Influence of Policy Response on Consumer Behavioural Change in Unregulated Alcohol Consumption: Evidence from Central Kenya

Authors

Pluto Nkatha Kinoti[1*]
Department of Business Management, School of Business and Economics, Kirinyaga University, Kenya

Dr. Clement Nkaabu[2]
Senior Lecturer, Department of Management Science and Entrepreneurship, Bomet University, Kenya

Prof. Pius Odunga[3]
Professor of Marketing, Department of Business Management, School of Business and Economics, Kirinyaga University, Kenya

ABSTRACT

Purpose: Unregulated alcohol consumption remains a major public health and social challenge in many low- and middle-income countries despite the implementation of multiple alcohol control policies. This study examined the influence of Policy Response on Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya.

Design/Methodology/Approach: The study adopted a positivist philosophy and an explanatory cross-sectional survey design. Primary data were collected from 386 respondents drawn from Murang'a, Kiambu, Kirinyaga, and Nyeri counties using structured questionnaires. Data were analysed using IBM SPSS Statistics 29 and Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS 4. Reliability, convergent validity, discriminant validity, and structural model quality were assessed prior to hypothesis testing.

Findings: The findings revealed that Policy Response has a positive and statistically significant influence on Consumer Behavioural Change ($\beta = 0.387$, $t = 10.373$, $p < .001$). The structural model explained 61.0% of the variance in Consumer Behavioural Change ($R^2 = 0.610$), demonstrating substantial explanatory power. The results indicate that strengthened regulatory enforcement, institutional coordination, licensing compliance, rehabilitation support, stakeholder collaboration, and sustained public awareness initiatives significantly promote positive behavioural change in addressing unregulated alcohol consumption.

Originality/Value: This study contributes to social marketing and public policy literature by conceptualising Policy Response as a multidimensional construct rather than examining isolated policy instruments. By integrating Institutional Theory with the Theory of Planned Behaviour and providing empirical evidence from Central Kenya, the study offers a comprehensive explanation of how coordinated policy interventions shape behavioural outcomes in informal alcohol markets and provides practical insights for policymakers in low- and middle-income countries.

Keywords: Policy Response, Consumer Behavioural Change, Strategic Social Marketing, Unregulated Alcohol Consumption, Institutional Theory, Theory of Planned Behaviour, Kenya

INTRODUCTION

Unregulated alcohol consumption remains one of the most persistent public health and social challenges worldwide, contributing substantially to preventable morbidity, premature mortality, violence, road traffic injuries, lost productivity, and socioeconomic inequalities. Harmful alcohol use accounts for approximately 2.6 million deaths annually and remains a leading risk factor for disease burden among individuals aged 20–39 years, with particularly severe consequences in low- and middle-income countries where health systems and regulatory institutions often face significant resource constraints (World Health Organization [WHO], 2024; Manthey et al., 2024). Despite sustained investments in alcohol control policies, many countries continue to experience widespread availability and consumption of illicit and unregulated alcohol, underscoring the need for evidence-based policy interventions capable of promoting sustainable consumer behavioural change (WHO, 2024).

Policy responses have emerged as one of the most effective approaches for reducing alcohol-related harm by creating environments that encourage healthier behavioural choices. Comprehensive alcohol policies typically combine regulatory measures such as licensing, taxation, restrictions on availability, enforcement of legal standards, public awareness campaigns, rehabilitation services, and inter-agency collaboration. Rather than relying solely on punitive measures, contemporary policy frameworks seek to influence behaviour by modifying the social, economic, and institutional conditions within which alcohol consumption occurs. The WHO Global Alcohol Action Plan 2022–2030 therefore advocates integrated policy approaches that simultaneously strengthen governance, improve access to treatment, and promote preventive interventions capable of reducing harmful alcohol use (World Health Organization, 2024).

Evidence from many countries demonstrates that comprehensive alcohol policies can reduce alcohol availability, delay initiation among young people, increase treatment uptake, and decrease alcohol-related injuries and deaths. Nevertheless, policy effectiveness varies considerably across jurisdictions because implementation is influenced by institutional capacity, stakeholder coordination, resource availability, and community acceptance. In many developing countries, enforcement remains inconsistent, informal alcohol markets continue to flourish, and fragmented institutional responsibilities limit the effectiveness of existing alcohol control measures. Consequently, policy success depends not only on the existence of legislation but also on the quality of implementation and the extent to which policy interventions address behavioural determinants of alcohol consumption.

Kenya provides an important context for examining the effectiveness of alcohol control policies because, despite the enactment of the Alcoholic Drinks Control Act and subsequent national and county-level regulatory initiatives, unregulated alcohol consumption continues to pose serious public health, economic, and social challenges. Central Kenya has experienced recurrent incidents of morbidity and mortality associated with illicit and second-generation alcohol, prompting intensified enforcement operations, licensing reforms, and public awareness campaigns by the National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) and county governments. However, persistent weaknesses in policy implementation, institutional coordination, regulatory compliance, and resource allocation continue to undermine the effectiveness of these interventions (NACADA, 2024; WHO, 2024).

Kenya continues to experience significant challenges associated with harmful alcohol consumption despite implementing several regulatory and institutional interventions. The Alcoholic Drinks Control Act, county alcohol control legislation, enforcement operations, licensing regulations, and public education initiatives have strengthened national efforts to combat illicit and unregulated alcohol. The National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) has further expanded prevention programmes, rehabilitation services, and public awareness campaigns to reduce alcohol-related harm. However, recurrent outbreaks of deaths and disabilities associated with illicit alcohol, together with persistent availability of second-generation alcoholic beverages, indicate that behavioural change has remained uneven across communities.

These challenges are particularly evident in Central Kenya, where counties such as Kirinyaga, Murang'a, Kiambu, and Nyeri continue to report high levels of unregulated alcohol production and consumption despite sustained government interventions. Enforcement operations have increased, licensing systems have been strengthened, and rehabilitation services have expanded. Nevertheless, relapse, continued consumption of illicit alcohol, and the re-emergence of illegal supply networks suggest that policy interventions alone may not automatically translate into sustainable consumer behavioural change. Understanding the extent to which policy responses influence behavioural outcomes is therefore essential for designing more effective alcohol control strategies.

Although previous studies have examined the effectiveness of alcohol control policies, several important knowledge gaps remain. First, much of the existing literature has focused on individual policy instruments—such as taxation, advertising restrictions, licensing, or law enforcement—in isolation, providing only a fragmented understanding of how coordinated policy interventions influence behavioural outcomes (Anderson et al., 2009; Carpenter & Dobkin, 2022). Second, empirical evidence is dominated by studies conducted in high-income countries with relatively strong institutional environments, thereby limiting the generalisability of findings to low- and middle-income countries characterised by informal alcohol markets and constrained regulatory capacity (Manthey et al., 2024; WHO, 2024). Third, relatively few studies have integrated Institutional Theory and the Theory of Planned Behaviour within a single analytical framework to explain how institutional policy environments shape individual behavioural decisions. Collectively, these conceptual, contextual, and theoretical limitations justify the need for the present study and demonstrate its potential contribution to the social marketing and public policy literature.

Second, existing empirical evidence is dominated by studies conducted in high-income countries with relatively strong regulatory institutions and well-developed public health systems. Consequently, there remains limited empirical evidence from Sub-Saharan Africa, where widespread informal alcohol markets, institutional resource constraints, governance challenges, and socioeconomic inequalities create a substantially different policy environment. These contextual differences limit the generalisability of existing findings to countries such as Kenya.

