 2020; D'Attoma et al. 2017; Grasmick and Bursik 1990; Hasseldine et al. 1994). Two studies applicable to the effect of lottery systems on tax compliance produced mixed results: one study found that lottery schemes positively influence male tax compliance (Bazart and Pickhardt 2011), while another reported that positive rewards slightly increase female compliance but significantly decrease male tax compliance (Brockmann et al. 2016). Wilks et al. (2019) found no gender difference in the propensity to ask for receipts. The influence of education, income, and occupation on tax compliance remains inconclusive, though

evidence suggests higher compliance when income is withheld or reported by a third party (Schoeman 2021).

Many sociodemographic variables affect consumers' decisions to ask for receipts (Pinheiro et al. 2021). This study aims to identify predictors of support for a tax lottery system, focusing on demographic factors.

Although many demographic factors have been identified and tested in prior literature, while some have not, the current study considers factors that the researcher presumes would influence consumer acceptance of and engagement in a tax lottery system. It is therefore hypothesised that:

H_{1a}: gender affects consumer acceptance of a tax lottery system;

H_{1b}: age affects consumer acceptance of a tax lottery system;

H_{1c}: ethnicity affects consumer acceptance of a tax lottery system;

H_{1d}: monthly income affects consumer acceptance of a tax lottery system;

H_{1e}: monthly spend affects consumer acceptance of a tax lottery system;

H_{1f}: number of members in a household affects consumer acceptance of a tax lottery system;

H_{1g}: province in which a person resides affects consumer acceptance of a tax lottery system;

H_{1h}: province in which a person makes purchases affects consumer acceptance of a tax lottery system; and

H_{1i}: employment status affects consumer acceptance of a tax lottery system.

Motivation

B. F. Skinner's behavioural reinforcement theory of motivation posits that "what gets rewarded gets repeated" (Skinner 2014). Though often discussed in employment contexts, this principle applies broadly (Van Eerde 2015). The tax lottery system relies on customers repeatedly asking for receipts, incentivised by rewards, aligning with this theory. Positive incentives ("carrots") have been shown to increase compliance, often proving more effective than punitive measures ("stick") (Alm et al. 1992a; Alm 2012; Schoeman 2021).

An incentive is defined as "something that encourages a person to do something" (*Cambridge Dictionary* 2022). Incentives motivate actions by providing internal or

external inducements (Locke and Latham 2004). Additionally, a person's motivation can be influenced by their perception of the fairness of the action or situation (Falk 2006).

Fairness

Tax fairness is crucial for tax compliance (Jackson and Milliron 1986). For a tax system to be publicly acceptable and thus have the potential to be successful, it needs to be perceived as fair (Mirrlees 2011). Fairness in taxation encompasses two important areas: adequate government service delivery and equitable tax burdens among citizens (Jackson and Milliron 1986). Perceived unfairness in taxation can lead to tax evasion (Al-Rahamneh and Bidin 2022; Carsamer and Abbam 2020). As de Gruben (n.d., 1) blatantly states: "The Government is incompetent, they are corrupt, they will waste my money so why should I hand over my hard earned cash?" Furthermore, since tax compliance is also influenced by how fair a person feels their treatment is in relation to that of a fellow citizen, the likelihood of tax compliance would be greater if a person felt that their fellow citizens were also contributing their fair share of taxes (Alm et al. 1992b; Torgler et al. 2008).

Strumpel (as cited in Tan and Chin-Fatt 2000) notes that positive attitudes toward tax system fairness enhance tax compliance. Therefore, an individual's *attitude* towards taxation is determined by the perception they have of the *fairness* of a tax system. Similarly, consumer acceptance of a tax lottery system may be influenced by whether a consumer believes the system is fair, and this study argues accordingly that if a consumer perceives the system to be unfair, they will be less likely to participate in a tax lottery.

The setting for the research is South Africa, where previous research has found that taxpayers do not perceive the tax system as fair due to corruption of politicians (and fellow citizens) and the resultant misappropriation of tax funds (Ramfol 2019, 1). In fact, researchers have indicated that a tax revolt may be imminent due to the harsh economic circumstances (Du Preez and Molebalwa 2021). These studies indicate that South Africans may perceive the tax system as unfair both in terms of service delivery and fellow citizens not contributing their fair share. Since consumers' perceptions of the fairness of a tax system influence their attitude, this perception of fairness may also indirectly influence consumers' acceptance of a tax lottery system because such a system is designed to operate in conjunction with the tax system itself.

