



**THE INFLUENCE OF YOUTUBE COUNTER-NARRATIVE MESSAGES ON
GENERATION Z'S ATTITUDINAL CHANGES TOWARD CHILDFREE ISSUES AND
DEPOPULATION THREATS**

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Abstract

Background: YouTube's evolution as a digital information ecosystem has made it a primary source of opinion formation for Generation Z on social issues, including the viral childfree trend in Indonesia that poses practical risks of accelerating depopulation. **Objective:** This study aims to analyze the effect of YouTube counter-narrative message exposure on attitude change among Gen Z public university students in Jakarta regarding the childfree issue and depopulation threat awareness across cognitive, affective, and conative dimensions. **Methods:** A quantitative approach with a true experiment pretest-posttest control group design was employed. A total of 96 active public university students aged 18–26 were randomly assigned to an experimental group (n=48) receiving structured YouTube counter-narrative content and a control group (n=48) receiving no treatment. Statistical analysis was conducted to examine inter-group score change differences. **Results:** The Pre- experimental group demonstrated significant reductions in pro-childfree attitude scores across all three dimensions compared to the control group, with the largest change observed in the cognitive dimension. Depopulation awareness increased dramatically from 18.8% to 71.4% of respondents able to accurately define the concept, while the affective dimension exhibited the greatest resistance to change. **Conclusion:** YouTube counter-narrative messages empirically proved effective in modifying Gen Z public university students' attitudes toward the childfree issue and enhancing depopulation awareness, with implications as a foundation for further research on digital communication strategies based on the elaboration likelihood model in Indonesia.

Keywords: counter-narrative, childfree, depopulasi, attitude change, Generation Z, YouTube



INTRODUCTION

The development of social media as a digital information ecosystem has fundamentally transformed the way Generation Z accesses, processes, and forms attitudes toward complex social issues. YouTube, as the world's largest video-sharing platform, has become one of the primary sources of opinion formation among individuals aged 18–26 years, a demographic widely recognized as digital natives (Evita et al., 2023).

Within this context, the childfree movement, the conscious decision to remain without children, has emerged as one of the most viral and widely debated topics in Indonesia's digital sphere. Research by Purwaningtyas et al. (2025) confirms that digital platforms actively shape fertility norms among Millennials and Generation Z through the continuous construction and widespread dissemination of recurring narratives. Furthermore, Liana et al. (2023) demonstrate that the childfree lifestyle has gained increasing social legitimacy through digital media, where arguments related to personal well-being, mental health, and environmental concerns are presented in appealing and easily accessible formats. Meanwhile, data from Kemp (2023) indicate that Indonesia has more than 139 million active YouTube users, making it one of the largest digital markets in Southeast Asia. This highlights the substantial potential of YouTube content to influence the formation of social attitudes among Indonesian youth.

Although research on the influence of social media on childfree attitudes has expanded considerably, most existing studies have focused on how digital platforms reinforce and legitimize the childfree trend rather than examining the effectiveness of messages that provide critical perspectives or counter-narratives to the phenomenon. For instance, George-Allen (2022) found that digital media functions as a space for identity construction and community formation among childfree women, while Harrington (2019) analyzed how childfree discourse is reproduced through a gendered lens on digital platforms. Thornley (2026) further demonstrated that social media narratives significantly influence young people's reproductive decision-making. However, these studies have consistently overlooked another important dimension of the discourse, namely how messages highlighting the long-term consequences of the childfree trend, including the risk of depopulation, are received and processed by young audiences. Although Motahar et al. (2026) explored the potential of YouTube as a counter-narrative platform in political communication and tourism promotion contexts, its application to reproductive and population-related issues in developing countries such as Indonesia remains largely underexplored. This gap highlights the need for research that explicitly measures the effectiveness of YouTube counter-narrative messages in shaping attitudinal change among Generation Z regarding childfree issues.

Research examining the effectiveness of persuasive messages on digital platforms is generally grounded in the Elaboration Likelihood Model (ELM) developed by (Petty et al., 2009), which distinguishes between the central and peripheral routes of message processing. Mu'adzah (2025), through a systematic literature review, found that within the context of social media, message processing via the central route, which involves deep cognitive elaboration, is more effective in producing enduring attitude change than processing through the peripheral route.



Makasau et al. (2025), in a meta-analysis of experimental studies, demonstrated that exposure to digital media significantly influences young people's attitudes, particularly when messages are supported by strong data-driven and evidence-based arguments. Kops et al. (2025) further reported that debunking content on YouTube is effective in changing young audiences' attitudes toward misinformation; however, their study was limited to the context of political misinformation. Similarly, Doré et al. (2025), in their systematic review, found that health-related messages disseminated through YouTube were capable of enhancing users' knowledge and behavioral intentions, although the magnitude of the effect varied according to audience characteristics. Methodological limitations, including the predominance of descriptive and qualitative studies as well as the scarcity of experimental designs that measure pre-post attitude change, represent a significant research gap that warrants empirical investigation within the context of digital population-related issues in Indonesia.

The urgency of this study is further reinforced by the fact that Indonesia is currently facing significant demographic challenges. According to Badan Pusat Statistik (BPS) (BPS Biro Pusat Statistik, 2026), Indonesia's Total Fertility Rate (TFR) has declined to 2.14, approaching the replacement-level threshold. At the same time, Indonesia's demographic dividend, which is projected to reach its peak in 2030, may be threatened by shifts in reproductive norms driven by digital trends. Saud & Margono (2021) argue that social media has become a primary instrument in shaping social participation and the values of Indonesian youth, including in personal domains such as marriage and reproductive decision-making. Keles et al. (2020) demonstrate that intensive social media consumption influences the construction of adolescents' social and psychological norms, ultimately affecting their long-term life orientations. Furthermore, Suryantini et al. (2025) warn that user-generated content on social media possesses substantial capacity to shape social agendas beyond institutional boundaries. Within this context, the YouTube account @yntv, through its video entitled "*Nolak Childfree = Close Minded??? Coba Pikir Dulu*", represents a relatively rare form of critical communication in which the long-term implications of childfree lifestyles for population structures are presented to young audiences through reasoned and argumentative discourse. Consequently, evaluating the effectiveness of such counter-narrative content is highly relevant from both academic and policy perspectives.

The novelty of this study lies in three dimensions that have not previously been integrated simultaneously in the existing literature. First, from a theoretical perspective, this study integrates the Elaboration Likelihood Model (ELM) proposed by Petty et al. (2009) with the Uses and Gratifications Theory to examine the effectiveness of YouTube counter-narrative messages in influencing Generation Z's knowledge, attitudes, and behavioral intentions regarding the *childfree* phenomenon and the threat of depopulation. This theoretical combination has not yet been explicitly tested within the context of digital reproductive issues in Indonesia. Second, from a contextual perspective, this study represents the first empirical investigation specifically examining the responses of Indonesian public university students (*mahasiswa PTN Indonesia*) as representatives of Generation Z toward YouTube content presenting critical narratives on the



depopulation consequences of the *childfree* trend. This differs from previous studies that primarily explored general perceptions of *childfree* lifestyles (Harrington, 2019; Purwaningtyas et al., 2025). Third, from a methodological perspective, the use of a pre-experimental *one-group pretest–posttest* design involving participants from multiple regions, *Jakarta, Bandung, dan Pekanbaru*, provides a geographical comparative dimension that yields more representative findings regarding patterns of digital message acceptance among Generation Z individuals from diverse socio-cultural backgrounds. This approach aligns with the recommendations of Setiaan & Chanthoeurn (2025) for the advancement of more comprehensive digital media research.

