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Brain Rot or Relaxation? The Impact of Short Videos, Attention Fragmentation, and Emotional Desensitization on Senior High School and College Students' Cognitive and Psychological Health

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Abstract

This study addresses a research gap by examining the distinct cognitive and psychological effects of short-form video consumption, distinguishing it from general social media use and emphasizing the roles of rapid content switching and algorithm-driven personalization. The increasing prevalence of platforms such as TikTok, Instagram Reels, and YouTube Shorts has raised concerns about "brain rot," operationalized in this study as attention fragmentation and emotional desensitization, and their potential impact on cognitive and psychological outcomes. A quantitative research design was employed, involving 185 senior high school and college students aged 18–24 years in the National Capital Region, Philippines. Data were collected using validated instruments, including the Mind-Wandering Questionnaire (MWQ), Emotion Regulation Questionnaire (ERQ), Difficulties in Emotion Regulation Scale (DERS), and Brief Self-Control Scale (BSCS), along with researcher-developed measures. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to examine direct, mediated, and moderated relationships. Results indicate that short-form video consumption is significantly associated with increased attention fragmentation and emotional desensitization. Attention fragmentation is positively associated with emotional regulation, while emotional desensitization is negatively associated with academic performance. Self-regulation moderates these relationships, while content type and algorithmic personalization influence the strength of the effects. Findings highlight the complex relationships between short-form video consumption and cognitive and psychological outcomes. The study proposes and validates a structural model explaining how short-form video consumption relates to student well-being, and provides insights for promoting balanced, mindful media use.

Keywords
Short-Form Videos, Cognitive Health, Attention Fragmentation, Emotional Desensitization, Self-Regulation

1. Introduction
Short-form video platforms have become a dominant form of digital entertainment among younger populations,

particularly in the Philippines. Global trends indicate a rapid increase in short-form video consumption, with studies showing that these platforms are widely used among adolescents and young adults both locally and worldwide. In the Philippine context, a substantial proportion of youth spend several hours daily engaging with short-form video content, making it a significant component of their overall media consumption patterns (Zhang, 2024).

As the use of short-form video platforms continues to grow, concerns have emerged regarding their potential cognitive and psychological implications. Unlike general social media use, short-form video platforms are characterized by rapid content transitions, short attention spans, and algorithm-driven personalization, which may intensify user engagement and continuous consumption. These features may be associated with reduced attention capacity and difficulty sustaining focus on cognitively demanding tasks (Lewandowska & Jankowski, 2017).

The concept of "brain rot," often associated with "digital dementia," has been used to describe potential cognitive and emotional impairments linked to prolonged exposure to overstimulating digital content. Digital dementia refers to the decline in cognitive functioning attributed to excessive reliance on digital devices (Horoszkiewicz, 2022). In this study, "brain rot" is used as an analytical construct rather than a clinical diagnosis and is operationalized through attention fragmentation and emotional desensitization.

Young adults, particularly senior high school and college students, represent a critical population for examining these effects due to their ongoing cognitive, emotional, and social development. Gamboa et al. (2023) reported that a large proportion of individuals aged 18–25 (91.11%) exhibited indicators of social media addiction, with over half (53.15%) demonstrating high tendencies toward social comparison. These individuals reported spending at least four hours per day on social media, which was associated with increased tendencies toward social comparison. Such patterns highlight the relevance of examining specific forms of media consumption, particularly short-form video use, within this demographic.

From an interdisciplinary perspective, industrial engineering contributes to the understanding of cognitive and psychological outcomes through the field of cognitive ergonomics. Cognitive ergonomics focuses on aligning system design with human cognitive capabilities to improve usability and reduce cognitive strain (Middlesworth, 2001). In the context of short-form video platforms, this perspective is relevant in examining how platform design features—such as content delivery mechanisms and user interface structures—interact with users' cognitive processes. The findings of this study may therefore provide insights for the design and improvement of digital platforms, particularly in supporting healthier patterns of media use.

Despite the growing body of research on digital media use, existing studies often treat social media as a generalized construct, with limited focus on the unique characteristics of short-form video platforms. Moreover, prior research frequently examines direct relationships without fully integrating cognitive and psychological mechanisms within a single framework. This study addresses these gaps by examining how short-form video consumption is associated with cognitive and psychological outcomes through mediating and moderating factors.