The questionnaire used for this study asks questions that deal with consumers' perceptions of fairness in two ways. One set of questions is direct, subjective, and personal and uses the first-person pronouns "I" and "me". These questions seek to ascertain what is classified as each consumer's individual perception of fairness. The other questions involve more general perceptions of the current tax system and of a possible tax lottery system and are thus more objective in nature. These seek to determine what is classified as the consumers' general perception of fairness.

The hypotheses on fairness are as follows:

H_{2a}: Individual perception of fairness affects consumer acceptance of a tax lottery system.

H_{2b}: General perception of fairness affects consumer acceptance of a tax lottery system.

Research Design

To test the hypotheses outlined in the previous section, an online survey was conducted in South Africa, which does not have a tax lottery system. Surveys are often used to determine people's opinions, desires, and attitudes (Hofstee 2011; Leedy and Ormrod 2015) and "have been at the core of behavioral taxation research since its beginning" (Torgler 2021, 6).

South Africa, which has a 35.3% unemployment rate (Statistics South Africa 2022) and a significant informal sector employing 18.2% of the labour force (Statistics South Africa 2022), faces challenges in tax compliance. The informal sector (often cash-based transactions) often evades taxation (Awasthi and Engelschalk 2018), which contributed to a substantial budget deficit of R325.7 billion in 2022 (Naidoo 2022). Therefore, pulling the informal sector into the tax net and improving tax compliance is imperative for the government.

Introducing a tax lottery system to incentivise tax compliance could be beneficial in South Africa. This study aimed to identify factors influencing consumer acceptance and engagement with such a system, since evidence supporting its effectiveness is currently limited.

The Survey

Previous research lacks specific surveys on tax lottery systems, particularly before their design and implementation. Thus, the researcher developed a questionnaire for this study as part of a broader research project.

The questionnaire's first section gathers demographic information to assess sample representativeness and potential predictors of consumer acceptance (H_{1a}–H_{1i}). The following section assesses consumer perceptions and attitudes toward fairness in a tax lottery system, drawing on questions adapted from Bornman (2015) and additional expert input. The study also includes questions on the tax lottery system's implementation, with results kept for a separate discussion.

Sample

Economically active citizens, aged 15 to 64 actively seeking or engaged in work, form the survey's target population, alongside elderly consumers up to age 79 (totalling 43 million citizens) (Statistics South Africa 2021). Only individuals aged 18 and older

completed the questionnaire for ethical reasons, aiming for a sample size of 2,401 respondents using Cohran's method (Bartlett et al. 2001).

Following approval from the university ethics committee (EMS012/22), a pilot study of taxation academics refined the survey's clarity and comprehensibility based on feedback, leading to adjustments. An online research company administered the survey in May and June 2022, yielding 3,291 responses. After excluding incomplete responses, 2,774 valid responses remained. Demographic comparison with the South African population indicated broad representation, though not fully comprehensive, cautioning against generalising results to the entire population.

Table 1: Summary of demographic information

Variable	% of South African population	% of participants
Gender		
Male	49	30.8
Female	51	68.7
Other/did not say		0.4
Age		
18–19	(Age 15–19 in population): 12	2.5
20–29	24	48.1
30–39	25	33.5
40–49	17	10.9
50–59	11	3.5
60–69	8	1.4
70–80	4	0.1
Ethnicity		
Black	80.9	72.7
Coloured	8.8	11.6
Indian/Asian	2.6	4.4
White	7.8	10.1
Other/did not say		1.1

Province (live)		
Eastern Cape	11.1	5.5
Free State	4.9	4.2
Gauteng	26.3	43.7
KwaZulu-Natal	19.1	15.9
Limpopo	9.9	5.1
Mpumalanga	7.9	4.1
North West	2.2	3.9
Northern Cape	6.9	1.6
Western Cape	11.8	16

Source: Statistics South Africa (2021)

Most participants were female (68.7%), and in most South African households, "women hold the buying power" (IQbusiness 2020). Furthermore, most participants were 20–39 years old (81.6%), and most were black (72.7%). Most participants also lived in the three most densely populated provinces: Gauteng, KwaZulu-Natal, and the Western Cape (75.6%). Based on the above information, the sample may be considered broadly representative of the South African population.

Other demographic information that was collected included employment status, province where participants made purchases, monthly income and spend per household, and the number of members in a household. Tables 2 and 3 reflect some of this information.

