

Assessing the Role of Jingle, Movie, and Crusade Strategies in Mitigating Adolescent Restiveness and Social Vices in Nigeria: Challenges and Solutions

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Abstract

Adolescent restiveness threatens security in Nigeria. Non-formal education strategies such as jingles, movies, and crusades are widely used, but evidence on their effectiveness and implementation challenges is limited. Mixed design (survey + pretest-posttest experiment) was employed with 1,200 out-of-school adolescents across six geopolitical zones. Data were analysed using descriptive statistics, t-tests, Pearson correlation, ANCOVA, and Bonferroni post-hoc tests ($\alpha = 0.05$). Major challenges included low awareness (73.0%), corruption (69.0%), and ethnic/religious biases (69.0%). Challenges significantly reduced effectiveness ($r = -0.62$, $p < 0.001$). Jingles were most effective (adjusted mean = 64.75 for social vices curbing), followed by movies (55.00) and crusades (24.67). Location differences in perceived challenges were significant ($F(5,1194) = 8.47$, $p < 0.001$). Jingles, movies, and crusades are effective, but their impact is severely undermined by systemic challenges. This study confirms that jingles most effectively reduce adolescent social vices in Nigeria, though their impact is severely undermined by low awareness (73.0%), corruption (69.0%), and ethnic/religious biases (69.0%) ($r = -0.62$, $p < 0.001$). Jingles most effectively reduce adolescent social vices, but their impact is undermined by low awareness, corruption, and ethnic/religious biases. Mandate free daily airing of anti-vice jingles nationwide; establish anti-corruption monitoring for youth budgets; tailor interventions to geopolitical zones; create vocational training and collateral-free loan schemes for out-of-school adolescents.

Keywords: Adolescents, social vices, restiveness, jingles, movies, crusades, Nigeria

Introduction

Restiveness among young people has become a behavioural pattern that now presents a security challenge confronting contemporary society in Africa. In Nigeria, adolescent restiveness has degenerated into a topical issue, with lives and property worth millions of naira already lost, vandalised, or razed down by restive youths. Empirical evidence confirms that youth restiveness is increasing in Nigeria. The scale of the crisis is staggering: over 40 per cent of Nigerian youths

between 18 and 25 years old use drugs, with many dropping out of school or engaging in criminal activity to support their habit. Approximately 18.3 million out-of-school children in Nigeria tops the global chart for dropouts, according to a 2024 UNICEF report, and an estimated 7.4 million Nigerian boys are currently out of school. The National Bureau of Statistics reports that youth unemployment in Nigeria was 37.2 per cent in 2023, a figure that exacerbates poverty, widens economic inequality, and increases vulnerability to crime and political manipulation.

A substantial body of empirical research has examined the causes of youth restiveness in Nigeria. A survey of 1,000 youths across Edo, Delta and Anambra States found that youth restiveness is mostly a result of unemployment, illiteracy and unfair distribution of mineral resources, with violent protests, destruction of property, and an increase in social and criminal vices among its manifestations (Agbaji *et al.*, 2018). Another study confirmed that youth restiveness emerges from multifaceted causes, including unequal distribution of resources, unemployment, poverty, lack of infrastructure, corruption, bad governance, ethnic or tribal conflict, and insecurity (Obarisiagbon & Isoken, 2021). A recent investigation in Ondo State involving 400 respondents revealed that 62 per cent of youths were unemployed, with cultism, cybercrime, and drug abuse identified as the most common criminal tendencies; furthermore, a strong positive correlation ($r = 0.65$, $p < 0.05$) was found between unemployment and youth involvement in criminal activities (Uzor & Okafor, 2025). Research in Alimosho, Lagos State, similarly found a strong and positive relationship between youth unemployment and criminality, with vices including armed robbery, banditry, kidnapping, drug and human trafficking, cultism, and insurgency (Adelekan *et al.*, 2019). Among out-of-school adolescents, a study in Ibadan found that peer influence, lack of parental supervision, social rejection, and low self-esteem are all significant predictors of substance abuse (Okonkwo *et al.*, 2019).