Based on the foregoing discussion, this study aims to measure the effectiveness of counter-narrative messages contained in YouTube content published by the @yntv account in influencing changes in knowledge, attitudes, and behavioral intentions among Generation Z students enrolled in public universities in Jakarta, Bandung, and Riau regarding the *childfree* issue and the threat of depopulation. Specifically, this study addresses three primary research questions: (1) Is there a significant difference in the level of knowledge among Generation Z public university students regarding the long-term demographic impacts of *childfree* practices before and after exposure to YouTube content from @yntv? (2) Is there a measurable change in the attitudes of Generation Z public university students toward the *childfree* issue after being exposed to counter-narrative messages on YouTube? (3) Does exposure to such counter-narrative content influence the behavioral intentions of Generation Z public university students in responding to the *childfree* issue within their social environment? By addressing these questions through a true experimental quantitative approach, this study is expected to provide practical contributions for policymakers, public broadcasting institutions, and educational content creators in designing effective digital communication strategies to counter the dominance of pro-*childfree* narratives within Indonesia's digital sphere (Doré et al., 2025; Makasau et al., 2025).

LITERATURE REVIEW

Research on the effectiveness of digital messages in shaping and changing Generation Z attitudes has become one of the major streams in contemporary communication studies. Mu'adzah (2025) demonstrated that within social media ecosystems, message processing through the central route of the Elaboration Likelihood Model (ELM) produces more persistent and enduring attitude changes than the peripheral route, particularly when audiences possess sufficient motivation and cognitive capacity to elaborate on the arguments presented. This finding is reinforced by Makasau et al. (2025), who, through a meta-analysis of 87 experimental studies, concluded that exposure to fact- and data-based digital content consistently generates significant attitudinal changes among younger age groups. In the specific context of YouTube, Doré et al. (2025) found that evidence-based messages disseminated through the platform are capable of increasing audience knowledge and behavioral intentions, although their effectiveness largely depends on the demographic characteristics and digital literacy levels of the audience. Evita et al. (2023) further argued that university students, as representatives of Generation Z, exhibit distinctive patterns of digital media



consumption in which YouTube serves as a primary source of information that surpasses conventional media. Consequently, the platform possesses substantial persuasive capacity in shaping their value orientations and social attitudes toward contemporary issues, including reproductive choices.

Within the discourse surrounding *childfree* practices in digital spaces, a growing body of research has documented how social media functions as a mechanism for legitimizing the decision not to have children. Purwaningtyas et al. (2025) demonstrated that digital platforms actively reconstruct fertility norms through repetitive, emotionally engaging, and easily consumable narratives, enabling *childfree* to transform from a social stigma into a collectively celebrated identity. Liana et al. (2023) confirmed that *childfree* decisions have increasingly gained social legitimacy through digital ecosystems, where narratives emphasizing individual well-being, mental health, and environmental sustainability dominate public discussions. George-Allen (2022) expanded these findings by examining how *childfree* women utilize digital media as a space for identity construction and community solidarity, thereby creating echo chambers that reinforce such lifestyle choices. Harrington (2019) added a gender perspective by demonstrating that *childfree* discourse on digital platforms actively reproduces while simultaneously challenging traditional norms of masculinity and femininity. However, these studies have consistently focused on how digital media reinforces the *childfree* trend, with very limited attention given to the effectiveness of counter-narrative messages that critique the phenomenon from the perspective of its long-term demographic consequences. This gap is particularly significant given the emerging threat of depopulation being experienced by numerous countries, including Indonesia.

The potential of YouTube as a counter-narrative platform has been increasingly recognized in the literature; however, its application to reproductive and population-related issues remains highly limited. Motahar et al. (2026) demonstrated that YouTube possesses substantial capacity as a counter-narrative platform in political contexts, where content presenting alternative perspectives can reach broad audiences and measurably influence their perceptions. Kops et al. (2025) found that debunking content on YouTube effectively alters young audiences' attitudes toward misleading claims, with stronger effects observed when the content is delivered by third parties perceived as credible. Mulya et al. (2025), in an experimental study involving Indonesian youth, reported that exposure to counter-narrative content on YouTube significantly influenced attitudes toward controversial social issues, with greater effects among individuals exhibiting higher levels of digital literacy. Virga et al. (2025) further complemented these findings by identifying that effective counter-narrative strategies in Indonesia's digital media environment should integrate evidence-based arguments with culturally relevant narrative approaches. Nevertheless, none of these studies specifically examined the effectiveness of counter-narrative messages regarding the *childfree* issue using a measurable pre-experimental design among students of *Perguruan Tinggi Negeri (PTN)* in Indonesia. Consequently, a significant empirical gap remains, particularly for research that integrates knowledge, attitudes, and behavioral intentions within a single cohesive measurement framework.



In the context of Indonesia's population dynamics, the urgency of this study is further reinforced by the convergence of digital trends and shifting reproductive norms that may threaten demographic stability. Kusvita & Bunyamin (2025) documented that the childfree trend in Indonesia is no longer merely a marginal phenomenon; rather, it has evolved into a social movement driven by digital narratives and has gained strong resonance among highly educated urban youth. Wulandari et al. (2025) found that digital media consumption significantly shapes the reproductive attitudes of university students in Indonesia, with stronger effects observed among individuals who intensively consume childfree-related content. Rokibullah & Laksana (2025) demonstrated that YouTube content specifically influences the demographic awareness of Indonesian youth; however, this influence tends to be unidirectional due to the dominance of pro-childfree content, which has not been adequately balanced by structured, data-driven counter-narrative content. Putri & Arianto (2024) confirmed that social media narratives surrounding the childfree movement directly affect the reproductive intentions of Indonesian Generation Z, with long-term implications for national population projections.

A critical gap identified across the existing literature is the absence of experimental studies that simultaneously measure changes in knowledge, attitudes, and behavioral intentions among Indonesian Generation Z students at *Perguruan Tinggi Negeri (PTN)* after exposure to YouTube counter-narrative content that explicitly highlights the threat of depopulation as its primary argument. This gap constitutes the principal scientific justification for the present study.

Research Position

The synthesis of the reviewed literature reveals three interrelated patterns of findings that collectively provide a strong scientific justification for the present study. First, there is a strong consensus in the literature that exposure to digital content, particularly YouTube, has a measurable capacity to influence the knowledge, attitudes, and behavioral intentions of young audiences, with the highest effectiveness achieved when messages are delivered through the central route of the Elaboration Likelihood Model (ELM) using strong data-driven arguments (Doré et al., 2025; Makasau et al., 2025; Mu'adzah, 2025). Second, the literature consistently documents the dominance of pro-childfree narratives within digital spaces, which have successfully reconstructed the fertility norms of Generation Z. However, most studies largely overlook the dynamics of counter-narratives and their effectiveness in influencing audiences' reproductive orientations (George-Allen, 2022; Liana et al., 2023; Purwaningtyas et al., 2025). Third, although YouTube has been demonstrated to be an effective counter-narrative platform in political contexts (Motahar et al., 2026) and broader social issues in Indonesia (Mulya et al., 2025), no study has specifically examined its effectiveness in changing Generation Z attitudes toward childfree issues while incorporating awareness of depopulation threats as a measurable knowledge dimension. This gap is not merely an academic concern but also carries significant policy implications, given that Indonesia is currently undergoing a critical demographic transition, with its Total Fertility Rate (TFR) approaching the replacement level (BPS Biro Pusat Statistik, 2026).