Third, while behavioural theories and institutional perspectives have independently been used to explain alcohol-related behaviour, relatively few studies have integrated Institutional Theory and the Theory of Planned Behaviour within a single analytical framework to explain how institutional policy environments shape individual behavioural decisions. This theoretical gap restricts understanding of the complementary institutional and psychological mechanisms through which policy interventions influence behavioural change.

Unlike previous studies that have predominantly examined individual alcohol control measures independently, this study conceptualises Policy Response as a multidimensional construct comprising regulatory enforcement, licensing and compliance, rehabilitation services, public awareness, stakeholder collaboration, and institutional coordination. Guided by Institutional Theory and the Theory of Planned Behaviour, the study provides a more comprehensive explanation of how coordinated policy interventions influence consumer behavioural change within informal alcohol markets. Consequently, the study contributes both theoretically and empirically to the growing body of social marketing literature by providing evidence from Central Kenya, a context that remains underrepresented in international behavioural and public health research.

To address these conceptual, contextual, and theoretical gaps, this study examines the influence of Policy Response on Consumer Behavioural Change regarding unregulated alcohol consumption in Central Kenya. Guided by Institutional Theory and the Theory of Planned Behaviour, the study conceptualises Policy Response as an integrated multidimensional construct and empirically evaluates its influence using Partial Least Squares Structural Equation Modelling (PLS-SEM). In doing so, the study provides context-specific evidence from a low- and middle-income country and advances understanding of how coordinated policy interventions contribute to sustainable behavioural change within informal alcohol markets.

This study makes several important contributions to the social marketing, public policy, and behavioural change literature. Conceptually, it advances alcohol policy research by operationalising Policy Response as a multidimensional construct encompassing regulatory enforcement, licensing and compliance, public awareness, rehabilitation support, stakeholder collaboration, and institutional coordination, rather than examining individual policy instruments independently. Theoretically, the study integrates Institutional Theory with the Theory of Planned Behaviour to provide a more comprehensive explanation of how institutional environments influence individual behavioural decisions. Methodologically, the study contributes empirical evidence based on Partial Least Squares Structural Equation Modelling (PLS-SEM), providing robust quantitative evidence of the relationship between Policy Response and Consumer Behavioural Change. Contextually, it extends the limited body of evidence from Sub-Saharan Africa by examining unregulated alcohol consumption within Central Kenya, thereby offering practical insights for policymakers and social marketing practitioners working in resource-constrained environments characterised by informal alcohol markets.

POLICY RESPONSE

Policy Response refers to the coordinated set of legislative, regulatory, institutional, and behavioural interventions implemented by governments and other stakeholders to address identified public health and social challenges. Within alcohol control, policy responses extend beyond statutory regulation to encompass enforcement mechanisms, licensing systems, institutional coordination, rehabilitation services, public awareness campaigns, stakeholder collaboration, monitoring, and evaluation. Contemporary public policy literature increasingly recognises that effective policy

implementation requires coordinated action across multiple institutions rather than reliance on isolated regulatory measures (WHO, 2022; WHO, 2024).

Recent studies demonstrate that policy effectiveness depends not only on the quality of policy design but also on implementation fidelity, institutional capacity, resource availability, governance structures, and stakeholder engagement (Carpenter & Dobkin, 2022; Manthey et al., 2024). Consequently, policy response is increasingly viewed as a multidimensional governance mechanism that shapes behavioural outcomes by creating supportive regulatory environments, strengthening accountability systems, and facilitating access to preventive and rehabilitative services.

Although considerable progress has been made in strengthening alcohol control policies globally, empirical evidence indicates that policy effectiveness varies substantially across countries and institutional contexts. While high-income countries have reported significant reductions in harmful alcohol consumption following comprehensive policy implementation, many low- and middle-income countries continue to experience limited policy effectiveness due to weak enforcement capacity, fragmented institutional coordination, corruption, informal alcohol markets, and inadequate financial and human resources (WHO, 2024; OECD, 2021). These contrasting findings suggest that policy success depends not merely on the existence of legislation but on the effectiveness with which policies are implemented, coordinated, monitored, and enforced. Accordingly, the present study conceptualises Policy Response as an integrated multidimensional construct capable of influencing consumer behavioural change through multiple complementary mechanisms.

Alcohol control policies are increasingly viewed as behavioural interventions because they shape the social, economic, and environmental conditions within which consumption decisions are made. Rather than relying exclusively on punitive regulation, effective policy responses seek to reduce behavioural risk by modifying access to alcohol, strengthening regulatory compliance, expanding rehabilitation services, promoting responsible consumption, and creating supportive environments that encourage healthier choices. Such approaches recognise that sustainable behavioural change requires coordinated action across government agencies, healthcare institutions, community organisations, law enforcement agencies, and civil society.

The World Health Organization identifies several policy domains that consistently contribute to reductions in harmful alcohol consumption. These include regulation of alcohol availability through licensing systems, restrictions on marketing and promotion, enforcement of minimum legal drinking age requirements, taxation and pricing policies, drink-driving countermeasures, expanded treatment and rehabilitation services, and public education programmes designed to improve awareness of alcohol-related harms (World Health Organization, 2024). Collectively, these interventions seek to reduce both the demand for and supply of harmful alcoholic products while creating institutional environments that facilitate healthier behavioural choices.

Within developing countries, however, policy implementation frequently encounters institutional challenges that limit effectiveness. Weak enforcement capacity, inadequate financial resources, fragmented governance structures, political interference, informal alcohol markets, and limited coordination among implementing agencies often reduce the impact of otherwise well-designed regulatory frameworks. Consequently, behavioural outcomes depend not only on policy

design but also on implementation quality, institutional commitment, and sustained stakeholder collaboration. These implementation challenges are particularly evident where unregulated alcohol production and distribution remain widespread despite the existence of comprehensive legislative frameworks.

Recent social marketing scholarship similarly recognises that effective behavioural change requires supportive policy environments capable of reinforcing voluntary behavioural decisions. Although individual-level interventions remain important, behaviour is simultaneously influenced by structural factors including legislation, organisational practices, service accessibility, and community norms. Policy therefore functions as an enabling mechanism that complements behavioural interventions by reducing environmental barriers, increasing opportunities for healthier choices, and strengthening institutional support for sustained behavioural change (Lee et al., 2023; Rundle-Thiele et al., 2023).

In Kenya, alcohol control has evolved into a multi-sectoral policy agenda involving national government, county governments, public health institutions, law enforcement agencies, rehabilitation providers, educational institutions, and community organisations. The implementation of the Alcoholic Drinks Control Act and subsequent county legislation has strengthened licensing procedures, increased inspections, expanded public awareness programmes, and enhanced enforcement against illicit alcohol production and distribution. The National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) has further coordinated prevention campaigns, treatment services, research, and stakeholder engagement aimed at reducing alcohol-related harm.

Despite these institutional efforts, significant implementation gaps remain. Recurring incidents involving deaths and disabilities associated with illicit alcohol, continued availability of second-generation alcoholic beverages, and high relapse rates among recovering users suggest that policy interventions have not consistently translated into sustained behavioural change. These observations indicate that policy effectiveness depends not merely on the existence of regulatory frameworks but on the extent to which policy interventions address behavioural, institutional, and social determinants of alcohol consumption.

The present study conceptualises Policy Response as a multidimensional construct comprising regulatory enforcement, licensing and compliance, public awareness and education, rehabilitation and treatment support, stakeholder collaboration, and institutional coordination. These dimensions collectively reflect the integrated nature of contemporary alcohol control policy and recognise that sustainable consumer behavioural change emerges from coordinated institutional action rather than isolated regulatory activities. This multidimensional conceptualisation provides a comprehensive framework for evaluating how policy interventions influence behavioural outcomes within the context of unregulated alcohol consumption in Central Kenya.