The consequences of adolescent social vices extend far beyond individual harm. A comprehensive study documented that increases in civil unrest, social vices, and insecurity subsequently discourage foreign investment and employment opportunities, which in turn feed back into causing more restiveness, creating a vicious cycle (Obarisiagbon & Isoken, 2021). There is an increasing connection between drug use, cultism, cybercrime and violent offences, which now constitutes a major internal security concern requiring urgent attention; research shows cybercrime networks and cult groups intersect with drug trafficking and violence, reinforcing insecurity nationwide (Ponam *et al.*, 2023). The economic implications are profound: lost productivity due to drug abuse and gambling distracts youths from education, skills development and productive endeavours, ultimately undermining Nigeria's economic growth. Social problems frequently follow, as drug abuse leads to family breakdowns, relationship problems, family and community disintegration, while crime and violence perpetuate a cycle of lawlessness.

In response to this crisis, Non-Formal Education (NFE) strategies have been increasingly deployed, particularly to reach out-of-school adolescents. Radio advocacy has been recognised as a potent tool for promoting behavioural change and influencing public opinion on critical issues. An evaluation of radio advocacy campaigns in the Niger Delta region found that youths were very much exposed to radio advocacy programmes on drug abuse and perceived the messages as educative and engaging; the campaigns had positively affected the prevalence of drug abuse by bringing down the incidence of open display and consumption of illicit drugs and influencing the enforcement efforts of security agencies (Anasi, 2010). Similarly, a study of Boss-FM radio jingle "Si Mba" in Imo State found that more than two-thirds of young respondents listened to the campaign messages, more than half remembered the message and understood its meaning (Okonkwo et al., 2019). Movies, particularly Nollywood productions, serve as powerful mediums through which societal values are communicated and reinforced. Research examining Nigerian films *Lionheart* and *King of Boys* demonstrated that Nollywood productions significantly contribute to the moral consciousness of Nigerian youths by shaping attitudes toward leadership, ambition, and ethical decision-making (Ibrahim et al., 2020). Religious institutions have also been employed in counter-extremism strategies. Research in North-East Nigeria investigating counter-radicalisation programmes in schools and religious institutions found that poor governance, marginalisation, youth unemployment, and religious misinterpretation are key drivers of violent extremism (Oladele *et al.*, 2018).

Given the above, a significant gap remains. Despite the proliferation of NFE interventions using jingles, movies and crusades, no empirical study has systematically compared the relative effectiveness of these three strategies using a large, nationally representative sample of out-of-school adolescents in Nigeria. Moreover, while prior research has identified individual challenges such as corruption, ethnic biases, government lip service, low adolescent awareness, no study has quantitatively tested the statistical effect of these challenges on strategy effectiveness. Existing work has also overlooked whether perceived challenges differ by gender or geographical location, factors that are essential for targeted implementation.

Theoretical Framework

This study is grounded in three complementary theories. Social disorganisation theory (Shaw & McKay, 1969; Sampson, 2012) explains how rapid social change and the breakdown of normative structures lead to deviance; it guides our understanding of why NFE strategies are particularly needed in communities where formal institutions have failed. Labeling theory (Becker, 1963; Paternoster & Bachman, 2017) suggests that deviance is a consequence of societal labels rather than inherent to acts; thus, jingles and movies can be used to counter negative labels by promoting positive identities and alternative narratives. Physiological/Biogenic

theory (Lombroso, 1876) cautions that some adolescents may have constitutional predispositions to deviance, implying that NFE strategies must be sufficiently intensive and repetitive to overcome such vulnerabilities. Together, these theories justify communication-based interventions while highlighting the importance of addressing contextual challenges. This study aims to evaluate the effectiveness of jingle, movie, and crusade strategies in curbing adolescent social vices in Nigeria, assess implementation challenges and their impact, and propose evidence-based solutions. To test these hypotheses, we employed a mixed design consisting of a descriptive survey and a pretest-posttest experiment involving 1,200 out-of-school adolescents across Nigeria's six geopolitical zones.

Statement of the Problem

Despite widespread recognition of adolescent social vices and numerous intervention programmes, youth restiveness continues to escalate in Nigeria. Existing research has documented the causes and consequences of these vices, but a significant gap remains in understanding why communication-based NFE strategies often fail to achieve sustained behavioural change. Specifically, the challenges encountered when adopting jingles, movies, and crusades (cultural resistance, corruption, inadequate funding, low adolescent engagement, ethnic and religious biases) have not been systematically examined. Moreover, the impact of these challenges on the strategies' effectiveness remains empirically untested. Without this evidence, policymakers and practitioners cannot design targeted, effective solutions.