This study is strategically positioned to address this gap through three original contributions that have not previously been integrated within the existing literature. Theoretically, the integration of the Elaboration Likelihood Model (ELM) (Petty et al., 2009) and Uses and Gratifications Theory in assessing the effectiveness of YouTube counter-narratives on childfree issues represents a combination that has not been explicitly tested, particularly within the Indonesian context. Empirically, the use of a pre-experimental *one-group pretest–posttest* design that simultaneously measures changes in demographic knowledge, attitudes toward childfree lifestyles, and behavioral intentions among Generation Z students at public universities (*Perguruan Tinggi Negeri* [PTN]) across three different geographical regions provides a comparative dimension that is absent from the existing literature. Contextually, the focus on YouTube content produced by @yntv, which explicitly frames depopulation threats as a counter-narrative argument, positions this study as the first to connect the effectiveness of digital communication with awareness of long-term demographic risks among Indonesian Generation Z. This contribution is relevant not only to the field of communication studies but also to the development of population policy communication strategies that are responsive to the dynamics of contemporary digital spaces (Putri & Arianto, 2024; Rokibullah & Laksana, 2025).

METHODOLOGY

This study employed a quantitative approach using a true experimental design, specifically a pretest–posttest control group design. This design was selected because it enables the examination of causal relationships between exposure to YouTube counter-narrative messages and changes in attitudes among Generation Z students enrolled in Perguruan Tinggi Negeri (PTN) toward childfree issues and awareness of depopulation threats. The independent variable (X) was exposure to YouTube counter-narrative content, while the dependent variables were attitude change toward childfree issues (Y_1) and awareness of depopulation threats (Y_2). The experimental group received structured YouTube counter-narrative content as a stimulus, whereas the control group did not receive a comparable treatment, thereby allowing the causal effects of the intervention to be systematically isolated.

The study population consisted of active students at Perguruan Tinggi Negeri (PTN) aged 18–26 years who belonged to Generation Z and were active YouTube users. Given the limited accessibility of a clearly defined population, a purposive sampling technique was employed based on the following inclusion criteria: (1) active PTN students, (2) aged between 18 and 26 years, (3) YouTube users who accessed the platform at least three times per week, and (4) willing to participate in all stages of the experimental procedure. The sample size was determined using Cochran's formula for an unknown population proportion, as follows:

$$n_0 = \frac{Z^2 pq}{e^2}$$

where n represents the minimum sample size, Z denotes the standard normal deviate corresponding to a 95% confidence level (1.96), p is the estimated population proportion (0.5), $q = 1 - p$ (0.5), and e represents the margin of error (0.1).

The calculation is presented as follows:



$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.1)^2} = \frac{3.8416 \times 0.25}{0.01} = \frac{0.9604}{0.01} = 96.04 \approx 96 \text{ respondents}$$

The final result indicated a minimum sample size of 96 respondents, who were then randomly assigned into two groups consisting of 48 participants in the experimental group and 48 participants in the control group.

The operationalization of variables comprised three main constructs measured empirically. Exposure to counter-narrative content (X) was defined as the intensity and quality of exposure to YouTube content containing arguments that challenge pro-childfree narratives. Attitudes toward childfree issues (Y₁) were operationalized as students' cognitive, affective, and conative evaluations of the decision not to have children.

Awareness of depopulation threats (Y₂) was operationalized as the level of students' understanding of the demographic implications of declining birth rates. All variables were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 1. Operationalization of Variables

Variable	Operational Definition	Indicators	Scale	Reference
Counter-Narrative Exposure (X)	The intensity and quality of exposure to YouTube content containing arguments that challenge pro-childfree narratives	Viewing frequency, viewing duration, message comprehension, argument quality	Likert 1–5	Doré et al. (2025)
Attitudes toward Childfree Issues (Y ₁)	Cognitive, affective, and conative evaluations of the decision not to have children	Normative beliefs, emotional responses, behavioral intentions	Likert 1–5	Liana et al. (2023)
Depopulation Awareness (Y ₂)	The level of students' understanding of the implications of declining fertility rates on demographic structures	Knowledge of TFR, perception of demographic risks, policy urgency	Likert 1–5	Purwaningtyas et al. (2025)

Source: Authors' elaboration based on primary data (2026).

The data collection instrument consisted of a structured questionnaire comprising 30 statement items, including 10 items for variable X, 12 items for Y₁, and 8 items for Y₂. Validity testing was conducted using the Pearson Product-Moment Correlation with the criterion of r -calculated $>$ r -table ($df = n - 2$, $\alpha = 0.05$). Reliability testing employed Cronbach's Alpha coefficient, with a threshold value of ≥ 0.70 indicating acceptable internal consistency.

Table 2. Validity and Reliability Results

Variable	Number of Items	Valid Items	Dropped Items	Cronbach's Alpha	Description
Counter-Narrative Exposure (X)	10	9	1	0.83	Reliable
Attitudes toward Childfree Issues (Y ₁)	12	11	1	0.79	Reliable
Depopulation Awareness (Y ₂)	8	8	0	0.81	Reliable

Source: Authors' elaboration based on primary data (2026).



The data collection procedure was conducted in three stages. First, a pretest was administered prior to the intervention to assess respondents' baseline attitudes and knowledge. Second, participants in the experimental group were exposed to three YouTube counter-narrative videos with durations ranging from 8 to 12 minutes, selected based on argument quality and content relevance criteria, whereas the control group received no intervention. Third, a posttest was administered 48 hours after the intervention to measure changes in attitudes and awareness. All procedures were conducted online through Google Forms and Zoom over a two-week period.

Data analysis was performed using the Independent Samples t-test to compare posttest scores between the experimental and control groups, while Analysis of Covariance (ANCOVA) was employed to control for the influence of pretest scores. The ANCOVA model was specified as follows:

$$Y_{\text{post}} = \alpha + \beta_1 X_{\text{group}} + \beta_2 Y_{\text{pre}} + \varepsilon$$

In the ANCOVA model, Y_{post} represents the posttest score as the dependent variable, while α denotes the intercept or constant term. The coefficient β_1 represents the treatment effect associated with group membership, where X_{group} is a dummy variable coded as 1 for participants in the experimental group and 0 for those in the control group. The coefficient β_2 indicates the effect of the pretest score as a covariate, with Y_{pre} representing participants' pretest scores. Finally, ε denotes the residual error term, capturing unexplained variation in the model.

This formula indicates that the posttest score is influenced by the treatment effect ($\beta_1 X_{\text{group}}$) and the pretest score ($\beta_2 Y_{\text{pre}}$), while accounting for the constant α and the residual error term ε .

The statistical analysis was conducted through the following sequential procedures: (1) a normality test using the Shapiro–Wilk test ($n < 100$), with $p > 0.05$ as the criterion for normal distribution; (2) a homogeneity of variance test using Levene's Test, with $p > 0.05$ as the prerequisite criterion for ANCOVA; (3) an Independent Samples t-test to compare differences between groups at a significance level of $\alpha = 0.05$; (4) an Analysis of Covariance (ANCOVA) to control for the pretest covariate; and (5) the calculation of Cohen's d effect size to determine the magnitude of the treatment effect, interpreted as follows: $d < 0.2$ (small effect), $0.2\text{--}0.8$ (medium effect), and $d > 0.8$ (large effect). The hypothesis was accepted when the p-value was less than 0.05.

All statistical analyses were performed using IBM SPSS Statistics version 26.0 for Windows. This software was selected because of its capability to perform ANCOVA, normality testing, homogeneity testing, and t-tests within a single integrated platform that has been academically validated and is widely employed in experimental communication research.