The foregoing review demonstrates that Policy Response extends beyond regulatory compliance to function as a strategic governance mechanism capable of shaping behavioural outcomes. However, the ultimate effectiveness of policy interventions depends on their ability to influence individual decision-making and behavioural adaptation. This necessitates an examination of Consumer Behavioural Change as the primary outcome of policy implementation.

CONSUMER BEHAVIOURAL CHANGE

Consumer Behavioural Change refers to sustained modifications in individuals' attitudes, intentions, decisions, and observable behaviours resulting from exposure to environmental, institutional, social, or psychological influences. Within alcohol control, behavioural change encompasses reductions in harmful alcohol consumption, increased compliance with regulatory requirements, greater utilisation of treatment and rehabilitation services, and the adoption of healthier lifestyle practices. Contemporary behavioural research recognises that sustainable behavioural change is rarely achieved through information provision alone but instead emerges from interactions among individual motivations, social influences, institutional environments, and supportive public policies (Ajzen, 2020; French & Gordon, 2019; Kotler et al., 2023).

Evidence from behavioural science and social marketing consistently demonstrates that successful behavioural change interventions combine educational, regulatory, environmental, and community-based approaches. While awareness campaigns increase knowledge and influence attitudes, they often produce only modest behavioural changes when implemented in isolation. Greater and more sustained behavioural outcomes are achieved when educational interventions are reinforced through supportive policies, regulatory enforcement, stakeholder engagement, and accessible rehabilitation services (Janssen et al., 2013; Truong et al., 2021; Mugambi & Howcutt, 2026). These findings underscore the importance of integrating upstream policy interventions with downstream behavioural strategies to create environments that support voluntary and sustained behavioural change.

Behavioural change is a dynamic and multidimensional process rather than a single behavioural event. Individuals often progress through stages of awareness, intention formation, behavioural adoption, maintenance, and, in some cases, relapse before achieving sustained behavioural outcomes. Consequently, successful alcohol control interventions must address not only knowledge deficits but also the psychological, social, economic, and environmental factors that influence drinking behaviours. This perspective recognises that behaviour is shaped by the interaction between individual decision-making processes and the broader institutional environment within which those decisions occur.

The Theory of Planned Behaviour provides one of the most widely accepted explanations of behavioural change. The theory proposes that behavioural intention is the immediate determinant of behaviour and is influenced by three interrelated constructs: attitudes towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). In alcohol control, individuals are more likely to reduce harmful alcohol consumption when they perceive the benefits of behavioural change, experience positive social expectations, and believe they possess the capacity and opportunities to adopt healthier behaviours. Public policies can strengthen these determinants by improving access to treatment services, limiting alcohol availability, and reinforcing social norms that discourage harmful drinking.

Recent public health research further demonstrates that behavioural change is influenced by supportive institutional environments that enable individuals to translate intentions into sustained action. Effective policy responses reduce structural barriers by increasing access to rehabilitation services, strengthening regulatory compliance, improving public

awareness, and creating social conditions that reinforce healthier choices. Consequently, behavioural change is increasingly understood as a product of interactions between individual motivation and supportive governance systems rather than personal choice alone.

Empirical evidence consistently demonstrates that comprehensive alcohol control policies contribute to positive behavioural outcomes. Studies have shown that strengthened enforcement, licensing regulation, community mobilisation, rehabilitation services, and public education programmes reduce alcohol-related harm by discouraging risky drinking behaviours and encouraging treatment seeking. Nevertheless, these outcomes vary considerably across settings because behavioural responses are influenced by institutional capacity, cultural norms, socioeconomic conditions, and the consistency of policy implementation. This suggests that policy effectiveness depends not only on the content of interventions but also on how individuals perceive, experience, and respond to policy measures within their communities.

In Kenya, behavioural change remains a significant challenge despite considerable investment in alcohol control initiatives. National and county governments have expanded enforcement operations, rehabilitation programmes, public awareness campaigns, and community partnerships aimed at reducing harmful alcohol consumption. While these initiatives have contributed to increased public awareness and improved access to treatment services, recurring incidents involving illicit alcohol, persistent relapse among recovering users, and continued demand for unregulated alcoholic beverages indicate that sustainable behavioural change has not yet been fully achieved. These observations suggest that policy interventions must be accompanied by supportive institutional environments capable of reinforcing long-term behavioural transformation.

In this study, Consumer Behavioural Change is conceptualised as measurable improvements in alcohol-related behaviours resulting from effective policy implementation. Behavioural outcomes include reduced consumption of unregulated alcohol, increased compliance with alcohol control regulations, greater utilisation of rehabilitation and treatment services, lower relapse tendencies, and adoption of healthier lifestyle practices. This multidimensional perspective recognises that meaningful behavioural change extends beyond immediate reductions in alcohol consumption to encompass sustained improvements in individual decision-making, health-seeking behaviour, and responsible alcohol-related practices. Examining these behavioural outcomes provides an appropriate basis for evaluating the effectiveness of Policy Response in promoting long-term public health improvements within the context of unregulated alcohol consumption in Central Kenya.

The reviewed literature indicates that Consumer Behavioural Change is influenced by a complex interaction of individual, institutional, and environmental factors. Consequently, understanding behavioural change in the context of unregulated alcohol consumption requires examination of the policy environment within which behavioural decisions are made. This perspective provides the conceptual basis for examining the influence of Policy Response on Consumer Behavioural Change in the present study.

THEORETICAL FRAMEWORK

This study is anchored on Institutional Theory and supported by the Theory of Planned Behaviour (TPB)**.** The two theories provide complementary explanations of how Policy Response influences Consumer Behavioural Change in addressing unregulated alcohol consumption. Institutional Theory explains how formal institutions, governance structures, and regulatory systems shape behavioural outcomes through policy implementation and institutional coordination, while TPB explains the psychological mechanisms through which individuals translate these institutional influences into behavioural intentions and actual behaviour.

Institutional Theory

Institutional Theory, developed by DiMaggio and Powell (1983) and further advanced by North (1990) and Scott (2014), explains how formal institutions, regulatory frameworks, governance systems, and social norms influence organisational and individual behaviour by establishing rules, monitoring compliance, and enforcing legitimate standards. The theory argues that individuals and organisations adapt their behaviour in response to coercive, normative, and cognitive institutional pressures, making behavioural outcomes dependent not only on personal preferences but also on the broader institutional environment.

Within public health, Institutional Theory provides a useful framework for explaining how governments influence health-related behaviours through legislation, regulatory enforcement, institutional coordination, licensing systems, public awareness programmes, and rehabilitation services (Scott, 2014; WHO, 2024). Effective policy implementation strengthens institutional legitimacy, improves regulatory compliance, and creates supportive environments that discourage harmful alcohol consumption while facilitating healthier behavioural choices (Babor et al., 2023; WHO, 2024).

The theory is particularly relevant in the Kenyan context, where alcohol control involves multiple actors, including national and county governments, NACADA, law enforcement agencies, healthcare institutions, rehabilitation providers, and community organisations. The effectiveness of alcohol control therefore depends not merely on the existence of legislation but on institutional capacity, stakeholder coordination, adequate resource allocation, and consistent enforcement. Consequently, Institutional Theory provides the principal explanation of how Policy Response influences Consumer Behavioural Change.