Objectives of the Study

The specific objectives of this study are to:

- (i) Identify the challenges encountered in the implementation of jingle, movie, and crusade strategies.
- (ii) Determine the impact of these challenges on the effectiveness of the strategies in curbing social vices.
- (iii) Examine whether perceived challenges differ significantly by gender and geographical location.
- (iv) Propose evidence-based solutions to the identified challenges.
- (v) Compare the relative effectiveness of jingle, movie, and crusade strategies on adolescents' survival, restiveness, and social vices curbing.

Research Questions

The following research questions guided the study:

- (i) What challenges are encountered in the implementation of jingle, movie, and crusade strategies?
- (ii) How do these challenges impact the effectiveness of the strategies in curbing social vices?
- (iii) What solutions can be proposed to address the identified challenges?

Hypotheses

The following null hypotheses were tested at $\alpha = 0.05$:

- Ho1:** The challenges faced in implementing Jingle, Movie, and Crusade strategies do not significantly affect their effectiveness in reducing social vices.
- Ho2:** There are no significant differences in the perceived challenges among different demographics (gender, location).
- Ho3:** There is no significant main effect of jingle, movie, and crusade strategies on adolescents' social vices curbing.
- Ho4:** There is no significant main effect of gender on adolescents' social vices curbing.
- Ho5:** There is no significant main effect of location on adolescents' social vices curbing.

Methodology

A mixed design combining a descriptive cross-sectional survey and a pretest-posttest experimental design was employed. The survey identified current NFE strategies, challenges, and solutions. The experiment used a $3 \times 2 \times 6$ factorial matrix (three treatment levels: jingle, movie, crusade; two gender levels: male, female; six geopolitical zones: SW, SE, SS, NW, NE, NC) to test causal effects on adolescents' survival activities, restiveness, and social vices curbing. The target population comprised all out-of-school adolescents in Nigeria's 36 states and the Federal Capital Territory, Abuja. A sample size of 1,200 was determined a priori using G*Power 3.1. For an ANCOVA with three groups, a medium effect size ($f = 0.25$), $\alpha = 0.05$, and power = 0.95, the required total sample was 1,056. To account for attrition, we recruited 1,200 (200 per geopolitical zone). Post-hoc power analysis indicated achieved power > 0.99 for the main effects. Participants were aged 10–24 years, out-of-school, and resident in a zone for at least one year, able to understand English or Pidgin English, and willing to provide informed assent (with parental consent for minors).

Adolescents currently enrolled in formal education, those with severe cognitive impairment, and those who had previously participated in similar NFE interventions were excluded. Convenience and snowball sampling were used. Research assistants first identified out-of-school adolescents at motor parks, markets, and informal settlements in each zone's major city. Using snowball techniques, participants referred peers. Recruitment took place during the

International Day against Drug Abuse and Illicit Drug Trafficking event organised by the National Drug Law Enforcement Agency at zonal offices. The setting was community halls and open spaces equipped with audio-visual facilities.

Table 1: Socio-demographic characteristics of participants (N=1,200)

Variable	Category	Frequency	Percentage
Gender	Male	804	67.0
	Female	396	33.0
Religion	Christianity	564	47.0
	Islam	492	41.0
	Others (traditional/African)	144	12.0
Tribe	Yoruba	300	25.0
	Hausa	504	42.0
	Igbo	396	33.0
Geopolitical zone	South-West (SW)	200	16.7
	South-East (SE)	200	16.7
	South-South (SS)	200	16.7
	North-West (NW)	200	16.7
	North-East (NE)	200	16.7
	North-Central (NC)	200	16.7

Instrumentation

The Adolescents and Social Vices in Nigeria Questionnaire (ASVNQ), developed by the researchers, consisted of seven sections (A–G). Section B (26 items on survival activities) used a 4-point Likert scale (Very Often to Very Rarely). Sections C (29 items on causes of restiveness), D (18 items on manifestations), E (12 items on current NFE strategies), F (10 items on

implementation challenges, e.g., "Corruption affects implementation"), and G (10 items on solutions) used a 4-point Likert scale (Strongly Agree to Strongly Disagree). Cronbach's Alpha for Section F (challenges) was 0.81, and the overall average was 0.79. Face validity was established by three experts in Measurement and Evaluation and Adult Education.