Table 2: Employment status and household size

Variable	% of participants
I am (employment)	
A student	12.8
An employee	54.5
Not in paid employment	12.6
Retired	1.4
Self-employed	18.7
Number of household members	
1–2	17.6
3–4	49.4
5–8	29.8
>8	3.2

From table 2, it is evident that most of the participants were economically active (73.2%). It can be assumed that these people make a larger number of purchases than those who are not economically active, and they are therefore seen as important role players when considering consumer acceptance of a tax lottery system. In terms of the number of members in a household, most participants belonged to a household with three to four members.

Table 3 summarises the monthly income per household as well as the average monthly household spend. For the 2023 year of assessment, an individual becomes liable to pay income tax when their yearly income is above R226,000 (thus R18,833 per month) (SARS 2022). Most of the respondents (60.5%) fell within the R5,001–R30,000 groups for household income, and an overwhelming majority (61.5%) spent an average of R1,000–R5,000 per household per month.

Table 3: Monthly income and spend

Monthly brackets	Income %	Spend %
<R1 000	4.1	8.0
R1,000–R5,000	14.6	61.5
R5,001–R15,000	29.9	24.2
R15,001–R30,000	30.6	3.4
R30,001–R50,000	11.8	1.0
>R50,000	5.8	0.5
Did not say	3.2	1.4

For this study, a good spread of participants was obtained with varying demographics from which one can obtain a good understanding of South African consumers' acceptance of and potential engagement in a tax lottery system. Furthermore, because of the survey's questions on demographics, the demographic profile of the participants who would be the most willing to support a tax lottery system can be determined. This is discussed below.

Analysis Techniques

To answer the research question and meet the objectives, several techniques were used, such as considering the descriptive statistics of the sample, provided in tables 1 to 3. An exploratory factor analysis was performed to determine the smallest number of hypothetical constructs to "explain the covariation observed among a set of measured variables" (Watkins 2018, 219). Finally, to test the hypotheses, binary regression was applied (Laerd Statistics 2018).

An exploratory factor analysis was conducted on the individual perception of fairness questions as well as on the general perception of fairness questions, using principal axis factoring as the extraction method and promax as the rotation method. Table 5 shows that the Kaiser–Meyer–Olkin measures of sampling adequacy were above the recommended threshold of 0.5 and that Bartlett's test of sphericity was statistically significant ($p < .001$) for the items in both constructs (Field 2013). These results indicate that a factor analysis is appropriate for both constructs. The reliability was also considered satisfactory, as Cronbach's alpha value for the individual lottery perception of fairness was above the acknowledged threshold of 0.6 (Hair 2007).

Predictor variables that are continuous or categorical are used to predict target variable classes (Patel 2021), and binary logistic regressions were performed to test the hypotheses for significant predictors of consumers' acceptance of a tax lottery system. "Happiness to participate" was used as a proxy for consumer acceptance as the dependent variable and demographics (gender, age, ethnicity, monthly income, monthly spend, number of members in a household, province in which a person resides and makes purchases, and employment status) and perception of fairness (individual and general) as independent variables.

Measures

For the purposes of this analysis, the categories of the dependent variable "happiness to participate in a well-managed tax lottery system" were simplified: The "extremely unhappy", "somewhat unhappy" and "neither happy nor unhappy" categories were combined into the "unhappy" category and the "extremely happy" and "somewhat happy" categories into the "happy" category.

For the independent variables, the two measures, individual and general perception of fairness, were composite continuous measures. The categorically independent variables (gender, age, ethnicity, monthly income and spend, province in which a person resides and makes purchases, and employment status) were measured as per tables 1 and 2.

Assumptions

A key assumption of binary logistic regression is linearity between the independent continuous variables and the logit (dependent variable term). The assumption was tested for the two continuous variables (individual and general perception of fairness) using the Box Tidwell transformation test, which involves adding to the logistic model interaction terms, which are the cross-product of each independent times its natural logarithm [$(X)\ln(X)$]. If these terms are significant, there is nonlinearity in the logit; however, this method is not sensitive to small nonlinearities (Box and Tidwell 1962; Laerd Statistics 2023). In the case of individual perception of fairness, the assumption was violated; therefore, a categorical variable was constructed (recoding values between 1 and 2.8 – non-supportive perception of fairness [attitude], 3 – moderate perception of fairness [attitude], 4 and 5 – supportive perception of fairness [attitude]).