Despite its strengths, Institutional Theory has been criticised for placing greater emphasis on institutional conformity than on individual decision-making processes (Scott, 2014). While the theory explains how regulatory environments influence behaviour, it provides limited insight into how individuals develop behavioural intentions or respond differently to similar policy interventions. This limitation justifies complementing Institutional Theory with the Theory of Planned Behaviour.

Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB), proposed by Ajzen (1991), explains behaviour as a function of behavioural intention, which is determined by attitudes towards the behaviour, subjective norms, and perceived behavioural control. TPB has become one of the most influential behavioural theories in public health and social marketing because it provides a robust explanation of how individuals evaluate behavioural alternatives before adopting or rejecting specific behaviours (Ajzen, 2020; French & Gordon, 2019).

In the context of unregulated alcohol consumption, TPB suggests that individuals are more likely to reduce harmful drinking when they develop negative attitudes towards excessive alcohol use, perceive supportive social norms favouring responsible behaviour, and believe they possess the ability and resources to modify their drinking behaviour. Policy interventions such as regulatory enforcement, public awareness campaigns, rehabilitation services, and community education strengthen these behavioural determinants by increasing awareness of alcohol-related harms, reinforcing positive social expectations, and enhancing individuals' confidence in their capacity to change (Ajzen, 2020; Kotler et al., 2023).

Nevertheless, TPB has been criticised for focusing primarily on individual cognitive processes while giving comparatively limited attention to institutional and environmental influences that shape behavioural opportunities (Ajzen, 2020). In contexts characterised by weak regulatory systems and widespread informal alcohol markets, behavioural choices are influenced by institutional conditions as much as by individual intentions. Consequently, TPB alone cannot fully explain behavioural outcomes in complex policy environments.

Theoretical Integration and Relevance to the Study

Neither Institutional Theory nor the Theory of Planned Behaviour independently provides a complete explanation of behavioural change associated with unregulated alcohol consumption. Institutional Theory explains how policy environments, governance systems, and institutional capacity shape behavioural opportunities, whereas TPB explains how individuals interpret these external influences through attitudes, subjective norms, perceived behavioural control, and behavioural intentions. Integrating the two theories therefore provides a more comprehensive explanation of how coordinated policy interventions influence consumer behaviour.

The integrated theoretical framework underpins the conceptualisation of Policy Response as a multidimensional construct comprising regulatory enforcement, licensing and compliance, public awareness, rehabilitation support, stakeholder collaboration, and institutional coordination. These policy mechanisms simultaneously strengthen institutional effectiveness and influence individual behavioural determinants, thereby increasing the likelihood of sustained Consumer Behavioural Change. Accordingly, the integration of Institutional Theory and TPB provides the theoretical foundation for the study hypothesis that effective Policy Response positively influences Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya.

EMPIRICAL LITERATURE REVIEW

Empirical evidence consistently demonstrates that comprehensive policy interventions play a significant role in influencing consumer behavioural change related to alcohol consumption. Across public health and social marketing research, studies have shown that policy packages integrating regulatory enforcement, pricing strategies, licensing systems, restrictions on alcohol availability, rehabilitation services, and public awareness programmes are generally more effective than isolated interventions because they simultaneously address multiple determinants of behaviour (Babor et al., 2023; Carpenter & Dobkin, 2022; WHO, 2024). However, the effectiveness of these interventions varies considerably across countries, reflecting differences in institutional capacity, governance systems, implementation fidelity, and socioeconomic contexts.

International evidence generally supports the effectiveness of coordinated alcohol control policies in reducing harmful alcohol consumption and associated health outcomes. The World Health Organization (2024) identifies restrictions on alcohol availability, drink-driving countermeasures, access to treatment services, comprehensive restrictions on alcohol marketing, and alcohol pricing policies as the most cost-effective interventions for reducing alcohol-related harm. Similarly, Babor et al. (2023) argue that integrated alcohol control strategies consistently produce greater public health benefits than fragmented interventions because they address behavioural, environmental, and institutional determinants simultaneously. Nevertheless, a recent systematic review by Manthey et al. (2024) found that evidence regarding the effectiveness of alcohol marketing restrictions alone remains inconclusive, suggesting that sustainable behavioural change is more likely to result from coordinated policy implementation than reliance on individual policy instruments.

Within the social marketing literature, increasing empirical evidence demonstrates that behavioural interventions are considerably more effective when supported by enabling policy environments. French and Gordon (2019) argue that sustainable behavioural change requires an integrated approach combining consumer insight, supportive public policy, stakeholder collaboration, service provision, and environmental change. Likewise, Kotler et al. (2023) emphasise that policy functions as an upstream social marketing intervention by creating institutional environments that facilitate voluntary behavioural change while reducing structural barriers to healthier choices. Consequently, social marketing programmes supported by regulatory interventions, institutional coordination, and community participation consistently report stronger behavioural outcomes than awareness campaigns implemented in isolation.

Behavioural research further demonstrates that policy implementation influences behavioural change by strengthening attitudes, subjective norms, and perceived behavioural control, which are central constructs of the Theory of Planned Behaviour (Ajzen, 2020). Evidence indicates that individuals are more likely to adopt healthier alcohol-related behaviours when policy interventions increase awareness of alcohol-related risks, reinforce supportive social norms, improve enforcement visibility, and expand access to rehabilitation services. These findings suggest that policy interventions influence behavioural outcomes through both institutional mechanisms and individual cognitive processes, supporting the integration of Institutional Theory and the Theory of Planned Behaviour within the present study.

Evidence from low- and middle-income countries presents a more nuanced picture of policy effectiveness. Although many countries have strengthened alcohol control legislation during the past decade, implementation challenges continue

to undermine behavioural outcomes. Weak institutional capacity, fragmented governance systems, limited financial resources, corruption, inconsistent enforcement, and widespread informal alcohol markets frequently reduce the effectiveness of otherwise well-designed alcohol policies. A recent systematic review of alcohol regulatory interventions in low- and middle-income countries concluded that restrictions on alcohol availability and pricing policies generally reduce harmful alcohol consumption, but their effectiveness depends heavily on consistent implementation and statutory enforcement.

Within Sub-Saharan Africa, governments have increasingly adopted legislative and regulatory measures to address harmful alcohol consumption. Nevertheless, enforcement remains inconsistent because of inadequate institutional coordination, limited monitoring systems, insufficient human and financial resources, and continued availability of illicit alcohol through informal supply chains. Consequently, several studies argue that successful alcohol control requires integrated governance approaches combining regulation, community participation, public awareness, rehabilitation services, and inter-agency collaboration rather than relying solely on legal enforcement (WHO, 2024).