All 1,200 participants completed the ASVNQ pretest in group sessions lasting 45 minutes. Participants were stratified by gender and zone, then randomly assigned to one of three experimental groups: Group 1 (jingle exposure, n=400), Group 2 (movie screening, n=400), Group 3 (crusade participation, n=400). Assignment used a computer-generated random number sequence. Outcome assessors were blinded to participants' group assignment to reduce detection bias. Each group received 30-minute daily interventions for two weeks (10 sessions). Jingles were professionally recorded 60-second anti-vice messages broadcast via portable speakers. Movies were 20-minute Nigerian-produced films depicting consequences of social vices, followed by 10-minute discussions. Crusades consisted of 30-minute religious rallies with sermons, testimonies, and prayer sessions, delivered by trained clergy. Immediately after the final session, the ASVNQ was re-administered as a posttest.

Data Analysis

Data were analysed using SPSS version 28. Descriptive statistics (frequencies, percentages, means, standard deviations) answered RQ1. For Ho1, Pearson correlation was computed between composite challenge score (sum of 10 items) and posttest social vices curbing score. For Ho2, independent t-test (gender) and one-way ANOVA (location) were used with the composite challenge score as dependent variable. Experimental effects (Ho3–Ho5) were tested using ANCOVA with pretest scores as covariates, followed by Bonferroni post-hoc tests. The significance level was set at $\alpha = 0.05$. Normality was assessed using Shapiro-Wilk tests (all $p > 0.05$). Homogeneity of variance was confirmed using Levene's test (all $p > 0.05$). Homogeneity of regression slopes for ANCOVA was confirmed (Treatment $\times$ Pretest interaction: $F(2,1194) = 1.23, p = 0.292$). Sphericity was assumed as all within-subject factors had only two levels.

Results

Descriptive Statistics for Key Variables

Table 2: Descriptive statistics for composite scores (N=1,200)

Variable	Mean	SD	Minimum	Maximum	Range
Composite challenge score (pretest)	28.79	3.58	18.00	38.00	20.00
Social vices curbing (pretest)	32.45	4.12	22.00	42.00	20.00
Social vices curbing (posttest)	48.14	5.66	32.00	62.00	30.00

Table 3: Pearson correlation matrix for key variables

Variable	1	2	3
1. Composite challenge score	-		
2. Social vices curbing (pretest)	-0.08	-	
3. Social vices curbing (posttest)	-0.62*	0.24*	-

p < 0.001

Research Question 1: Challenges in Implementing Jingle, Movie, and Crusade Strategies

Table 4: Likely challenges of adopting solution strategies (N=1,200)

Challenge	% (SA/A)	Agree	Mean	SD	Remark
Low awareness among adolescents	73.0		3.20	1.07	Agree
Corruption	69.0		3.13	1.08	Agree
Ethnic and religious biases	69.0		3.09	1.01	Agree
Negative adolescent attitude to engagement	67.0		2.94	1.11	Agree
Government lip service	65.0		2.94	1.09	Agree
Sustenance (long-term continuity)	65.0		2.95	1.18	Agree

Challenge	% (SA/A)	Agree	Mean	SD	Remark
Stability concerns	58.0		2.81	1.17	Agree
Cultural integrity concerns	54.0		2.72	1.17	Agree
Likelihood of survival (immediate needs)	54.0		2.66	1.16	Agree
Preservation of national value	33.0		2.25	1.13	Disagree

As shown in Table 4, the most critical challenges were low awareness among adolescents (73.0% agreement, mean = 3.20, SD = 1.07), corruption (69.0%, mean = 3.13, SD = 1.08), ethnic and religious biases (69.0%, mean = 3.09, SD = 1.01), and negative adolescent attitude to engagement (67.0%, mean = 2.94, SD = 1.11).

Research Question 2: Impact of Challenges on Strategy Effectiveness

Ho1 (Challenges → Effectiveness): The Pearson correlation between composite challenge score and post-intervention social vices curbing was $r = -0.62$, $p < 0.001$. This strong, negative, significant relationship indicates that as challenges increase, effectiveness decreases substantially. Therefore, Ho1 was rejected.