Another key assumption is that of no multicollinearity between the predictors, and this assumption was assessed using the correlation matrix provided in the binary logistic output. Multicollinearity was observed (correlation value above 0.9 [Tabachnick et al. 2007]) between two of the age categories, two of the income categories, and between all categories of provinces in which participants resided. After removing one category each from age and income variables, the remaining categories still indicated no statistical significance with the dependent variable. Meanwhile, for the province in which participants resided variable, several of the provinces had to be removed to address multicollinearity. Therefore, the provinces in which participants resided were not considered further in the statistical analysis of the data.

Results

In addressing objective 1, the core question regarding consumer acceptance that was asked in the questionnaire was to determine how happy respondents would be to support the implementation of a tax lottery system. The descriptive results in figure 1 indicate that 76.6% were somewhat happy or extremely happy to participate in a well-managed tax lottery system. It is thus evident that most respondents were likely to accept and support a tax lottery system.

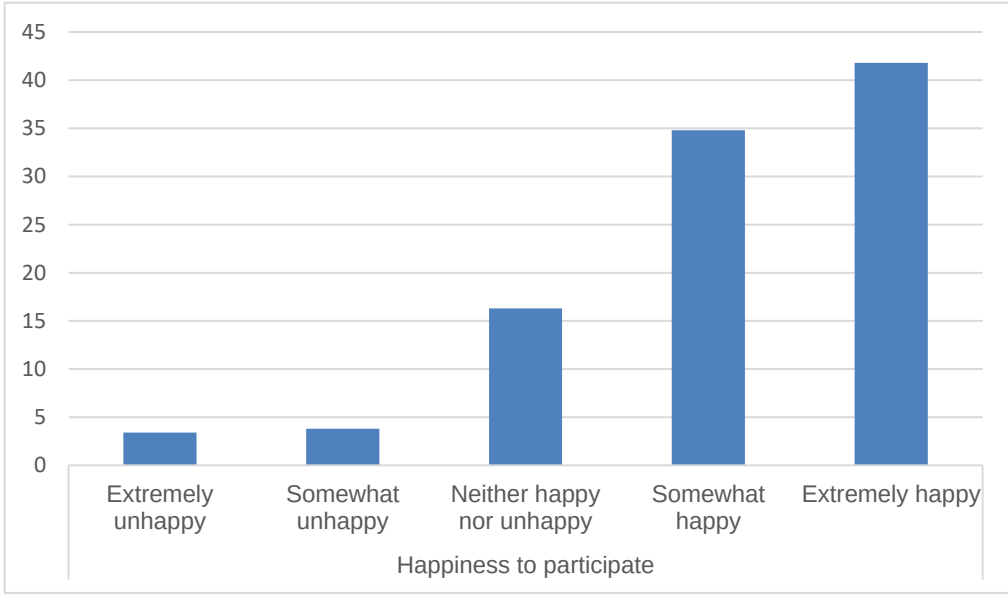

Figure 1: Happiness to participate in a well-managed tax lottery system

Moving on to objectives 2 and 3, and to test research hypotheses H_{1a}–H_{1i} and H_{2a}–H_{2b}, the next step was to determine what factors could influence consumer acceptance of a tax lottery system, specifically considering participants' demographics and their individual and general perceptions of fairness or attitudes towards the proposed tax lottery system. The questions shown in figure 2 measured the respondents' perceptions

of fairness, grouped under individual perception of fairness (where questions were asked in the first person) or general perception of fairness (where questions dealt with the more general tax system and with a possible tax lottery).

Figure 2 shows that respondents mostly agreed or strongly agreed that: they are upset when other people or businesses do not pay their fair share of taxes; they believe the tax lottery system would ensure that businesses are more honest in their dealings with SARS; and the tax lottery system would neither be a waste of time and resources nor be unfair. Respondents also largely expressed that the tax lottery system would convince them that the government is interested in the country's economic well-being.