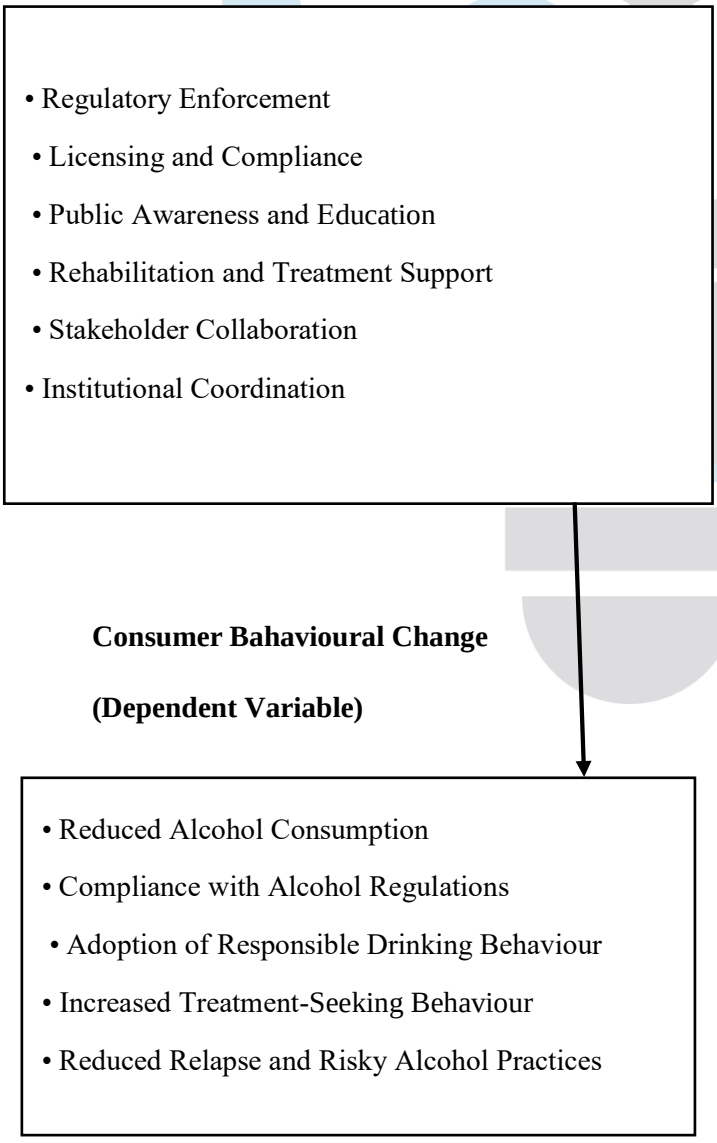
Kenya provides a particularly important setting for examining the effectiveness of Policy Response. The Alcoholic Drinks Control Act, together with interventions implemented by the National Authority for the Campaign Against Alcohol and Drug Abuse (NACADA) and county governments, has strengthened licensing regulations, enforcement operations, public education campaigns, and rehabilitation programmes. Despite these initiatives, recurrent outbreaks associated with illicit and second-generation alcohol continue to occur, particularly within Central Kenya. Existing evidence suggests that inconsistencies in policy implementation, institutional fragmentation, inadequate resource allocation, and continuing informal alcohol markets continue to constrain the effectiveness of alcohol control interventions (NACADA, 2024; WHO, 2024).

Collectively, the reviewed empirical literature provides substantial evidence that coordinated policy interventions positively influence consumer behavioural outcomes. However, three important gaps remain. First, many studies evaluate individual policy instruments such as taxation, licensing, marketing restrictions, or enforcement independently rather than conceptualising Policy Response as an integrated multidimensional construct. Second, the majority of empirical evidence originates from high-income countries, limiting the generalisability of findings to low- and middle-income countries characterised by informal alcohol markets and constrained institutional capacity. Third, relatively few studies integrate behavioural and institutional theories while employing Partial Least Squares Structural Equation Modelling (PLS-SEM) to explain how coordinated policy interventions influence consumer behavioural change. The present study addresses these conceptual, contextual, theoretical, and methodological gaps by examining Policy Response as a multidimensional construct comprising regulatory enforcement, licensing and compliance, public awareness, rehabilitation support, stakeholder collaboration, and institutional coordination, and empirically testing its influence on Consumer Behavioural Change in Central Kenya using PLS-SEM.

CONCEPTUAL FRAMEWORK

The conceptual framework presented in Figure 1 illustrates the hypothesised relationship between Policy Response and Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya. Drawing on Institutional Theory and the Theory of Planned Behaviour, the framework conceptualises Policy Response as a multidimensional construct comprising regulatory enforcement, licensing and compliance, public awareness and education, rehabilitation support, stakeholder collaboration, and institutional coordination. These policy dimensions are expected to facilitate positive Consumer Behavioural Change by reducing harmful alcohol consumption, promoting regulatory compliance, encouraging responsible drinking practices, increasing treatment-seeking behaviour, and reducing relapse. The framework provides the basis for the study hypothesis and guides the empirical testing undertaken using Partial Least Squares Structural Equation Modelling (PLS-SEM).

Figure 1: Conceptual Framework



Source: Researcher (2026), adapted from Ajzen (1991), DiMaggio and Powell (1983), North (1990), Scott (2014), French and Gordon (2019), and Kotler et al. (2023).

METHODOLOGY

Research Design

This study adopted a positivist research philosophy and employed an explanatory cross-sectional research design to examine the influence of Policy Response on Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya. The positivist paradigm was appropriate because the study sought to objectively test hypothesized relationships between observable variables using quantitative methods. The explanatory design enabled the investigation of causal relationships by determining whether variations in policy response significantly influenced behavioural change among alcohol consumers.

A cross-sectional survey was employed because it facilitated the collection of data from diverse stakeholder groups at a single point in time, providing an efficient means of examining perceptions of policy implementation and behavioural outcomes. The study further adopted a quantitative approach to enable statistical testing of the proposed relationship using Structural Equation Modelling (SEM). This methodological approach is widely recommended in behavioural and public policy research where theory testing and prediction are the primary objectives (Hair et al., 2022; Saunders et al., 2023).

Study Area

The study was conducted in Murang'a, Kiambu, Kirinyaga, and Nyeri Counties in Central Kenya. These counties were purposively selected because they have consistently experienced high prevalence of unregulated alcohol consumption, including illicit and second-generation alcoholic beverages. The region has also been the focus of numerous government interventions, including enforcement operations, licensing reforms, public awareness campaigns, and rehabilitation programmes coordinated by national and county governments.

The selected counties provide an appropriate setting for evaluating policy effectiveness because they exhibit substantial variation in enforcement intensity, institutional capacity, and public compliance with alcohol control regulations. Consequently, they offer an ideal context for examining whether policy interventions translate into meaningful behavioural change among affected populations.

Target Population

The target population comprised stakeholders directly involved in alcohol control interventions and individuals affected by unregulated alcohol consumption. Specifically, the study included recovering alcohol users enrolled in rehabilitation programmes, community members residing in affected areas, rehabilitation counsellors, county alcohol control officers, public health officials, and representatives from agencies responsible for alcohol regulation and enforcement.

These stakeholder groups were selected because they possess direct experience with policy implementation, enforcement activities, rehabilitation services, and behavioural outcomes associated with alcohol control initiatives. Their inclusion enabled the study to obtain comprehensive perspectives on the effectiveness of policy responses in influencing consumer behaviour.

Sample Size and Sampling Procedure

The study employed Cochran's (1977) sample size determination formula for large populations, yielding a minimum sample size of 384 respondents. To improve statistical precision and accommodate potential non-response, the sample was increased to 420 respondents.

A multistage sampling procedure was adopted. First, the four counties were purposively selected because of their documented burden of unregulated alcohol consumption and the presence of active alcohol control programmes. Second, sub-counties were stratified according to the prevalence of alcohol-related problems and intervention intensity. Third, respondents were proportionately allocated across strata using probability proportional to size (PPS). Community respondents were selected using systematic random sampling, while recovering alcohol users were identified through controlled snowball sampling within accredited rehabilitation centres. Institutional respondents, including public health officers, enforcement officers, and rehabilitation professionals, were selected purposively based on their involvement in alcohol control policy implementation.

Of the 420 questionnaires administered, 386 were completed and found suitable for analysis, representing a 91.9% response rate, which exceeded the minimum acceptable threshold for behavioural research and reduced the likelihood of non-response bias.