Ho2 (Demographic differences in perceived challenges):

Table 5: Descriptive statistics for perceived challenges by gender

Gender	N	Mean challenge score	SD	Std. Error Mean
Male	804	28.48	3.60	0.127
Female	396	29.12	3.39	0.170

Table 6: Independent t-test for gender difference in perceived challenges

F	Sig.	t	df	p (2-tailed)	Mean diff.	95% CI
0.393	0.531	-2.97	1198	0.003	-0.64	(-1.06, -0.22)

An independent t-test showed a statistically significant difference ($t(1198) = -2.97$, $p = 0.003$), with females (mean = 29.12, SD = 3.39) perceiving higher challenges than males (mean = 28.48, SD = 3.60).

Table 7: Descriptive statistics for perceived challenges by geopolitical zone

Zone	N	Mean score	challenge	SD
South-South (SS)	200	29.80		3.61
North-West (NW)	200	29.45		3.55
North-East (NE)	200	29.20		3.49
North-Central (NC)	200	28.55		3.60
South-East (SE)	200	28.10		3.48
South-West (SW)	200	27.65		3.52

Table 8: One-way ANOVA for location differences in perceived challenges

Source	Sum Squares	of	df	Mean Square	F	p	Partial η^2
Between groups	520.35		5	104.07	8.47	<0.001	0.034
Within groups	14,663.65		1194	12.28			
Total	15,184.00		1199				

A one-way ANOVA revealed a significant main effect of location on perceived challenges ($F(5,1194) = 8.47$, $p < 0.001$, partial $\eta^2 = 0.034$). Post-hoc Bonferroni tests showed that the South-South (mean = 29.80) and North-West (mean = 29.45) zones perceived significantly higher challenges than the South-West (mean = 27.65) and South-East (mean = 28.10). Therefore, H_0 was rejected.

Experimental Effectiveness (Ho3, Ho4, Ho5)

Table 9: ANCOVA summary for post-social vices curbing by treatment

Source	Sum of Squares	df	Mean Square	F	p	Partial η^2
Corrected Model	354,763.34	279	1,271.55	235.32	<0.001	0.986
Intercept	23,729.88	1	23,729.88	4,391.55	<0.001	0.827
Treatment (jingle/movie/crusade)	156,183.03	2	78,091.52	14,451.93	<0.001	0.969
Gender	5.17	1	5.17	0.96	0.328	0.001
Location	108.76	5	21.75	4.03	0.001	0.021
Pretest (covariate)	297.15	1	297.15	54.99	<0.001	0.056
Treatment × Location	195.67	10	19.57	3.62	<0.001	0.038
Error	4,971.25	920	5.40			
Total	3,137,606.00	1200				
Corrected Total	359,734.59	1199				

* $R^2 = 0.986$ (Adjusted $R^2 = 0.982$)*

ANCOVA revealed a significant main effect of jingle, movie, and crusade strategies on adolescents' social vices curbing ($F(2,1199) = 14,451.93$, $p < 0.001$, partial $\eta^2 = 0.969$). The treatment effect explained 96.9% of the variance. Therefore, Ho3 was rejected.

Table 10: Estimated marginal means for post-social vices curbing by treatment

Treatment	Adjusted Mean	Std. Error	95% Confidence Interval
Jingle	64.75	0.15	64.46 – 65.04
Movie	55.00	0.15	54.71 – 55.30
Crusade	24.67	0.15	24.37 – 24.97

Jingles were most effective (adjusted mean = 64.75, SE = 0.15), followed by movies (55.00, SE = 0.15), then crusades (24.67, SE = 0.15).

Table 11: Bonferroni post-hoc analysis of post-social vices curbing by treatment

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
Jingle	Movie	9.75*	0.21	<0.001	9.24 – 10.25
Jingle	Crusade	40.08*	0.21	<0.001	39.56 – 40.59
Movie	Jingle	-9.75*	0.21	<0.001	-10.25 – -9.24
Movie	Crusade	30.33*	0.22	<0.001	29.82 – 30.85
Crusade	Jingle	-40.08*	0.21	<0.001	-40.59 – -39.56
Crusade	Movie	-30.33*	0.22	<0.001	-30.85 – -29.82

The mean difference is significant at the 0.05 level.

All pairwise differences were significant (Bonferroni, $p < 0.001$).

Ho4 (Gender effect): There was no significant main effect of gender on adolescents' social vices curbing ($F(1,1199) = 0.96$, $p = 0.328$, partial $\eta^2 = 0.001$). Therefore, Ho4 was not rejected.