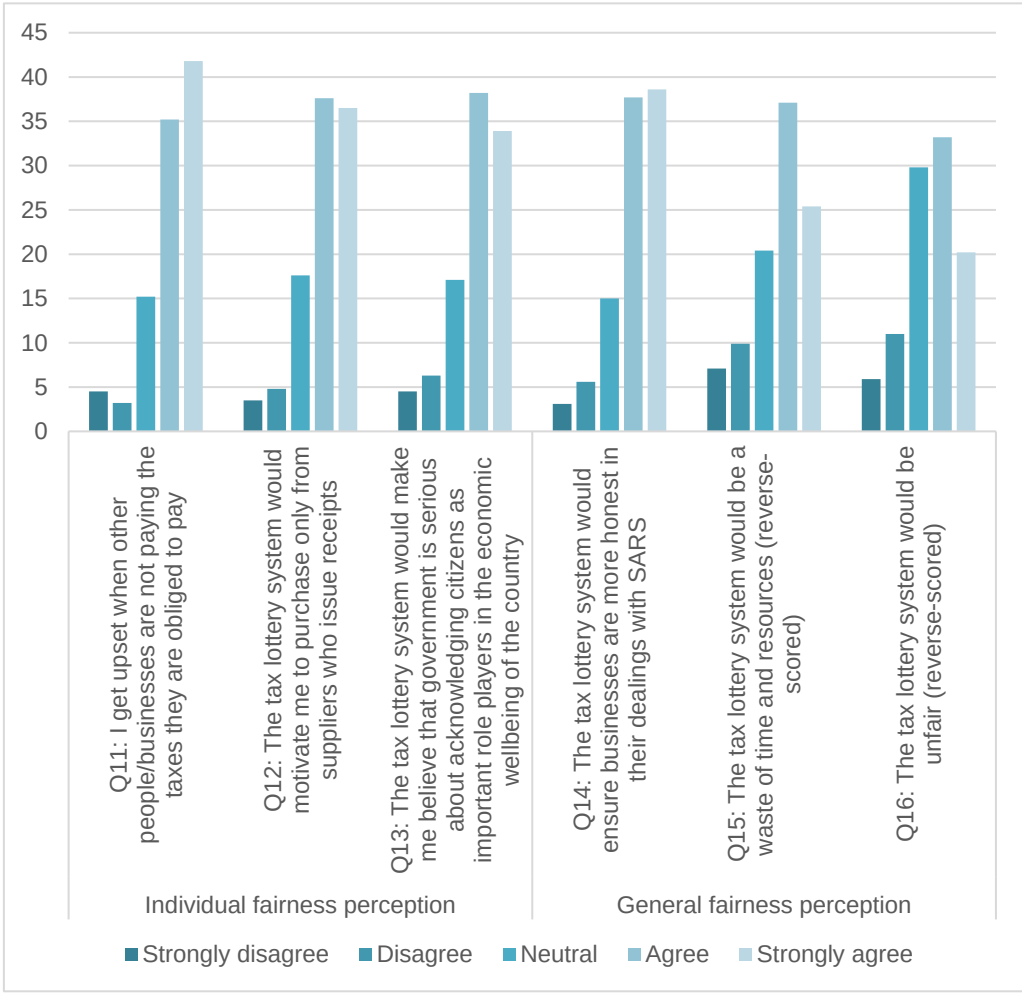

Figure 2: Individual and general perception of fairness

Figure 2's depiction of the responses to Q12 are of specific interest for objective 2: 74.1% of respondents indicated that they agreed or strongly agreed that the tax lottery system would motivate them to only purchase from suppliers who issue receipts. This could indicate that the behaviour of consumers might cause non-compliant businesses to start failing due to the drop in sales caused by such boycotts.

In moving on to explore objective 3, exploratory factor analyses on both the individual perception of fairness and general perception of fairness questions were conducted. A summary of this factor analysis is provided in table 4.

Table 4: Factor analyses on individual and general perceptions of fairness of the tax lottery system

Construct	Item description	KMO and Bartlett's test	% variance explained	Factor loadings	Cronbach's alpha
Individual perception of fairness					
Q11		0.650 $p < .000$	51.8	0.530	0.744
Q12				0.831	
Q13				0.763	
General perception of fairness					
Q14		0.621 $p < .001$	37.3%	0.441	0.624
Q15 (reverse-scored)				0.690	
Q17 (reverse-scored)				0.670	

For each of the two constructs, only one factor was identified based on the eigenvalue criterion (eigenvalue > 1) (Field 2013), indicating that both constructs are unidimensional. Subsequently factor-based scores were calculated and labelled the factors "Individual perception of fairness" and "General perception of fairness". The mean values for individual and general perception of fairness were 3.7 and 4.0, respectively, and the standard deviations were 0.83 and 0.85, respectively, indicating a positive individual and general perception of fairness of consumers' acceptance of a tax lottery system.