1.1 Objectives

This study aims to examine the cognitive and psychological effects of short-form video consumption among senior high school and college students. Specifically, the study aims to:

1. Develop a structural model that examines the direct and indirect relationships between short-form video consumption (frequency and duration) and cognitive health (academic performance) and psychological effect (emotional regulation).
2. Examine the mediating roles of attention fragmentation and emotional desensitization in the relationship between short-form video consumption and cognitive and psychological outcomes.
3. Analyze the moderating effects of content type (educational versus entertainment), self-regulation/digital mindfulness, and algorithmic personalization on the relationship between short-form video consumption and cognitive and psychological outcomes.
4. Identify patterns of short-form video consumption associated with more favorable cognitive and psychological outcomes, which may serve as empirical bases for healthy consumption guidelines or interventions.

2. Literature Review

Short-form video consumption has been increasingly associated with cognitive and psychological outcomes, particularly among younger users. Unlike traditional long-form content, short-form videos promote rapid engagement and frequent content switching, which may contribute to attention fragmentation and increased cognitive load (Vedechkina & Borgonovi, 2021). Studies have shown that excessive exposure to short-form videos is linked to reduced attentional control and increased impulsivity, potentially affecting users' ability to sustain focus on cognitively demanding tasks (Yan et al., 2024; Zhu & Fong, 2025; Hoffman, 2024).

In terms of psychological effects, prolonged exposure to fast-paced and emotionally stimulating content may be associated with reduced emotional responsiveness, often described as emotional desensitization (Rohm et al., 2021). Additionally, excessive engagement with short-form video platforms has been linked to challenges in emotional regulation, particularly among younger users whose regulatory capacities are still developing (De et al., 2025; Guarnaccia et al., 2024). These findings highlight the relevance of examining both emotional desensitization and emotional regulation as key psychological outcomes.

Short-form video consumption has also been associated with academic outcomes. Studies suggest that frequent exposure may be associated with lower academic performance due to reduced attention span and diminished ability to sustain cognitive effort (Gong & Ting, 2024; Kazi & Asif, 2024). Attention fragmentation has been identified as a potential mechanism underlying this relationship, as frequent shifts in attention may hinder information retention and task persistence.

The effects of short-form video consumption may also vary depending on individual and platform-related factors. Self-regulation has been identified as an important factor influencing users' ability to manage their media consumption, while content type and algorithmic personalization may shape engagement patterns and cognitive responses (Zhu & Fong, 2025; Kim, 2024).

Despite these findings, existing studies often treat digital media as a generalized construct, with limited focus on the unique characteristics of short-form video platforms. Moreover, prior research frequently examines direct relationships without fully accounting for mediating and moderating mechanisms within a single framework.

Therefore, this study addresses these gaps by proposing and testing a structural model that examines how short-form video consumption is associated with cognitive and psychological outcomes through mediating and moderating mechanisms.

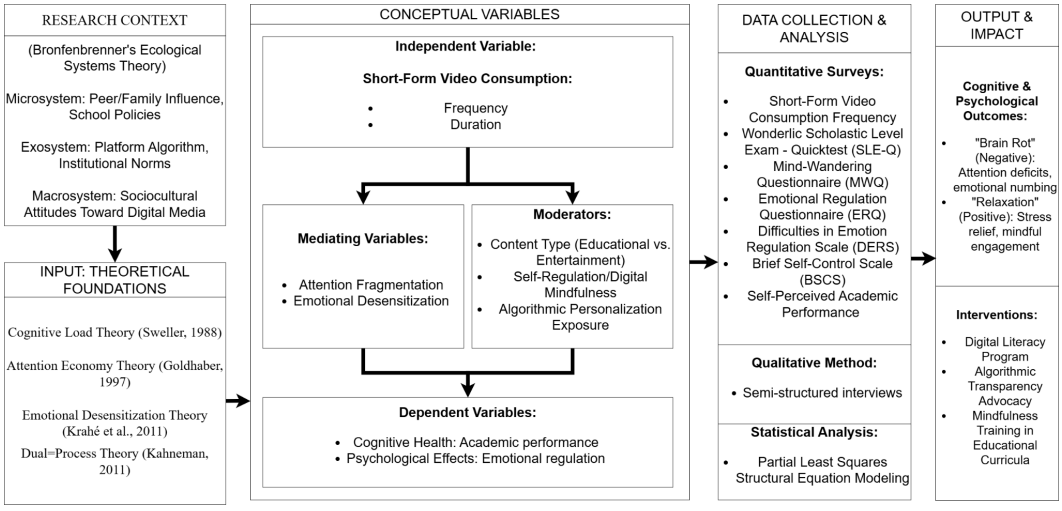

Figure 1. Conceptual framework

Figure 1 investigates how the frequency and duration of short-form video consumption impact student functioning through a complex interaction of variables. At the core of this relationship is the independent variable of video use, which is

hypothesized to influence students' academic and psychological health via the mediating roles of attention fragmentation and emotional desensitization. These mediators represent the cognitive and emotional pathways through which heavy consumption patterns translate into measurable changes in student behavior.