Data Collection

Primary data were collected using a structured questionnaire comprising closed-ended items measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was developed from validated measures reported in previous studies on alcohol policy, public health interventions, and behavioural change, and was contextualized to reflect the Kenyan alcohol control environment.

The independent variable, Policy Response, was operationalized using indicators reflecting the effectiveness of alcohol control legislation, enforcement intensity, institutional coordination, resource allocation, licensing and compliance mechanisms, public awareness support, and monitoring of policy implementation. These dimensions capture the extent to which public institutions effectively implement and enforce alcohol control measures.

The dependent variable, Consumer Behavioural Change, was measured using indicators reflecting reductions in alcohol consumption, increased compliance with alcohol regulations, improved treatment-seeking behaviour, reduced relapse tendencies, and sustained adoption of healthier behavioural practices. These indicators assessed the extent to which policy interventions translated into measurable behavioural outcomes among consumers.

To complement the survey findings, secondary data were obtained from county alcohol control committees, NACADA reports, Ministry of Health publications, rehabilitation centres, and county licensing and enforcement records. These records provided contextual information regarding enforcement operations, rehabilitation trends, licensing compliance, and implementation of alcohol control policies between 2019 and 2024.

Measurement of Variables

Policy Response served as the independent construct and was conceptualized as the collective actions undertaken by government institutions to regulate alcohol production, distribution, marketing, and consumption. The construct comprised indicators relating to legislative implementation, enforcement effectiveness, institutional collaboration, policy consistency, adequacy of resources, regulatory compliance, and public support initiatives.

Consumer Behavioural Change constituted the dependent construct and referred to observable changes in alcohol-related behaviours resulting from policy interventions. It was measured through indicators capturing reduced alcohol consumption, increased compliance with alcohol regulations, treatment uptake, responsible drinking practices, relapse reduction, and long-term behavioural maintenance.

All measurement items were rated on a five-point Likert scale, where higher scores represented stronger agreement with the statements describing policy effectiveness and behavioural change.

Validity and Reliability

The questionnaire underwent expert review by specialists in marketing, public health, and research methodology to establish content validity and ensure that the measurement items adequately represented the study constructs. Construct validity was subsequently evaluated using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

The suitability of the data for factor analysis was confirmed by a Kaiser–Meyer–Olkin (KMO) value of 0.903 and a statistically significant Bartlett's Test of Sphericity ($\chi^2 = 3567.21$, $p < .001$), indicating adequate sampling and sufficient inter-item correlations.

Internal consistency reliability was assessed using Cronbach's alpha and Composite Reliability (CR). Policy Response recorded a Cronbach's alpha of 0.914 and a Composite Reliability of 0.93, while Consumer Behavioural Change achieved a Cronbach's alpha of 0.887 and a Composite Reliability of 0.89. Both constructs exceeded the recommended threshold of 0.70, indicating satisfactory reliability. Convergent validity was confirmed through Average Variance Extracted (AVE) values above 0.50 for both constructs, demonstrating that the measurement items adequately represented their respective latent variables.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics Version 29 and SmartPLS 4. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondent characteristics and describe the distribution of the study variables.

Prior to hypothesis testing, the measurement model was evaluated through assessments of reliability, convergent validity, discriminant validity, and multicollinearity. The structural model was then estimated using Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine the effect of Policy Response on Consumer Behavioural Change. The significance of the hypothesized relationship was assessed through a bootstrapping procedure with 5,000 resamples, generating standardized path coefficients, *t*-values, confidence intervals, and *p*-values.

Model quality was evaluated using the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and the Standardized Root Mean Square Residual (SRMR), following current recommendations for reporting PLS-SEM results in marketing and behavioural research.

Ethical Considerations

Ethical approval for the study was obtained from the relevant university ethics review committee before commencement of data collection. Research authorization was subsequently granted by the National Commission for Science, Technology and Innovation (NACOSTI), while additional permissions were obtained from the participating county governments, rehabilitation centres, and relevant public institutions.

Participation in the study was voluntary, and informed consent was obtained from all respondents before data collection. Participants were assured of anonymity and confidentiality, and no personally identifiable information was collected. All data were securely stored and used solely for academic purposes. Respondents were informed of their right to withdraw from the study at any stage without any adverse consequences.

RESULTS

Response Rate and Respondent Characteristics

A total of 420 questionnaires were distributed to respondents drawn from Murang'a, Kiambu, Kirinyaga, and Nyeri counties. Of these, 386 questionnaires were successfully completed and retained for analysis, representing a response rate of 91.9%. The response rate exceeded the minimum threshold recommended for survey-based behavioural research, thereby providing confidence in the representativeness and reliability of the findings. The respondents comprised recovering alcohol users (45.6%), community members (23.8%), rehabilitation counsellors (16.6%), and institutional stakeholders (14.0%), reflecting diverse perspectives on alcohol control policy implementation and behavioural outcomes.

Descriptive Statistics

Descriptive statistics were computed to examine respondents' perceptions of Policy Response and Consumer Behavioural Change. The results are presented in Table 1.

Table 1 Descriptive Statistics of the Study Variables

Variable	Mean	Standard Deviation
Policy Response	3.85	0.91
Consumer Behavioural Change	3.85	0.85

The findings indicate that respondents generally perceived policy interventions aimed at controlling unregulated alcohol consumption to be moderately effective (M = 3.85). Likewise, Consumer Behavioural Change recorded a mean score of 3.85, suggesting that respondents observed moderate improvements in alcohol-related behavioural outcomes. Collectively, these results indicate that although alcohol control policies have contributed to behavioural change, additional efforts are required to strengthen policy implementation, institutional coordination, enforcement consistency, and community engagement to achieve greater behavioural transformation.

Measurement Model Assessment

The reliability and validity of the measurement model were assessed before testing the structural relationships. Internal consistency reliability was evaluated using Cronbach's alpha and Composite Reliability (CR), convergent validity using the Average Variance Extracted (AVE), and discriminant validity using the Heterotrait–Monotrait Ratio (HTMT). The results are presented in Tables 2 and 3.

Table 2 Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Policy Response	0.914	0.930	0.710
Consumer Behavioural Change	0.887	0.890	0.640

The measurement model demonstrated satisfactory psychometric properties. Cronbach's alpha values ranged from 0.887 to 0.914, exceeding the recommended threshold of 0.70, thereby confirming strong internal consistency. Similarly, Composite Reliability values ranged between 0.890 and 0.930, indicating high construct reliability. The AVE values exceeded the recommended minimum threshold of 0.50, confirming adequate convergent validity. These findings demonstrate that the measurement items reliably represented the latent constructs included in the study.

Sampling adequacy was further assessed using the Kaiser–Meyer–Olkin (KMO) statistic and Bartlett's Test of Sphericity. The KMO value of 0.903 indicated excellent sampling adequacy, while Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 3567.21$, $p < .001$), confirming that the data were suitable for factor analysis and structural equation modelling.

Table 3 Discriminant Validity (HTMT Ratio)

Constructs	HTMT
Policy Response – Consumer Behavioural Change	0.742

Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT). The HTMT value of 0.742 was well below the recommended threshold of 0.85, indicating satisfactory discriminant validity and confirming that Policy Response and Consumer Behavioural Change are empirically distinct constructs.

Correlation Analysis

Pearson correlation analysis was conducted to establish the association between Policy Response and Consumer Behavioural Change. The results are presented in Table 4.

Table 4 Correlation Matrix

Variable	1	2
1. Policy Response	1	
2. Consumer Behavioural Change	0.684**	1

Note: p < .01.