In determining the predictors of consumer acceptance of a tax lottery system, the initial binary logistic regression results indicated that age, monthly income, and province in which a person resides and makes purchases were not statistically significant predictors. Therefore, H_{1b}, H_{1d}, H_{1g}, and H_{1h} were not supported and these demographic factors are therefore not predictors of consumer acceptance of a tax lottery system.

A second regression analysis was done excluding the demographic variables given above. The independent variables were thus individual perception of fairness, general

perception of fairness and some demographic variables, namely: gender, ethnicity, monthly spend, number of members in a household, and the respondent's employment status.

When it comes to an assessment of the model's adequacy, table 5 sets out the relevant information on the predictors included and the model's overall fit. The Hosmer and Lemeshow test showed an adequate fit of the model ($p = 0.217$). The correct prediction classification improved slightly from 77.1% (block 0) to 80.0% correct (block 1). The pseudo R^2 measures (Cox and Snell/Nagelkerke) were 0.194 and 0.295, respectively; however, as the pseudo R^2 measures used do not indicate variance explained but are rather used when comparing competing models, they can only be seen as a mechanism to indicate that alternative models should be considered (Hemmert et al. 2018).

Table 5: Statistically significant predictors, model fit and classification %

Variables	**Beta (Odds ratio)**
Gender	−0.333 (0.717)***
Ethnicity: Black	
Ethnicity: Coloured	−0.266 (0.766)
Ethnicity: Indian/Asian	−0.349 (0.705)
Ethnicity: White	−0.067 (1.069)
Spend <R1,000	
Spend R1,000–R5,000	0.028 (1.028)
Spend R5,001–R15,000	−0.161 (0.851)
Spend R15,001–R30,000	−0.657 (0.518)**
Spend >R30,000	−0.765 (2.148)
Household 1–2	
Household 3–4	0.380 (1.462)***
Household 5–8	0.482 (1.619)***
Household >8	0.153 (1.165)
General perception of fairness	0.946 (2.576)***
Individual perception of fairness: non-supportive	
Individual perception of fairness: moderate	0.164 (1.179)
Individual perception of fairness: supportive	1.306 (3.691)***
I am an employee	
I am self-employed	0.082 (1.085)
I am a student	−0.079 (0.924)
I am retired	−0.068 (0.934)
I am not in paid employment/unemployed	0.059 (1.061)
Model summary	
Classification % model 0 (model 1)	77.1% (80.0%)
Hosmer and Lemeshow test statistic (*p* values)	10.736 (0.217)
Nagelkerke R^2 (Cox and Snell R^2)	0.295 (0.194)

Note: Beta-coefficients are presented. ***$p < 0.01$, **$p < 0.05$

Table 5 indicates that the following variables are statistically significant predictors and are thus indicators of how happy respondents were to accept a tax lottery system.

- Gender: Females are less likely (only 0.7 times) to be happy to accept and engage in a tax lottery system.
- Monthly spend: Higher spenders (R15,001–R30,000 per month) are only 0.5 times as likely as lower spenders (<R1,000 per month) to be happy to accept and engage in a tax lottery system.
- Household size: Those with 3–4 members in a household are 1.5 times more likely to be happy to accept and engage in a tax lottery system than those in households with only 1–2 members. Similarly, those in households with 5–8 members are 1.6 times more likely to be happy to accept and engage in a tax lottery system than those in households with only 1–2 members.
- Individual perception of fairness: Where respondents agreed (supportive attitude) that (i) they get upset when others do not pay their taxes; (ii) the tax lottery would motivate them to purchase only from suppliers who issue receipts; and (iii) the tax lottery would convince them that the government is serious about acknowledging citizens as important role players in the economic well-being of the country, they were 3.7 times more likely than those who did not have a supportive attitude (perception of fairness) to be happy to accept and engage in a tax lottery system.
- General perception of fairness: As a respondent's general perception of fairness of the tax lottery increases with one unit of measure, it indicates that the respondent would be 2.6 times more likely to be happy to accept and engage in a tax lottery system.

Based on the above results, H_{1c} and H_{1i} are not supported, since ethnicity and employment status do not predict consumer acceptance of a tax lottery system. However, H_{1a}, H_{1e}, H_{1f}, H_{2a}, and H_{2b} are supported, as discussed in the points above and thus, gender, monthly spending, number of members in a household, and individual and general perceptions of fairness are predictors of those who would support the tax lottery system.