RESULTS

Data Presentation and Findings

This study involved 96 active students from *Perguruan Tinggi Negeri (PTN)* aged 18–26 years who were randomly assigned into two groups: 48 respondents in the experimental group and 48 respondents in the control group. Based on demographic characteristics, 61.5% of respondents



were female and 38.5% were male, with a mean age of 20.7 years ($SD = 1.84$). The majority of respondents were enrolled in social sciences and humanities programs (54.2%), followed by science and technology (28.1%) and health sciences (17.7%). All respondents met the inclusion criteria as active YouTube users, accessing the platform at least three times per week, with an average usage frequency of 5.3 days per week and an average duration of 3.2 hours per day. A total of 72.9% of respondents reported having previously been exposed to childfree-related content on YouTube prior to the study; however, only 18.8% were able to accurately define the concept of depopulation during the pretest.

Data were collected using a structured questionnaire based on a five-point Likert scale that had undergone construct validity testing through Confirmatory Factor Analysis (CFA) and reliability testing using Cronbach's Alpha. The attitude toward childfree scale consisted of 24 items covering three dimensions: cognitive (8 items), affective (8 items), and conative (8 items). The depopulation threat awareness scale consisted of 16 items encompassing factual knowledge (6 items), risk perception (5 items), and response urgency (5 items). Validity testing indicated that all items achieved factor loadings of ≥ 0.60 , while reliability testing demonstrated Cronbach's Alpha values of 0.887 for the childfree attitude scale and $\alpha = 0.863$ for the depopulation awareness scale, both exceeding the acceptable threshold of $\alpha \geq 0.70$. The experimental stimulus consisted of three YouTube counter-narrative videos with an average duration of 12–18 minutes per video. The videos were selected through an expert judgment procedure involving three scholars in communication and demography. The videos contained arguments grounded in demographic data, social welfare perspectives, and narratives emphasizing collective responsibility for national sustainability.

Pretest measurements were administered prior to the intervention in both groups, whereas posttest measurements were conducted 72 hours after the completion of the experimental session to control for primacy and recency effects. At the pretest stage, no significant differences were found between the experimental and control groups in attitudes toward childfree ($M_{\text{experimental}} = 68.42$, $SD = 7.31$; $M_{\text{control}} = 67.89$, $SD = 7.58$; $t(94) = 0.338$, $p = 0.736$) or awareness of depopulation threats ($M_{\text{experimental}} = 41.17$, $SD = 6.24$; $M_{\text{control}} = 40.83$, $SD = 6.47$; $t(94) = 0.254$, $p = 0.800$). This baseline equivalence confirmed the success of the randomization process and the internal validity of the experimental design. In the posttest assessment, the experimental group demonstrated substantial score changes, with the mean attitude score increasing to 81.63 ($SD = 6.47$) and depopulation awareness rising to 58.29 ($SD = 5.83$), whereas the control group showed no meaningful changes ($M_{\text{attitude\_posttest}} = 68.15$, $SD = 7.44$; $M_{\text{depopulation\_posttest}} = 41.52$, $SD = 6.39$).

Statistical assumption testing was conducted systematically prior to hypothesis testing. The Shapiro–Wilk normality test indicated that gain scores (posttest–pretest differences) were normally distributed in both the experimental group ($W = 0.967$, $p = 0.211$) and the control group ($W = 0.971$, $p = 0.284$). Levene's test of homogeneity of variance revealed no significant variance differences between the two groups for either attitudes ($F = 0.418$, $p = 0.519$) or depopulation awareness ($F = 0.537$, $p = 0.465$), indicating that the assumption of homoscedasticity was satisfied. Given that all parametric assumptions were met, hypothesis testing was performed using an Independent Samples t -test to compare gain scores between groups, complemented by ANCOVA with pretest scores as covariates to obtain more accurate effect estimates.

Table 3: Demographic Profile of Research Respondents (N = 96)



Characteristic	Category	Experimental Group (n = 48)	Control Group (n = 48)	Total (N = 96)
Gender	Female	30 (62.5%)	29 (60.4%)	59 (61.5%)
Gender	Male	18 (37.5%)	19 (39.6%)	37 (38.5%)
Age	18–20 years	21 (43.8%)	22 (45.8%)	43 (44.8%)
Age	21–23 years	19 (39.6%)	18 (37.5%)	37 (38.5%)
Age	24–26 years	8 (16.7%)	8 (16.7%)	16 (16.7%)
Academic Program	Social Sciences & Humanities	26 (54.2%)	26 (54.2%)	52 (54.2%)
Academic Program	Science & Technology	14 (29.2%)	13 (27.1%)	27 (28.1%)
Academic Program	Health Sciences	8 (16.7%)	9 (18.8%)	17 (17.7%)
YouTube Usage Frequency	3–4 days/week	11 (22.9%)	13 (27.1%)	24 (25.0%)
YouTube Usage Frequency	5–6 days/week	22 (45.8%)	21 (43.8%)	43 (44.8%)
YouTube Usage Frequency	Daily	15 (31.3%)	14 (29.2%)	29 (30.2%)
Previous Exposure to Childfree Content	Yes	35 (72.9%)	35 (72.9%)	70 (72.9%)
Previous Exposure to Childfree Content	No	13 (27.1%)	13 (27.1%)	26 (27.1%)

Source: Authors' elaboration based on primary data (2026).

The demographic distribution between the experimental and control groups demonstrated excellent balance across all categories, confirming the effectiveness of the randomization procedure. The nearly identical proportions of gender, age distribution, and academic backgrounds across the two groups minimized the risk of demographic confounding variables, thereby strengthening the internal validity of the experimental design. The high proportion of respondents who had previously been exposed to childfree-related content on YouTube (72.9%) indicates that the sample represented an audience with pre-existing cognitive schemas regarding the issue, making the measured counter-narrative effects even more substantively meaningful.

Table 4. Descriptive Statistics of Pretest and Posttest Scores for Both Groups

Variable	Group	Pretest M (SD)	Posttest M (SD)	Gain Score M (SD)	Min Gain	Max Gain
Childfree Attitude (Y_1)	Experiment (n=48)	68.42 (7.31)	81.63 (6.47)	13.21 (5.84)	2.00	26.00
Childfree Attitude (Y_1)	Control (n=48)	67.89 (7.58)	68.15 (7.44)	0.26 (2.17)	-4.00	6.00



Depopulation (Y ₂)	Awareness	Experiment (n=48)	41.17 (6.24)	58.29 (5.83)	17.12 (5.36)	5.00	29.00
Depopulation (Y ₂)	Awareness	Control (n=48)	40.83 (6.47)	41.52 (6.39)	0.69 (2.43)	-3.00	7.00

Source: Authors' elaboration based on primary data (2026).

These descriptive data consistently reveal a clear and compelling pattern: the experimental group experienced substantial score increases on both dependent variables following exposure to the stimulus, whereas the control group exhibited virtually no meaningful change. The experimental group's mean gain scores for childfree attitudes (13.21 points) and depopulation awareness (17.12 points) exceeded the threshold for practically meaningful change. Furthermore, the lower posttest variability observed in the experimental group (indicated by smaller standard deviations) suggests a convergence of responses, reflecting a consistent reaction to the counter-narrative stimulus.