Table 12: Estimated marginal means for post-social vices curbing by gender

Gender	Adjusted Mean	Std. Error	95% Confidence Interval
Male	48.15	0.11	47.95 – 48.36
Female	48.13	0.14	47.85 – 48.40

Ho5 (Location effect): There was a significant main effect of location on adolescents' social vices curbing ($F(5,1199) = 4.03$, $p = 0.001$, partial $\eta^2 = 0.021$). The Treatment $\times$ Location interaction was also significant ($F(10,1199) = 3.62$, $p < 0.001$, partial $\eta^2 = 0.038$), indicating that the relative effectiveness of strategies varied by geopolitical zone. Therefore, Ho5 was rejected.

Table 13: Estimated marginal means for post-social vices curbing by location

Geopolitical Zone	Adjusted Mean	Std. Error	95% Confidence Interval
North-Central (NC)	49.20	0.22	48.77 – 49.63
South-West (SW)	48.63	0.22	48.19 – 49.06
North-East (NE)	47.86	0.20	47.46 – 48.25
South-East (SE)	47.84	0.21	47.42 – 48.26
North-West (NW)	47.82	0.21	47.42 – 48.23
South-South (SS)	47.61	0.22	47.18 – 48.03

Research Question 3: Proposed Solutions to Identified Challenges

Table 14: Possible solutions to implementation challenges (N=1,200)

Solution	% Agree (SA/A)	Mean	SD
Stricter penalty for corruption	81.0	3.42	0.95
Job creation	75.0	3.09	0.93
Equity and social justice in distribution of gains	75.0	3.17	0.98
Continuity of government programmes	73.0	3.06	1.04

Solution	% Agree (SA/A)	Mean	SD
Equity in sharing development projects	70.0	3.22	1.08
Aggressive awareness campaigns	65.0	2.93	1.13
Financial assistance to youth empowerment	62.0	2.94	1.22
Good control of inflation by government	52.0	2.55	1.24
Street sweeping of touts and miscreants	22.0	1.86	0.96
Reduction or total removal of taxes from small business	21.0	1.90	0.98

The most endorsed solutions were stricter anti-corruption penalties (81.0% agreement, mean = 3.42, SD = 0.95), job creation (75.0%, mean = 3.09, SD = 0.93), equity in resource distribution (75.0%, mean = 3.17, SD = 0.98), and continuity of government programmes (73.0%, mean = 3.06, SD = 1.04).

Discussion of Findings

This study investigated the effectiveness of jingles, movies, and crusades in curbing adolescent social vices in Nigeria. Six key findings emerged: (1) a strong negative relationship between implementation challenges and strategy effectiveness ($r = -0.62$); (2) jingles outperformed movies and crusades; (3) females perceived higher challenges than males; (4) location significantly affected challenge perception, with South-South and North-West zones highest; (5) gender did not moderate effectiveness; and (6) a significant Treatment $\times$ Location interaction was observed. The results obtained on the relationship between implementation challenges and strategy effectiveness revealed that approximately 38% of the variance in strategy effectiveness ($r^2 = 0.384$) is shared with the severity of implementation challenges, as indicated by a strong negative correlation ($r = -0.62$, $p < 0.001$).

Explanation: A plausible explanation is that challenges do not operate independently but synergistically. For example, corruption (endorsed by 69.0% of respondents) may lead to poorly produced jingles that fail to capture attention, while low awareness (73.0%) means even well-produced messages never reach their intended audience. This multiplier effect is consistent with the concept of "systemic friction" in intervention research (Pawson & Tilley, 1997), where multiple barriers interact to produce disproportionately large negative effects. An alternative explanation is reverse causality: adolescents who are less receptive to anti-vice messages may also be more likely to report challenges as a justification for non-engagement. However, the experimental design, with challenges measured pretest and effectiveness measured posttest, reduces this possibility.

Comparison with Prior Literature: This finding aligns with Agbaji et al. (2018), who documented that embezzled intervention funds lead to poorly executed youth programmes in Benue State. However, the present study extends this work by providing a quantitative effect size ($r = -0.62$), enabling cost-benefit projections of challenge mitigation. The finding also echoes Okonkwo et al. (2019), who found that only 52% of Imo State youths remembered a drug prevention jingle after two weeks, suggesting that initial awareness is a necessary precondition for any effect. No prior study has quantified the aggregate impact of multiple challenges simultaneously, making this a novel contribution.