The correlation analysis revealed a strong positive and statistically significant relationship between Policy Response and Consumer Behavioural Change ($r = 0.684$, $p < .01$). This finding suggests that improvements in policy implementation, enforcement effectiveness, institutional coordination, and regulatory compliance are associated with positive changes in alcohol-related consumer behaviour. The magnitude of the relationship indicates that Policy Response is an important determinant of behavioural change in addressing unregulated alcohol consumption.

Structural Model Results

The structural model was estimated using Partial Least Squares Structural Equation Modelling (PLS-SEM) to determine the influence of Policy Response on Consumer Behavioural Change. Statistical significance was assessed using the bootstrapping procedure with 5,000 resamples. The results are presented in Table 5.

Table 5 Structural Model Results

Hypothesized Relationship	β	SE	t-value	p-value	Decision
Policy Response → Consumer Behavioural Change	0.387	0.051	10.373	<0.001	Supported

The structural model results demonstrate that Policy Response exerts a positive and statistically significant influence on Consumer Behavioural Change ($\beta = 0.387$, SE = 0.051, $t = 10.373$, $p < .001$). The positive standardized path coefficient indicates that improvements in policy implementation are associated with corresponding improvements in behavioural outcomes among alcohol consumers. Specifically, effective enforcement of alcohol regulations, strengthened

institutional collaboration, consistent policy implementation, adequate resource allocation, and sustained regulatory oversight contribute significantly to reductions in harmful alcohol consumption and the adoption of healthier behavioural practices. Consequently, the null hypothesis stating that Policy Response has no significant influence on Consumer Behavioural Change was rejected, while the alternative hypothesis was supported.

Model Explanatory and Predictive Power

The explanatory and predictive capabilities of the structural model were evaluated using the coefficient of determination (R^2), effect size (f^2), Stone–Geisser's predictive relevance statistic (Q^2), the Standardized Root Mean Square Residual (SRMR), and the Variance Inflation Factor (VIF). The results are presented in Table 6.

Table 6 Model Quality Indicators

Indicator	Value
R^2 (Consumer Behavioural Change)	0.610
f^2 (Policy Response → Consumer Behavioural Change)	0.289
Q^2 (Consumer Behavioural Change)	0.430
SRMR	0.061
VIF	1.890

The structural model exhibited satisfactory explanatory and predictive performance. Policy Response explained 61.0% of the variance in Consumer Behavioural Change ($R^2 = 0.610$), indicating substantial explanatory power. The effect size ($f^2 = 0.289$) indicates a medium-to-large practical effect of Policy Response on Consumer Behavioural Change according to Cohen's (1988) guidelines. Furthermore, the Stone–Geisser predictive relevance value ($Q^2 = 0.430$) exceeded zero, confirming strong predictive relevance.

Model fit was also satisfactory, with an SRMR value of 0.061, which is below the recommended threshold of 0.08, indicating that the structural model adequately fits the observed data. Finally, the Variance Inflation Factor (VIF = 1.890) was well below the recommended threshold of 3.3, confirming that multicollinearity was not a concern.

Hypothesis Testing

The study hypothesized that Policy Response has a positive and significant influence on Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya. Table 7 presents the summary of the hypothesis testing results.

Table 7 Summary of Hypothesis Testing

Hypothesis	β	t-value	p-value	Decision
H_2: Policy Response significantly influences Consumer Behavioural Change.	0.387	10.373	<0.001	Supported

The empirical findings provide strong evidence that Policy Response significantly influences Consumer Behavioural Change. The positive and statistically significant path coefficient indicates that improvements in alcohol control policies including enhanced enforcement, effective institutional coordination, regulatory compliance, and sustained policy implementation promote positive behavioural outcomes among consumers. These findings underscore the critical role of responsive and well-coordinated public policy in addressing unregulated alcohol consumption and support the proposition that strengthening policy implementation can lead to more sustainable behavioural change.

DISCUSSION

The study sought to determine the influence of Policy Response on Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya. The structural model revealed that Policy Response exerts a positive and statistically significant influence on Consumer Behavioural Change ($\beta = 0.387$, $t = 10.373$, $p < .001$), providing empirical support for the study hypothesis. These findings suggest that improvements in policy implementation, enforcement effectiveness, institutional coordination, regulatory compliance, and resource allocation significantly enhance positive behavioural outcomes among alcohol consumers. The findings are consistent with previous studies demonstrating that comprehensive alcohol control policies integrating enforcement, regulatory oversight, treatment services, and public education are more effective than isolated interventions because they address multiple behavioural determinants simultaneously (Anderson et al., 2009; Babor et al., 2023; Carpenter & Dobkin, 2022; WHO, 2024). They further support social marketing scholarship, which argues that sustainable behavioural change is achieved when individual-level interventions are reinforced by supportive policy environments (French & Gordon, 2019; Kotler et al., 2023).

The findings indicate that effective policy responses create an enabling environment that discourages harmful alcohol consumption while reinforcing healthier behavioural choices. Increased enforcement of licensing regulations, restrictions on the production and distribution of illicit alcohol, coordinated institutional action, and sustained public awareness campaigns collectively increase the perceived risks associated with harmful alcohol use while improving access to rehabilitation and support services. Consequently, individuals become more likely to reduce alcohol consumption, seek treatment, comply with regulatory requirements, and adopt healthier lifestyles. These findings corroborate evidence from systematic reviews indicating that behavioural interventions achieve greater effectiveness when supported by coordinated policy implementation, institutional collaboration, and accessible support services rather than awareness campaigns alone (Janssen et al., 2013; Manthey et al., 2024; Mugambi & Howcutt, 2026).

The results are consistent with the Theory of Planned Behaviour (Ajzen, 1991, 2020), which proposes that behavioural intentions are shaped by attitudes, subjective norms, and perceived behavioural control. Within the context of alcohol control, effective policy implementation strengthens negative attitudes towards harmful alcohol consumption, reinforces supportive social norms, and enhances perceived behavioural control through improved access to treatment, counselling, rehabilitation services, and consistent regulatory enforcement. Consequently, policy interventions indirectly strengthen behavioural intentions that ultimately translate into sustained behavioural change. These findings extend the application of TPB by demonstrating that public policy serves as an important contextual mechanism through which behavioural

intentions are formed and maintained, complementing previous applications of TPB within public health and social marketing research (French & Gordon, 2019; Kotler et al., 2023).

The findings also support the propositions of Institutional Theory, which argues that formal institutions, governance systems, and regulatory frameworks shape behaviour through rules, monitoring mechanisms, and enforcement processes (DiMaggio & Powell, 1983; North, 1990; Scott, 2014). In the present study, strengthened enforcement, coordinated institutional action, and consistent implementation appear to have enhanced behavioural compliance by increasing both the legitimacy and visibility of alcohol control measures. These findings reinforce growing international evidence that institutional capacity and governance quality remain fundamental determinants of successful alcohol control policies, particularly in contexts characterised by informal alcohol markets and limited regulatory resources (Babor et al., 2023; WHO, 2022, 2024).

Empirically, the findings corroborate growing evidence that comprehensive alcohol control policies contribute significantly to reducing harmful alcohol consumption. Recent studies have demonstrated that policy packages combining regulatory enforcement, pricing strategies, marketing restrictions, public education, and treatment services are considerably more effective than isolated interventions because they address multiple behavioural and environmental determinants simultaneously (Anderson et al., 2009; Carpenter & Dobkin, 2022; Manthey et al., 2024). Similarly, social marketing research has shown that supportive policy environments strengthen the effectiveness of behavioural interventions by facilitating long-term behavioural maintenance rather than temporary behavioural adjustments (French & Gordon, 2019; Rundle-Thiele et al., 2021; Truong et al., 2021). The present study extends this body of knowledge by demonstrating that Policy Response independently explains a substantial proportion of variation in Consumer Behavioural Change within the Central Kenya context.