Discussion and Conclusion

A lack of tax revenue collected by a government significantly impacts the service delivery of a state to its citizens. Viable strategies thus need to be considered to encourage tax compliance and thereby increase tax revenue collection. One such strategy is to incentivise consumers to be indirectly involved in auditing non-compliant businesses, which can be done through a tax lottery system.

Contributing to the knowledge on tax lottery systems and based on the survey responses collected from South African consumers for this study, it is evident that most respondents would accept and engage in a tax lottery system, with 76.6% indicating that they would be somewhat happy or extremely happy to participate in a well-managed tax lottery system. This aligns with the results obtained by Bornman and Stack (2015) which indicate that people mostly feel positive about being rewarded for tax compliance. The

practical contribution is thus that the South African government should therefore consider the implementation of a tax lottery system as an attempt to combat tax non-compliance and increase tax revenue collection.

For a tax lottery system to really be effective, it needs to change people's behaviour by reducing non-compliance. Where businesses are not tax compliant, the government is dependent on consumers moving to compliant businesses. Through the tax lottery system, consumers would be able to detect non-compliance to an extent, for instance where businesses refuse to provide receipts. Respondents to this study's survey indicated that they would be motivated by a tax lottery system to move to compliant businesses from businesses that are not willing to issue them with receipts that would create an audit trail for the revenue authority. This is an indication both that consumers may be motivated by rewards and that they are possibly motivated to address unfair tax practices by ensuring that businesses contribute their fair share of taxes. Moreover, if enough consumers move their patronage to compliant businesses, non-compliant businesses that do not issue receipts will be forced to either become tax compliant or close their doors.

When governments know the predictors of who would support a tax lottery system, they may be able to better focus their advertising and campaigning for such a system by targeting the correct profile of citizens. This focus may either be on making those who would be likely to accept the tax lottery system aware of its existence or educating and encouraging those who do not accept the system so that they are also persuaded to support it. Besides gender, monthly spend, and household size as demographic variable predictors of consumer acceptance, it is evident that positive individual and general perceptions of fairness also increase consumer acceptance of a tax lottery system. It is therefore imperative that the tax system and, indirectly, the tax lottery system are perceived as fair to have a greater chance of success. The government should therefore design and implement a tax lottery system very carefully, with a focus on ensuring that it is perceived as fair.

This study has a few limitations. One is that it was conducted online only, and as such, consumers who did not have smart devices or internet access were not included in the sample, potentially excluding low-income earners who could not afford access to smart devices or the internet, or excluding the elderly who did not know how to work smart devices to complete a questionnaire. However, these two groups of consumers are not the people making most of the purchases, which means that their potential contribution to a tax lottery system is limited. Another possible limitation of this study is the survey methodology used as opposed to conducting interviews or an experiment. Interviews could have provided clarity and insight from interviewees, and an experiment could have examined real-life behaviour. However, it is accepted that the survey results also provide good insight into consumer behaviour and acceptance of and engagement in a potential tax lottery system.

This study provides some avenues for further research recommendations. Since it is evident that consumers would accept the implementation of a tax lottery system by the South African government, future research could explore the most suitable method for the implementation of said tax lottery system, as this was not further explored in the current study. Additionally, while the current research reports consumers' quantitative responses about their support of a tax lottery system, qualitative research could be conducted in future to determine why they would (or would not) support a tax lottery system. Further, the current study and most previous studies have focused on consumers' perspectives and on whether they would accept and engage in a tax lottery system, but future research could be conducted from the perspective of a supplier's acceptance of a tax lottery system.

Data Availability Statement

Replication materials for the study are not publicly available due to ethical considerations, and due to further publications still being in the pipeline from the data. However, a request can be made to the corresponding author for consideration.

Acknowledgements

Thank you Dr. Marthi Pohl for your invaluable assistance with the statistics. Thank you Prof. Stella Nkomo, Prof. Liezl-Marie van der Westhuizen, and Prof. Chris Evans for your vital comments in improving the article. To the attendees at the Rage, Reckoning and Remedy Conference and at the Tax Research Network Conference—thank you for your helpful feedback. To Kaleela Callaghan, thank you for your assistance with the language editing.

Funding

This work has been supported by the South African Institute of Chartered Accountants (SAICA), the National Research Foundation (grant number: KIC2204062204), and the University of Pretoria (Research and Development funding) (grant number 3456).

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