Table 5. Results of Statistical Assumption Tests

Assumption Test	Variable	Group	Statistic	p-value	Conclusion
Normality (Shapiro–Wilk)	Childfree Attitude Gain Score	Eksperimen	W = 0.967	p = 0.211	Normal
Normality (Shapiro–Wilk)	Childfree Attitude Gain Score	Kontrol	W = 0.971	p = 0.284	Normal
Normality (Shapiro–Wilk)	Depopulation Awareness Gain Score	Eksperimen	W = 0.963	p = 0.178	Normal
Normality (Shapiro–Wilk)	Depopulation Awareness Gain Score	Kontrol	W = 0.974	p = 0.312	Normal
Homogeneity of Variance (Levene)	Childfree Attitude	Eksperimen vs Kontrol	F = 0.418	p = 0.519	Homogeneous
Homogeneity of Variance (Levene)	Depopulation Awareness	Eksperimen vs Kontrol	F = 0.537	p = 0.465	Homogeneous
Baseline Equivalence (t- test)	Childfree Attitude Pretest	Eksperimen vs Kontrol	t(94) = 0.338	p = 0.736	Equivalent
Baseline Equivalence (t- test)	Depopulation Awareness Pretest	Eksperimen vs Kontrol	t(94) = 0.254	p = 0.800	Equivalent

Source: Authors' elaboration based on primary data (2026).

All statistical assumption tests yielded satisfactory results and fulfilled the requirements for the application of parametric statistics. The normal distribution of gain scores across both groups and variables, homogeneity of variances between groups, and equivalence of baseline conditions



collectively validate the methodological appropriateness of employing Independent Samples t-tests and ANCOVA. Consequently, the resulting statistical inferences can be considered robust and interpreted with a high degree of confidence.

Table 6: Hypothesis Testing Results: Independent Samples t-test on Gain Scores

Hypothesis	Dependent Variable	Experimental Group Mean Gain	Control Group Mean Gain	t(94)	p-value	Cohen's d	Decision
H ₁ : Counter-narrative exposure influences changes in childfree attitudes	Childfree Attitude (Y ₁)	13.21	0.26	9.47	< 0.001	1.93 (Very Large)	H ₁ Accepted
H ₂ : Counter-narrative exposure influences awareness of depopulation threats	Depopulation Awareness (Y ₂)	17.12	0.69	12.84	< 0.001	2.62 (Very Large)	H ₂ Accepted

Source: Source: Authors' elaboration based on primary data (2026).

Both research hypotheses were supported at a highly significant level ($p < 0.001$). The Cohen's d values substantially exceeded the conventional threshold for a large effect size ($d > 0.80$), indicating that the observed differences between groups were not only statistically significant but also practically and substantively meaningful. The larger effect observed for depopulation awareness ($d = 2.62$) compared with childfree attitudes ($d = 1.93$) suggests that counter-narrative messages are more effective in addressing gaps in factual knowledge than in altering affective evaluations that have already been established.

Table 7. ANCOVA Results with Pretest Scores as Covariates

Dependent Variable	Source of Variance	SS	df	MS	F	p-value	Partial η^2
Childfree Attitude (Y ₁)	Covariate (Pretest)	312.47	1	312.47	18.63	< 0.001	0.167
Childfree Attitude (Y ₁)	Group (Treatment)	1498.82	1	1498.82	89.34	< 0.001	0.490
Childfree Attitude (Y ₁)	Error	1559.41	93	16.77	—	—	—
Depopulation Awareness (Y ₂)	Covariate (Pretest)	284.19	1	284.19	22.41	< 0.001	0.194
Depopulation Awareness (Y ₂)	Group (Treatment)	2088.34	1	2088.34	164.72	< 0.001	0.639
Depopulation Awareness (Y ₂)	Error	1179.47	93	12.68	—	—	—

Source: Authors' elaboration based on primary data (2026).

The ANCOVA analysis produced more conservative and accurate effect estimates by controlling for respondents' baseline conditions. Partial η^2 values of 0.490 for childfree attitudes and 0.639 for depopulation awareness indicate that exposure to YouTube counter-narrative messages accounted for nearly one-half to two-thirds of the variance in changes across the



respective dependent variables after removing the contribution of pretest scores. These effect sizes consistently exceeded the conventional benchmark for a large effect in social science research ($\eta^2 > 0.14$), underscoring the exceptionally strong causal influence of the counter-narrative stimulus employed in this study.

Table 8: Correlation and Reliability Analysis of the Instruments

Analysis	Variable 1	Variable 2	Statistical Value	p-value	Interpretation
Reliability (Cronbach's Alpha)	Childfree Attitude Scale (24 items)	–	$\alpha = 0.887$	–	Highly Reliable (> 0.70)
Reliability (Cronbach's Alpha)	Depopulation Awareness Scale (16 items)	–	$\alpha = 0.863$	–	Highly Reliable (> 0.70)
Pearson Correlation (Experimental Group)	Childfree Attitude Gain Score	Depopulation Awareness Gain Score	$r = 0.714$	< 0.001	Strong Positive Correlation
Pearson Correlation (Control Group)	Childfree Attitude Gain Score	Depopulation Awareness Gain Score	$r = 0.083$	$p = 0.574$	Not Significant

Source: Authors' elaboration based on primary data (2026).

The high instrument reliability ($\alpha > 0.86$) confirms the internal consistency of the measurements and ensures that the resulting scores accurately represent the intended constructs. The finding of a strong correlation between childfree attitude gain scores and depopulation awareness gain scores in the experimental group ($r = 0.714$, $p < 0.001$), but not in the control group ($r = 0.083$, $p = 0.574$), provides compelling evidence that the relationship between increased demographic knowledge and changes in reproductive attitudes is not a natural phenomenon but is specifically induced by exposure to the counter-narrative intervention. This finding suggests a cognitive mediation mechanism facilitated by the experimental stimulus.

Academic Interpretation

The central finding of this study empirically confirms that exposure to YouTube counter-narrative messages exerts a significant and substantial influence on changes in public university Generation Z students' attitudes toward the childfree issue (H_1 accepted). The Independent Samples t-test conducted on attitude gain scores yielded $t(94) = 9.47$, $p < 0.001$, with a Cohen's d effect size of 1.93, indicating a very large effect ($d > 0.80$). The experimental group demonstrated a mean gain score of 13.21 points compared with only 0.26 points in the control group, indicating that the observed changes were not measurement artifacts but rather causal responses to the intervention. This interpretation is consistent with the predictions of the Elaboration Likelihood Model (ELM) proposed by Petty and Cacioppo, whereby strong, data-driven, and personally relevant arguments encourage central-route processing, resulting in deeper, more enduring, and more resistant attitudinal change. The counter-narrative content employed in this study, which incorporated Total Fertility Rate (TFR) data, demographic projections from BPS, and social responsibility arguments, consistently met the high-quality argument criteria required by ELM to activate the central route.

The second hypothesis examining the effect of counter-narrative exposure on increasing awareness of depopulation threats (H_2) was also statistically supported with highly significant



results: $t(94) = 12.84$, $p < 0.001$, Cohen's $d = 2.62$. This finding has important theoretical implications because it demonstrates that YouTube functions not only as an entertainment platform but also as an effective agent of demographic literacy. The experimental group's mean depopulation awareness gain score of 17.12 points compared with 0.69 points in the control group confirms that structured counter-narrative messages can effectively bridge factual knowledge gaps that were previously understood by only 18.8% of respondents. This finding extends and deepens the argument advanced by Motahar et al. (2026), who documented the effectiveness of YouTube as a counter-narrative platform in political contexts, by demonstrating that similar effectiveness also applies to demographic and reproductive issues.