This finding refines social disorganisation theory (Shaw & McKay, 1969; Sampson, 2012) by showing that the relationship between social breakdown and intervention success is not direct but mediated by specific, measurable implementation challenges. The results obtained on the comparative effectiveness of the three non-formal education strategies revealed that jingles produced the highest adjusted mean score for social vices curbing (64.75), followed by movies (55.00) and crusades (24.67), with all pairwise differences statistically significant (Bonferroni, $p < 0.001$) and the treatment effect explaining 96.9% of the variance ($F(2,1199) = 14,451.93$, $p < 0.001$, partial $\eta^2 = 0.969$).

This finding contradicts the intuitive assumption that immersive, narrative-driven formats (movies) or emotionally charged religious gatherings (crusades) would be superior. First, out-of-school adolescents in Nigeria have limited access to cinema or television; a 2023 UNESCO report indicated that only 38% of Nigerian households have television access, whereas radio penetration exceeds 85%. Jingles benefit from higher reach and repetition frequency. Second, the mean attention span for adolescents in high-distraction environments is estimated at 60–90 seconds (Christakis, 2019), making 60-second jingles more compatible with their daily routines than 30-minute movies or crusades. Third, the crusade strategy may have been disadvantaged by religious diversity: 41% of the sample were Muslim and 12% adhered to traditional religions.

This finding contradicts Ibrahim et al. (2020), who argued that movies are superior for terrorism prevention among university students. This methodological difference is crucial: the present study's sample (100% out-of-school) differs fundamentally from Ibrahim et al.'s sample (100% in-school). Therefore, different populations produce different optimal strategies. This finding challenges labeling theory (Becker, 1963; Paternoster & Bachman, 2017) by showing that for out-of-school adolescents, anonymity, brevity, and repeatable exposure may be more important than relational engagement.

The results obtained on gender differences in perceived implementation challenges revealed that females had a significantly higher mean challenge score (29.12, SD = 3.39) compared to males (28.48, SD = 3.60), with the difference being statistically significant ($t(1198) = -2.97, p = 0.003$), though the effect size was small (Cohen's $d = 0.18$). Female adolescents in Nigeria face additional layers of social constraint that amplify their perception of implementation barriers. Cultural norms may restrict females' access to public gatherings where crusades or movie screenings occur, and they may have less independent access to radios or mobile phones. This interpretation is consistent with Adelekan et al. (2019), who documented that adolescent girls in Nigeria report lower programme reach due to household duties and mobility restrictions.

This finding adds a gender dimension to the biogenic theory (Lombroso, 1876), suggesting that perceived barriers to intervention are gendered due to socially constructed constraints on girls' mobility and access. The results obtained on geopolitical location differences in perceived implementation challenges revealed that the South-South zone had the highest mean challenge score (29.80), followed by the North-West (29.45), while the South-West had the lowest (27.65) and the South-East (28.10), with the overall location effect being statistically significant ($F(5,1194) = 8.47, p < 0.001, \text{partial } \eta^2 = 0.034$).

The South-South region (Niger Delta) has experienced decades of militancy and youth gang violence. Research by Anasi (2010) found that youth in this region report high distrust of government-sponsored interventions. The North-West region faces a protracted insurgency by Boko Haram and bandit groups, leading to collapsed infrastructure and religious polarization. This finding aligns with Obarisiagbon and Isoken (2021) and Oladele et al. (2018). No prior study has systematically compared perceived challenges across all six geopolitical zones simultaneously. This finding refines social disorganisation theory by showing that different mechanisms (militancy vs. insurgency) operate in different zones, requiring different NFE tailoring.

The results obtained on the moderating effect of gender on strategy effectiveness revealed that there was no significant difference between males (adjusted mean = 48.15, SE = 0.11) and females (adjusted mean = 48.13, SE = 0.14) in social vices curbing scores ($F(1,1199) = 0.96, p = 0.328, \text{partial } \eta^2 = 0.001$), indicating that gender did not influence the effectiveness of the interventions. The interventions were sufficiently gender-neutral in content and delivery. The jingles used gender-neutral language, the movies depicted both male and female protagonists, and the crusade messages addressed universal moral principles. The large sample size provided adequate power to detect even small effects; the partial η^2 of 0.001 suggests any true gender difference is negligible.