The intensity of these effects is further conditioned by several moderating factors, such as whether the content is educational or entertainment-based, the student's personal level of digital mindfulness, and the degree of algorithmic personalization provided by the platform. Ultimately, the framework seeks to determine how these variables dictate the outcomes, which are categorized as cognitive success, measured through academic performance, and psychological health, measured through emotional regulation. All relationships are analyzed using validated quantitative instruments to maintain empirical rigor.

3. Methods

3.1 Sampling Plan and Size

The researchers conducted the study within the National Capital Region (NCR). Stratified proportional random sampling is being employed to ensure representation across all 16 cities and one municipality of NCR. Stratification by geographic location accounts for variability in demographics, socioeconomic factors, and digital media consumption patterns. The sample size for each city/municipality is proportionate to its population size, maintaining alignment with the region's actual distribution. Within each stratum, participants were randomly selected to minimize bias, enhance generalizability, and ensure the total sample meets the minimum target of 155 respondents. This proportional approach strengthened the study's capacity to reflect the diverse characteristics of the NCR population accurately. The researchers utilized the inverse square root method (Kock & Hadaya, 2018) in computing the minimum sample size. This method is used because it considers the probability that the ratio of a path coefficient and its standard error is greater than the critical value of a test statistic for a specific significance level (Hair et al., 2021). In addition, it is more reliable than the other three methods, and it suggests a larger sample size. This method is rather conservative in that it slightly overestimates the sample size required to have an effect on the given power level, and the method is known for its ease of use and can be readily implemented.

Equation 1. Sampling Computation

$$\text{Significance level} = 5\%: n_{\min} > \left(\frac{2.486}{|p_{\min}|}\right)^2. \quad n_{min} > (\frac{2.486}{0.2})^2 = 154.5049 \approx 155$$

Equation 1 is the minimum sample size calculation using the inverse square root method of SEM-PLS (Hair et al., 2021), wherein nmin is the minimum sample size, 2.486 is the magnitude of the PLS path model at 5% level of significance, and pmin is the minimum path coefficient. According to Amora (2023), a minimum path coefficient (pmin) of 0.2 is suggested as a good starting point in determining the minimum sample size, as it can represent a meaningful relationship between variables.

3.2 Mode of Data Analysis

The study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using WarpPLS 7.0. PLS-SEM was appropriate for this study as it allows the analysis of complex relationships involving multiple mediating and moderating variables. It was used to examine the relationships among short-form video consumption (SFVC), attention fragmentation, emotional desensitization, emotional regulation, and academic performance. The analysis included both measurement and structural model evaluation. The measurement model assessed the reliability and validity of the constructs, while the structural model examined the strength and direction of relationships among variables.

4. Data Collection

Data were collected from senior high school and college students aged 18–24 years residing in the National Capital Region (NCR), Philippines. A total of 185 valid responses were obtained through voluntary participation. Respondents were selected using stratified proportional random sampling based on student level to ensure representation across groups. Only students who actively use short-form video platforms were included in the study.

Structured survey questionnaires were administered through both online and on-site distribution to ensure broader coverage. Prior to participation, respondents were informed about the purpose of the study and the confidentiality of their responses.

The instruments used in this study consisted of a combination of a researcher-developed questionnaire, the Short-Form Video Consumption Questionnaire, and standardized psychological measurement tools, including the Mind-Wandering Questionnaire (MWQ; Mrazek et al., 2013), Brief Self-Control Scale (BSCS; Tangney et al., 2004), Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), and the Wonderlic Scholastic Level Exam – Quicktest (SLE-Q; Wonderlic, Inc., n.d.). These instruments measured short-form video consumption patterns (frequency and duration), attentional processes, emotional regulation outcomes, and academic performance in alignment with the study objectives.

Completed responses were screened for missing data and inconsistencies before statistical analysis. Only fully completed questionnaires were included in the final dataset for subsequent descriptive and structural modeling procedures.

5. Results and Discussion

This section presents the results of the study using Partial Least Squares Structural Equation Modeling (PLS-SEM). The relationships among short-form video consumption (SFVC), attention fragmentation (AF), emotional desensitization (ED), emotional regulation (ER), academic performance (AP), and moderating variables were analyzed.