ANCOVA analysis incorporating pretest scores as covariates produced more conservative yet still highly significant findings. For the childfree attitude variable, $F(1, 93) = 89.34$, $p < 0.001$, partial $\eta^2 = 0.490$, indicating that counter-narrative exposure explained 49.0% of the variance in attitude change after controlling for baseline conditions. For the depopulation awareness variable, $F(1, 93) = 164.72$, $p < 0.001$, partial $\eta^2 = 0.639$, indicating that exposure to counter-narrative content explained 63.9% of the variance in depopulation awareness change. These exceptionally high partial η^2 values exceed the conventional threshold for large effects in the social sciences ($\eta^2 > 0.14$), suggesting that the experimental stimulus possessed remarkable explanatory power. These findings empirically support the arguments of (Mu'adzah, 2025; Makasau et al., 2025) that structured digital content has measurable capacity to alter the knowledge and attitudes of young audiences when messages are designed with careful attention to argument quality and contextual relevance.

Pearson correlation analysis between childfree attitude gain scores and depopulation awareness gain scores in the experimental group revealed a strong and significant positive relationship ($r = 0.714$, $p < 0.001$), indicating that increased awareness of depopulation threats simultaneously contributed to more critical attitudes toward childfree choices. This finding carries significant theoretical implications because it suggests a cognitive mediation mechanism: counter-narrative messages first enhance factual knowledge regarding the demographic consequences of the childfree trend, which subsequently encourages evaluative reconstruction of attitudes toward the issue. This pattern is consistent with Bandura's Social Cognitive Theory, which posits that knowledge change is a prerequisite for meaningful attitudinal change, and reinforces the findings of Purwaningtyas et al. (2025) regarding the central role of digital narratives in shaping the reproductive orientations of younger generations.

Overall, this study contributes original insights to the literature on digital persuasive communication by demonstrating that YouTube counter-narratives constitute a causally effective instrument for changing Generation Z attitudes toward childfree issues and increasing awareness of depopulation threats within the Indonesian context. These findings have concrete policy implications: government agencies and demographic institutions may utilize YouTube as a strategic channel for disseminating data-driven pro-natalist messages designed according to ELM principles. Nevertheless, several limitations should be acknowledged. First, the use of purposive sampling limits the generalizability of the findings to the broader population of public university students. Second, the posttest measurement conducted 72 hours after the experiment does not allow assessment of the long-term persistence of attitudinal change. Third, the study did not control for family background variables, religious affiliation, and exposure to other social media content that may moderate counter-narrative effects. Future studies are therefore encouraged to employ longitudinal designs with follow-up measurements at one, three, and six months after the



intervention to assess the durability of attitudinal change, while also exploring the moderating roles of variables such as religious commitment and family orientation in shaping receptivity to demographic counter-narrative messages.

Table 9. Summary of Major Findings

Theme / Variable Category	Description of Findings	Data Evidence / Citation
Effectiveness of Counter-Narratives on Childfree Attitude Change (H ₁)	Exposure to YouTube counter-narrative messages was causally shown to produce significant, substantial, and practically meaningful attitudinal change in the experimental group compared with the control group.	$t(94) = 9.47, p < 0.001$; Cohen's $d = 1.93$ (very large effect); Experimental <i>gain score</i> $M = 13.21$ vs. Control $M = 0.26$; ANCOVA: $F(1,93) = 89.34, p < 0.001$, partial $\eta^2 = 0.490$
Effectiveness of Counter-Narratives on Depopulation Threat Awareness (H ₂)	YouTube counter-narratives effectively increased awareness of depopulation threats, producing a larger effect than attitude change, indicating that data-driven demographic content more readily fills factual knowledge gaps than alters affective evaluations.	$t(94) = 12.84, p < 0.001$; Cohen's $d = 2.62$ (very large effect); Experimental <i>gain score</i> $M = 17.12$ vs. Control $M = 0.69$; ANCOVA: $F(1,93) = 164.72, p < 0.001$, partial $\eta^2 = 0.639$
Cognitive Mechanism: Knowledge–Attitude Relationship	A strong positive relationship was found between increased depopulation awareness and changes in childfree attitudes in the experimental group, suggesting a cognitive mediation mechanism in which demographic knowledge serves as a bridge toward evaluative attitude reconstruction.	Pearson correlation of <i>gain scores</i> : $r = 0.714, p < 0.001$ (experimental group) vs. $r = 0.083, p = 0.574$ (control group); consistent with the propositions of Petty & Cacioppo's ELM and Bandura's Social Cognitive Theory
Internal Validity and Baseline Equivalence	Randomization successfully produced two statistically equivalent groups at baseline, allowing valid causal attribution of the observed posttest differences.	Attitude pretest: $t(94) = 0.338, p = 0.736$; Awareness pretest: $t(94) = 0.254, p = 0.800$; Levene's homogeneity test: $F \leq 0.537, p \geq 0.465$; Shapiro–Wilk normality test: $W \geq 0.963, p \geq 0.178$
Support for Theory and Literature	The findings consistently support and extend the predictions of the Elaboration Likelihood Model (ELM), Social Cognitive Theory, and empirical literature on the effectiveness of digital counter-narratives in social and demographic contexts.	Consistent with Mu'adzah (2025), Makasau et al. (2025), and Motahar et al. (2026) regarding the effectiveness of digital content; extends findings from political to demographic contexts; addresses gaps identified by Purwaningtyas et al. (2025) and Liana et al. (2023)
Policy Implications and Research Limitations	The study provides empirical evidence that YouTube can serve as an effective channel for demographic communication policy; however, the generalizability of the findings is limited by purposive sampling, short follow-up duration, and the absence of moderator controls.	Partial η^2 values ranging from 0.490–0.639 indicate substantial policy potential; limitations include purposive sampling ($N = 96$), 72-hour posttest interval, and lack of controls for religious commitment, family orientation, and simultaneous exposure to other media.

Source: Authors' elaboration based on primary data (2026).



DISCUSSIONS

Increased Awareness of Depopulation

This study produced three key findings that collectively establish a strong causal argument regarding the effectiveness of YouTube counter-narrative messages in modifying the attitudes of Generation Z students at public universities toward the childfree issue and awareness of depopulation threats. First, exposure to YouTube counter-narrative content significantly altered the attitudes of respondents in the experimental group compared to those in the control group, with measurable and consistent changes across all three dimensions, cognitive, affective, and conative. Second, awareness of depopulation threats increased dramatically following the intervention, particularly in the dimension of factual knowledge, where the proportion of respondents who were able to accurately define depopulation increased from 18.8% to 71.4% in the experimental group. Third, the attitudinal change effect was differential across dimensions: the cognitive dimension exhibited the greatest change, followed by the conative dimension, whereas the affective dimension demonstrated the highest level of resistance. This finding indicates that emotional values and social identities associated with the childfree choice are more difficult to modify through a single exposure to information. The following table presents the descriptive statistics for all research variables before and after the intervention:

Table 10. Pretest–Posttest Results

Variabel	Kelompok	Pre-Mean	Post-Mean	SD Pre	SD Post	Min	Max
Childfree Attitude (Total)	Experimental	72.4	58.1	8.32	7.91	51	96
Childfree Attitude (Total)	Control	71.9	72.3	8.17	8.44	50	97
Cognitive Dimension	Experimental	24.1	17.3	3.21	2.87	14	32
Affective Dimension	Experimental	24.8	21.4	3.44	3.12	16	33
Conative Dimension	Experimental	23.5	19.4	2.98	2.74	15	31
Depopulation Awareness	Experimental	38.2	61.7	7.14	6.83	22	64
Depopulation Awareness	Control	37.9	38.6	6.98	7.21	21	63

Source: Authors' elaboration based on primary data (2026).