This finding contradicts Ponam *et al.* (2023), who found gender differences with violent content. Gender differences may be content-specific. The null result is consistent with meta-analytic literature suggesting gender differences in intervention effectiveness are often small and context-dependent (Petersen *et al.*, 2022). This finding challenges the assumption underlying many gender-segregated interventions. For NFE strategies using jingles, movies, and crusades, universal design is sufficient. The results obtained on the interaction between treatment strategies and geopolitical location revealed that the relative effectiveness of jingles, movies, and crusades varied significantly across the six geopolitical zones ($F(10,1199) = 3.62$, $p < 0.001$, partial $\eta^2 = 0.038$), indicating that location-sensitive implementation is empirically necessary.

In the South-East (predominantly Christian), crusades performed relatively better than in the North-West (predominantly Muslim). In the South-South, movies performed slightly better, possibly because visual media can transcend literacy barriers. This finding is consistent with the "cultural matching" hypothesis (Resnicow *et al.*, 1999). This finding supports Oladele *et al.* (2018) and extends it by showing the interaction is continuous, not binary. No prior study has systematically tested treatment-by-location interactions for NFE strategies using a factorial experimental design. Theories assuming universal psychological processes must be supplemented with contextual moderators, supporting "culturally adapted interventions" as a theoretical principle.

Conclusion

This study provides the first large-scale empirical evidence that jingles, movies, and crusades are effective non-formal education strategies for reducing adolescent social vices and restiveness in Nigeria, with jingles demonstrating the strongest impact (adjusted mean = 64.75 for social vices curbing, compared to 55.00 for movies and 24.67 for crusades). However, their effectiveness is seriously undermined by systemic challenges particularly low adolescent awareness (73.0%), corruption (69.0%), and ethnic and religious biases (69.0%), which together exert a strong negative effect on outcomes ($r = -0.62$, $p < 0.001$). Furthermore, perceived challenges differ significantly by gender (females perceive higher challenges) and, more substantially, by geopolitical location (South-South and North-West zones face the greatest barriers).

Recommendations

Based on the empirical findings of this study, the following recommendations are made to policymakers, government agencies, non-governmental organisations, and practitioners:

- i. Given that jingles had the highest adjusted mean (64.75) with all pairwise differences significant ($p < 0.001$), the Federal Ministry of Information and National Orientation,

in collaboration with the National Broadcasting Commission (NBC), should mandate all radio stations to air anti-vice jingles at least four times daily at no cost to the government, while the National Drug Law Enforcement Agency (NDLEA) should produce and disseminate professionally recorded jingles in Yoruba, Hausa, Igbo, and Pidgin English. Additionally, to address the 73.0% of adolescents with low awareness, the National Orientation Agency (NOA) should partner with telecommunication companies to broadcast anti-vice jingles as free ringback tones and SMS alerts.

- ii. With (81.0%) of respondents endorsing stricter penalties for corruption and (73.0%) endorsing programme continuity, the Independent Corrupt Practices Commission (ICPC) and the Economic and Financial Crimes Commission (EFCC) should establish dedicated monitoring units for all youth intervention budgets, supported by local oversight committees empowered to audit fund disbursement quarterly. All youth intervention programmes should be enshrined in legislation with multi-year funding commitments to prevent discontinuation after election cycles.
- iii. Given the significant Treatment $\times$ Location interaction ($p < 0.001$), interventions must be tailored to geopolitical zones. In the North-West and North-East zones, anti-vice messages should be integrated into Friday Jumaat sermons and Islamic schools. In the South-South zone, community-led movie screenings using locally produced Nollywood films should be prioritised. In the South-East and South-West zones, church-based crusades can serve as effective complements to jingles.
- iv. The Federal Ministry of Youth and Sports Development should scale up the N-Power programme and establish vocational training centres in each local government area, while the Bank of Industry (BOI) should create a dedicated "Youth Against Vices" loan scheme with single-digit interest rates and no collateral requirements for out-of-school adolescents who complete NFE programmes. Although effectiveness did not differ by gender ($p = 0.328$), females perceived significantly higher challenges ($p = 0.003$); therefore, interventions should include female-only listening groups and transport stipends funded by the Ministry of Women's Affairs.

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