The measurement model was first evaluated to assess the reliability and validity of the constructs. Results indicate that the constructs meet acceptable thresholds for reliability and validity, supporting their suitability for structural model analysis.

Table 1 presents the summary of constructs, variables, and their corresponding measurement instruments used in the study. SFVC was measured using frequency and duration indicators, while AF, ER, and ED were assessed using established scales (MWQ, ERQ, and DERS). AP was measured using self-perceived indicators, while self-regulation (SR), content type (CT), and algorithmic personalization exposure (APE) were included as moderating variables.

Table 1. Meanings of Construct

Construct	Variable	Meaning/Corresponding Survey Question
SFVC_F	Short-form Video Consumption (SFVC)	Short-form Video Consumption (SFVC) | Question 9: How many times per day do you watch short-form videos?
SVFC_D		SFVC | Question 11: If you answered “More than 3 hours” per day in the previous question, please specify estimate: ___ hours
ER_R	Emotional Regulation (ER)	Emotion Regulation Questionnaire (ERQ): Reappraisal Subscale (6 questions)
ER_S		ERQ: Suppression Subscale (6 questions)
AP_W	Academic Performance (AP)	Wonderlic SLE-Q Questionnaire
AP_SPAP1		Self-Perceived Academic Performance (SPAP) Question 1
AP_SPAP2		SPAP Question 2
AP_SPAP3		SPAP Question 3
AP_SPAP4		SPAP Scale
AF_M	Attention Fragmentation (AF)	Mind Wandering Questionnaire (MWQ)
AF_1		SFVC | Q14 Do you often watch short-form videos while multitasking (e.g., studying, eating, or commuting)?
AF_2		SFVC | Q16 Do you usually finish the videos you watch or Scroll past them quickly?
AF_3		SFVC | Q21

		How often do you lose track of time while watching short-form videos?
AF_4		SFVC | Q25 How often do short-form videos delay your sleep or bedtime routine?
ED_N	Emotional Desensitization (ED)	Difficulties in Emotion Regulation Scale (DERS) Non-Acceptance Subscale
ED_A		DERS Awareness Subscale
ED_S		DERS Strategies Subscale
ED_G		DERS Goals Subscale
ED_I		DERS Impulse Subscale
ED_C		DERS Clarity Subscale
CT	Content Type (CT)	SFVC | Question 15 What type of content do you mostly consume?
SR_B	Self-Regulation or Digital Mindfulness (SR)	Brief Self-Control Scale (BSCS)
SR_1		SFVC | Question 19 Do you ever feel unable to stop scrolling, even when you want to?
SR_2		SFVC | Question 27 Do you set personal limits or use tools (e.g., screen time trackers, app timers) to manage your video consumption?
APE_1	Algrorithmic Personalization Exposure (APE)	SFVC | Question 17 Do you often watch videos recommended by the platform's algorithm (e.g., "For You Page", "Suggested for You")?
APE_2		SFVC | Question 28 I often see videos or posts that are very similar to those I have previously interacted with.

5.1 PLS-SEM Assumptions

Before presenting the structural model results, it is essential to assess whether the data meet the assumptions required for PLS-SEM. Evaluating SEM assumptions ensures the reliability, validity, and overall adequacy of the measurement and structural models. The assessment includes examining factor loadings to confirm indicator reliability, testing discriminant validity to ensure constructs are distinct, checking multicollinearity through variance inflation factors (VIFs), and evaluating model fit using various indices. Meeting these assumptions strengthens confidence in the subsequent hypothesis testing and interpretation of the relationships among short-form video consumption, attention fragmentation, emotional desensitization, and their effects on cognitive and psychological outcomes.

Table 2. Factor Loading of Constructs and Indicators

Variables	SFVC	CT	SR	APE	ER	AP	ED	AF	p-value
A. Short-form Video Consumption (SFVC) **AVE = 0.635**									
SFVC_F	**0.797**	0.084	0.089	0.133	-0.007	0.007	-0.030	-0.149	<0.001
SVFC_D	**0.797**	-0.084	-0.089	-0.133	0.007	-0.007	0.030	0.149	<0.001
B. Content Type (CT) **AVE = 1.000**									
CT	0.000	**1.000**	0.000	0.000	0.000	0.000	0.000	0.000	<0.001
C. Self Regulation /Digital Mindfulness (SR) **AVE = 0.382**									
SR_B	0.023	0.219	**0.575**	-0.069	-0.026	0.137	-0.480	0.071	<0.001
SR_2	0.064	0.001	**0.809**	0.084	-0.066	0.023	-0.237	-0.120	<0.001
D. Algorithmic Personalization Exposure (APE) **AVE = 0.565**									
APE_1	-0.088	0.119	-0.060	**0.752**	0.009	0.023	-0.008	-0.077	<0.001