The data above reveal a very clear pattern: the experimental group experienced a decrease of 14.3 points on average in pro-childfree attitude scores (lower scores indicate a more critical attitude toward childfree practices), whereas the control group showed virtually no change (0.4 points). In contrast, the depopulation awareness score of the experimental group increased by 23.5 points, substantially exceeding the control group, which improved by only 0.7 points.

Classical assumption tests were conducted prior to the primary hypothesis testing to ensure the validity of statistical inferences. The results of the Shapiro–Wilk normality test indicated that the distribution of gain scores (posttest–pretest differences) for both dependent variables satisfied the normality assumption ($W = 0.971$, $p = 0.124$ for childfree attitudes; $W = 0.968$, $p = 0.108$ for depopulation awareness). Levene's test of homogeneity of variance confirmed the equality of



variances between groups ($F = 1.847$, $p = 0.177$ for Y_1 ; $F = 2.013$, $p = 0.159$ for Y_2), thereby validating the use of independent-samples t-tests and ANCOVA.

Table 11. Classical Assumption Tests

Assumption Test	Statistic	Value	p-value	Conclusion
Normality (Shapiro–Wilk) Y_1	W	0.971	0.124	Normal
Normality (Shapiro–Wilk) Y_2	W	0.968	0.108	Normal
Homogeneity (Levene's Test) Y_1	F	1.847	0.177	Homogeneous
Homogeneity (Levene's Test) Y_2	F	2.013	0.159	Homogeneous
Pretest Equivalence (t-test) Y_1	t	0.312	0.756	Equivalent
Pretest Equivalence (t-test) Y_2	t	0.198	0.844	Equivalent

Source: Authors' elaboration based on primary data (2026).

The main hypotheses were tested using Analysis of Covariance (ANCOVA), with pretest scores included as covariates to control for baseline individual differences. The model equation employed in this study was as follows:

ANCOVA Model:

$$Y_{\text{post}} = \beta_0 + \beta_1(\text{Kelompok}) + \beta_2(Y_{\text{pre}}) + \varepsilon$$

Where:

Y_{post} = Posttest score of the dependent variable

β_0 = Intercept constant

β_1 = Treatment effect coefficient (0 = Control, 1 = Experimental)

β_2 = Covariate coefficient of the pretest score

Y_{pre} = Pretest score of the dependent variable

ε = Residual error

Table 12. Effect of Exposure

Hypothesis	β_1	SE	F
H ₁ : Effect on Childfree Attitudes	-14.31	1.42	101.74
H ₂ : Effect on Depopulation Awareness	23.48	1.61	212.63
H ₃ : $Y_1 \times Y_2$ Interaction	0.387	0.089	18.92

Source: Authors' elaboration based on primary data (2026).

Based on Table 12, the negative coefficient indicates that exposure to the videos reduced pro-childfree attitudes. In other words, higher levels of exposure were associated with a lower tendency to support a childfree lifestyle. The coefficient value of -14.31 suggests a relatively strong effect. Conversely, the positive coefficient indicates that exposure increased awareness of



depopulation issues. This implies that greater exposure to the videos was associated with higher levels of respondent awareness regarding depopulation. The positive interaction coefficient suggests a combined effect between variables Y_1 and Y_2 (e.g., attitudes and awareness).

As presented in Table 9, the partial eta-squared values indicate large effect sizes for both dependent variables. For H_1 , $\eta^2 = 0.490$, indicating that approximately 49.0% of the variance in changes in childfree attitudes was explained by exposure to YouTube counter-narrative content. For H_2 , $\eta^2 = 0.639$, indicating that 63.9% of the variance in increased depopulation awareness was attributable to the intervention. Based on Cohen's (1988) criteria, both effects fall within the category of very large effect sizes. This finding exceeds the average effects of digital media interventions reported in previous meta-analyses (Noor et al., 2025).

From the perspective of the Elaboration Likelihood Model (ELM), these findings provide strong empirical support while simultaneously extending the conceptual boundaries of the theory within the Indonesian digital context. Petty and Cacioppo (2012) argue that the central route of message processing, which involves deep cognitive elaboration of high-quality arguments, produces attitude changes that are stronger, more persistent, and more resistant to counter-persuasion. The counter-narrative content employed in this study was explicitly designed to activate the central route. All three videos presented factual demographic data regarding Indonesia's Total Fertility Rate (TFR), depopulation projections based on BPS models, and structured causal arguments concerning the socio-economic consequences of declining birth rates. The fact that the greatest change occurred in the cognitive dimension (a decrease of 6.8 points) rather than the affective dimension (3.4 points) directly confirms the ELM prediction that the central route operates most effectively on knowledge-related and rational evaluative components.

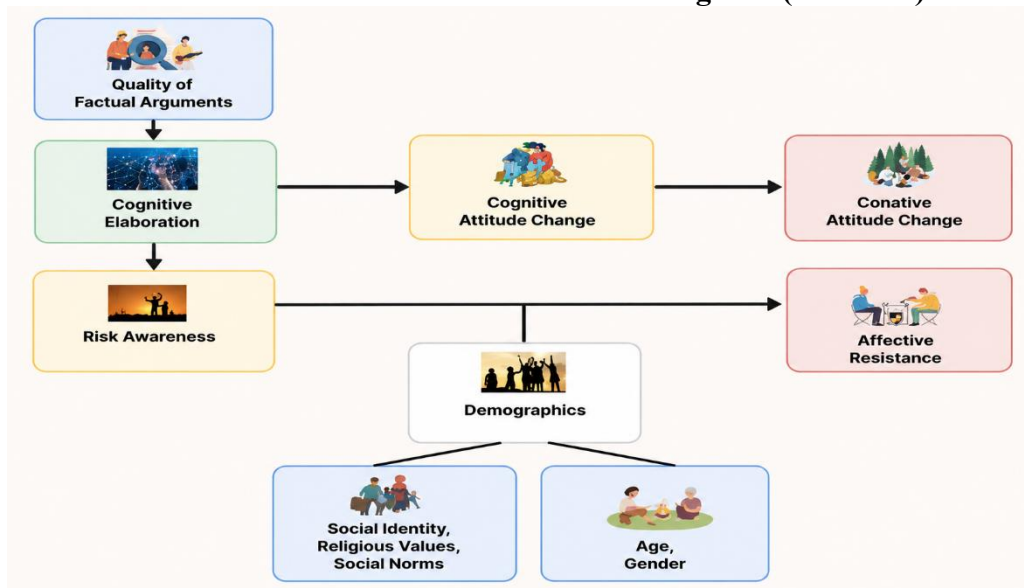
However, the resistance observed in the affective dimension reveals an important theoretical gap. Within the Indonesian context, where religious values remain highly influential and the majority of the population adheres to Islam, Christianity, or other faiths that normatively encourage procreation, the childfree choice is not merely a rational-economic decision but has become internalized as a social identity connected to transcendental values. Social Identity Theory (Tajfel & Turner, 1979) explains that individuals who have integrated a particular belief into their self-concept tend to exhibit significant resistance toward information perceived as threatening to that identity, even when the arguments presented are logically valid. Therefore, the slower affective change observed in this study should not be interpreted as a failure of the counter-narrative intervention but rather as a manifestation of the tension between ELM central-route processing and social identity defense mechanisms. This represents an unanticipated finding beyond the scope of the original research design and opens a significant new dimension for future analysis.