The findings also align with emerging evidence from low- and middle-income countries, which indicates that sustainable behavioural change is achieved when regulatory interventions are complemented by community engagement, rehabilitation services, public education, and intersectoral collaboration (Organisation for Economic Co-operation and Development [OECD], 2021; UNODC, 2023; WHO, 2024). Studies conducted in African settings similarly demonstrate that enforcement alone rarely produces lasting reductions in harmful alcohol consumption unless accompanied by accessible treatment services, continuous awareness programmes, and stakeholder participation (WHO, 2022, 2024). From a social marketing perspective, the findings reinforce the proposition that policy functions as a critical upstream intervention by creating enabling environments that reduce structural barriers, strengthen supportive social norms, and facilitate voluntary behavioural change (French & Gordon, 2019; Kotler et al., 2023; Mugambi & Howcutt, 2026).The explanatory power of the structural model further reinforces the practical importance of Policy Response. The model explained 61.0% of the variance in Consumer Behavioural Change ($R^2 = 0.610$), while the effect size ($f^2 = 0.289$) indicated a moderate-to-large practical effect, confirming that Policy Response constitutes a meaningful predictor of behavioural outcomes. Furthermore, the predictive relevance statistic ($Q^2 = 0.430$) demonstrated strong out-of-sample predictive capability, while the SRMR value (0.061) confirmed satisfactory model fit. Collectively, these findings indicate that investments in coordinated policy implementation, institutional capacity, and stakeholder collaboration are likely to produce measurable improvements in alcohol control outcomes, consistent with recommendations from contemporary alcohol policy and social marketing literature (Hair et al., 2022, 2024; WHO, 2024).

Overall, the study contributes to the social marketing and public policy literature by demonstrating that behavioural change is not solely a function of individual motivation or awareness but is also strongly influenced by the broader policy environment within which behavioural decisions are made. The findings therefore underscore the importance of integrating effective policy implementation with broader social marketing strategies to achieve sustainable reductions in unregulated alcohol consumption. By providing empirical evidence from Central Kenya, the study strengthens understanding of how policy responses can support behavioural transformation in low- and middle-income settings facing persistent alcohol-related public health challenges.

CONCLUSION

This study examined the influence of Policy Response on Consumer Behavioural Change in addressing unregulated alcohol consumption in Central Kenya. The findings demonstrate that Policy Response exerts a positive and statistically significant influence on Consumer Behavioural Change, indicating that effective implementation of alcohol control policies plays a critical role in promoting healthier behavioural outcomes. Specifically, strengthened enforcement, regulatory consistency, institutional coordination, adequate resource allocation, and sustained public awareness initiatives were found to contribute significantly to reductions in harmful alcohol consumption and increased adoption of responsible alcohol-related behaviours.

The study further establishes that policy interventions constitute more than regulatory mechanisms; they function as behavioural instruments that shape individual choices by modifying the social, legal, and institutional environment within which alcohol-related decisions are made. The substantial explanatory power of the structural model ($R^2 = 0.610$) demonstrates that well-designed and consistently implemented policy responses account for a considerable proportion of behavioural change among affected populations. These findings therefore provide empirical evidence that effective public policy remains an indispensable component of comprehensive alcohol control strategies.

From a theoretical perspective, the study extends the application of the Theory of Planned Behaviour and Institutional Theory by demonstrating that behavioural change is influenced not only by individual attitudes and intentions but also by the strength of institutional systems responsible for implementing and enforcing public policy. The findings reinforce the proposition that supportive regulatory environments enhance perceived behavioural control, strengthen social norms, and improve compliance with public health interventions. Consequently, the study contributes to the growing body of literature advocating the integration of behavioural theories with institutional perspectives in explaining public health behaviour.

Practically, the study provides evidence that policymakers should move beyond isolated enforcement operations towards integrated policy frameworks that combine effective regulation, institutional collaboration, community engagement, rehabilitation services, and continuous public education. Such an integrated approach is more likely to generate sustainable behavioural change than fragmented policy interventions implemented independently.

Overall, this study demonstrates that effective Policy Response extends beyond regulatory enforcement to function as a strategic behavioural intervention capable of influencing consumer decision-making and promoting sustainable

behavioural change. By integrating institutional and behavioural perspectives within a multidimensional policy framework, the study advances existing alcohol policy and social marketing literature while providing context-specific evidence from Central Kenya. The findings highlight the importance of coordinated governance, institutional capacity, and supportive public policy as essential components of comprehensive strategies aimed at reducing harmful and unregulated alcohol consumption in low- and middle-income countries.

POLICY IMPLICATIONS

The findings have several important implications for alcohol control policy and practice in Kenya and comparable settings.

First, national and county governments should strengthen the implementation and enforcement of existing alcohol control legislation through sustained inspection, licensing, surveillance, and prosecution of illegal alcohol producers and distributors. Consistent enforcement increases regulatory credibility and discourages harmful alcohol-related behaviours.

Second, greater institutional coordination should be established among agencies responsible for alcohol control, including NACADA, county governments, the Ministry of Health, law enforcement agencies, public administration, and community-based organizations. Improved inter-agency collaboration would reduce duplication of responsibilities while enhancing the efficiency and effectiveness of policy implementation.

Third, policymakers should allocate adequate financial, human, and technological resources to support alcohol control programmes. Investments in enforcement capacity, rehabilitation services, monitoring systems, and community outreach initiatives are essential for sustaining behavioural change over the long term.

Fourth, alcohol control policies should be integrated with evidence-based social marketing interventions that promote responsible drinking, increase awareness of alcohol-related harms, reduce stigma associated with treatment seeking, and encourage community participation in prevention efforts. Such integration would enhance both policy acceptance and behavioural compliance.

Finally, governments should institutionalize continuous monitoring and evaluation systems that assess the effectiveness of alcohol control policies using measurable behavioural indicators. Routine policy evaluation would facilitate evidence-informed decision-making and enable timely adjustments to intervention strategies in response to emerging public health challenges.

LIMITATIONS AND FUTURE RESEARCH

This study should be interpreted in light of several limitations. First, the cross-sectional research design limited the ability to establish causal relationships over time. Although statistically significant associations were identified, longitudinal studies would provide stronger evidence regarding the long-term effects of policy interventions on consumer behavioural change.

Second, the study was conducted in four counties within Central Kenya. While these counties provide an appropriate context for examining unregulated alcohol consumption, the findings may not be fully generalizable to other regions with different socioeconomic, cultural, or institutional characteristics.

Third, although primary survey data were complemented with secondary administrative records, some behavioural measures relied on respondents' self-reported perceptions, which may be subject to recall bias or social desirability bias.

Future research should employ longitudinal and experimental designs to evaluate the long-term effectiveness of alcohol control policies and their interaction with behavioural interventions. Comparative studies across different counties and countries would enhance understanding of contextual influences on policy effectiveness. Additionally, future studies should investigate the moderating roles of demographic, socioeconomic, and community-level factors in shaping the relationship between Policy Response and Consumer Behavioural Change. Further research may also examine how digital public communication, social media campaigns, and emerging technologies can complement conventional policy interventions in promoting sustainable behavioural change.

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