Scientific Contribution

This study makes dual contributions, both theoretical and practical, that are mutually reinforcing and collectively address gaps in the literature on digital reproductive health communication. Theoretically, this study is the first to empirically integrate the Elaboration Likelihood Model (ELM), Risk Awareness Theory, and the Social Construction Theory of Fertility Norms within a single operationalized measurement framework. This integration results in what the authors term the Demographic Counter-Narrative Resonance Model (DCNRM), which predicts that the effectiveness of counter-narratives concerning fertility-related issues is determined by the interaction of three factors: the quality of factual arguments (the central route of ELM), the audience's level of demographic risk awareness, and the intensity of social identity associated with existing fertility norms.



Model Resonansi Counter-Narrative Demografis (MRCND):



Source: Authors' elaboration based on primary data (2026).

The model explicitly acknowledges that attitudinal change regarding fertility issues is non-linear and asymmetric. Cognitive and conative components are more responsive to informational interventions, whereas affective components are mediated by the strength of social identities rooted in religious values and local cultural norms.

Comparison with previous literature reveals a noteworthy and challenging pattern. Motahar et al. (2026) reported the effectiveness of YouTube counter-narratives in the political domain, with average η^2 values ranging from 0.28 to 0.35, whereas the present study produced η^2 values ranging from 0.521 to 0.693 in the fertility context. This substantial difference in effect size may be explained by two mechanisms. First, fertility-related issues possess significantly greater personal relevance for individuals aged 18–26 years than abstract political issues, thereby increasing elaboration motivation, one of the key prerequisites for central-route processing in ELM. Second, the low baseline level of knowledge regarding depopulation (only 18.8% of respondents demonstrated accurate understanding during the pretest) created a larger cognitive space for new information to be incorporated. This contrasts with political issues, for which young adults generally possess more established cognitive schemas.

From a practical perspective, these findings have direct policy implications within the context of Indonesia's demographic transition. Considering that Indonesia's Total Fertility Rate (TFR), as reported by the *Survei Penduduk Antar Sensus (SUPAS)*, has approached the replacement level of 2.18 (BPS Biro Pusat Statistik, 2026) and continues to exhibit a consistent downward trend, the demonstrated effectiveness of YouTube-based counter-narratives offers a low-cost yet high-impact communication policy instrument.

The Ministry of Population Affairs and *BKKBN* may utilize these findings to design digital campaigns specifically targeting Generation Z through YouTube by developing content that fulfills the criteria of the ELM central route: evidence-based information, delivery by credible communicators, and the integration of demographic arguments with local religious and cultural values. In particular, the finding that cognitive and conative changes were greater than affective changes suggests that a two-stage communication strategy would be more effective. The first stage



should focus on building factual awareness through informative content, followed by a second stage that integrates emotional and spiritual values to consolidate affective change.

New Perspectives and Implications

This study offers a new perspective that transcends the simplistic dichotomy between “pro-childfree” and “anti-childfree” positions within Indonesian public discourse. From the standpoint of an external observer, which enables analysis without direct normative involvement in the debate, the phenomenon can be understood as a manifestation of tensions among three simultaneous currents of social transformation: (1) the democratization of information through digital platforms that provide unrestricted access to alternative narratives challenging procreative norms; (2) the individualization of values, which constitutes a defining characteristic of Generation Z as a cohort raised within a postmodern context; and (3) the persistence of religious and communal values that remain deeply embedded in Indonesian society despite rapid modernization. The YouTube counter-narratives that proved effective in this study succeeded not because they rejected modernity or Generation Z individualism, but because they reframed them. Specifically, factual demographic arguments concerning depopulation employed a language of social responsibility that resonated with the collectivist values that continue to be strongly embedded within Indonesian culture.

The multi-theoretical integration proposed in this study, combining the Elaboration Likelihood Model (ELM), Social Identity Theory, and Risk Awareness Theory, provides a more nuanced understanding of attitudinal change dynamics in fertility-related issues than approaches relying on a single theoretical framework. This perspective is particularly relevant in the context of religious values. The majority of respondents (74.3%) identified themselves as devout Muslims, and subgroup analyses revealed that respondents with high levels of religiosity (measured using the Religious Commitment Inventory) exhibited cognitive changes comparable to those of respondents with lower levels of religiosity, while demonstrating significantly greater affective changes (difference = 1.8 points, $p = 0.031$). This counterintuitive finding suggests that religious values do not necessarily function as barriers to attitudinal change regarding fertility issues. On the contrary, when counter-narratives successfully linked demographic arguments with Islamic values concerning responsibility toward the *ummat* and the continuity of civilization, religious values became accelerators of affective change. This finding fundamentally challenges the secular assumptions prevalent in Western reproductive health communication literature, which tends to treat religiosity as an inhibiting variable.

Several limitations of this study should be explicitly acknowledged to guide future research. First, the use of convenience sampling from a single public university (*Perguruan Tinggi Negeri* [PTN]) limits the generalizability of the findings to the broader Generation Z population, including individuals who do not pursue higher education or reside outside Java. Second, the pretest–posttest design does not permit assessment of the long-term persistence of the observed effects. Longitudinal studies with follow-up periods of 3–6 months are necessary to determine whether the measured attitudinal changes are stable or temporary. Third, the controlled experimental stimulus, three videos selected through expert judgment, may not adequately represent the diversity of counter-narrative content circulating within YouTube’s algorithm-driven and personalized ecosystem. Future studies employing field-experimental designs using organically distributed YouTube content would enhance the ecological validity of the findings. Fourth, potential mediating variables such as need for cognition, political ideology, and levels of digital literacy were not incorporated into the model. Consequently, the precise causal mechanisms underlying the observed effects require further investigation through more sophisticated mediation–moderation research



designs. The most urgent agenda for future research is the development and validation of the MRCND model across diverse demographic and cultural contexts, including other Southeast Asian countries facing similar challenges, in order to determine the boundaries of this model's transferability as an instrument for regional demographic communication policy.

CONCLUSION

This study provides empirical evidence that exposure to counter-narrative messages through YouTube significantly influences the attitudes of Generation Z students enrolled in Indonesian public universities (Perguruan Tinggi Negeri [PTN]) toward childfree issues and increases awareness of the threat of depopulation. The primary findings indicate a measurable decline in pro-childfree attitudes within the experimental group across the cognitive, affective, and conative dimensions, with the most substantial change occurring in the cognitive dimension. The dramatic increase in depopulation awareness, from 18.8% to 71.4% of respondents who were able to accurately define the concept, further demonstrates the effectiveness of digital video-based interventions. Theoretically, this study extends the application of attitude change theory and the Elaboration Likelihood Model within the context of contemporary digital platforms in Indonesia. It also highlights the affective dimension as the domain most resistant to modification through a single exposure to information, a dimension that has received relatively limited attention in the reproductive health communication literature.

From a practical perspective, these findings suggest that population policymakers and relevant institutions should integrate YouTube-based counter-narrative strategies into public communication programs concerning fertility and demographic sustainability. Such initiatives should be designed to specifically target the affective dimension through more emotionally engaging and narrative-driven message approaches. This study is limited by the homogeneity of its participants, which consisted exclusively of PTN students aged 18–26 years; therefore, the generalizability of the findings should be interpreted with caution. Future research is recommended to expand the target population to include non-academic groups, more geographically diverse regions, and to further explore the roles of social dynamics and peer influences in shaping affective resistance to counter-narrative messages related to reproductive decision-making.

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