APE_2	0.088	-0.119	0.060	**0.752**	-0.009	-0.023	0.008	0.077	<0.001
E. Emotional Regulation (ER) **AVE = 0.671**									
ER_R	0.162	0.107	-0.043	0.150	**0.819**	0.126	-0.175	0.007	<0.001
ER_S	-0.162	-0.107	0.043	-0.150	**0.819**	-0.126	0.175	-0.080	<0.001
F. Academic Performance (AP) (**AVE = 0.556**									
AP_SPAP1	-0.016	0.108	0.044	0.049	-0.034	**0.793**	0.038	0.080	<0.001
AP_SPAP2	-0.042	0.024	-0.012	0.007	-0.095	**0.689**	0.070	0.128	<0.001
AP_SPAP3	0.044	-0.062	-0.091	0.029	0.050	**0.755**	0.039	-0.099	<0.001
AP_SPAP4	0.011	-0.075	0.057	-0.088	0.073	**0.742**	-0.145	-0.104	<0.001
G. Emotional Desensitisation (ED) **AVE=0.680**									
ED_N	0.021	0.091	-0.059	-0.038	0.094	0.045	**0.766**	-0.049	<0.001
ED_S	-0.059	-0.059	-0.049	-0.042	0.070	0.009	**0.921**	0.026	<0.001
ED_G	-0.044	0.006	0.083	0.070	-0.102	-0.021	**0.830**	0.040	<0.001
ED_I	0.105	-0.094	0.010	0.092	-0.193	-0.008	**0.837**	0.035	<0.001
ED_C	-0.017	0.051	0.017	-0.089	0.145	-0.024	**0.758**	-0.065	<0.001
H. Attention Fragmentation (AF) **AVE = 0.513**									
AF_M	-0.184	-0.105	0.038	-0.107	-0.059	0.042	0.180	**0.762**	<0.001
AF_3	0.099	0.071	0.065	0.022	0.050	-0.031	-0.109	**0.806**	<0.001
AF_4	0.092	0.019	-0.058	0.226	0.031	-0.035	-0.072	**0.794**	<0.001

Table 2 above presents the factor loadings of each indicator on its respective latent construct, along with cross-loadings, AVE values, and corresponding p-values. In accordance with the criteria proposed by Amora (2021), acceptable indicator reliability is established when factor loadings are at least 0.50, associated p-values are below 0.05, and cross-loadings on non-target constructs are substantially lower than the primary loadings. The results indicate that the majority of indicators demonstrate adequate to strong factor loadings, all of which are statistically significant at $p < 0.001$.

Table 3. Discriminant Validity Statistics: Correlations, Square Root of AVEs, and HTMT2

Variables	**SFVC**	**CT**	**SR**	**APE**	**ER**	**AP**	**ED**	**AF**
SFVC	**0.813**	-0.088	-0.012	0.118	0.290	0.105	0.173	0.325
CT	-0.088	**1.000**	0.219	0.033	-0.027	-0.139	-0.220	-0.068
SR	-0.012	0.219	**0.654**	0.054	-0.154	-0.036	-0.413	-0.201
APE	0.118	0.033	0.054	**0.757**	0.156	0.075	-0.097	0.218
ER	0.290	-0.027	-0.154	0.156	**0.819**	0.183	0.149	0.369
AP	0.105	-0.139	-0.036	0.075	0.183	**0.752**	-0.071	0.055
ED	0.173	-0.220	-0.413	-0.097	0.149	-0.071	**0.821**	0.388
AF	0.325	-0.068	-0.201	0.218	0.369	0.055	0.388	**0.807**

Table 3 presents the discriminant validity assessment using the Fornell–Larcker criterion and HTMT2 ratios. The diagonal values represent the square root of the Average Variance Extracted (AVE), while the off-diagonal values represent the correlations between constructs.

Based on the Fornell–Larcker criterion, discriminant validity is established when the square root of AVE for each construct exceeds its correlations with other constructs (Fornell & Larcker, 1981). As shown in the table, all diagonal values (e.g., SFVC = 0.813, ER = 0.819, ED = 0.821, AF = 0.807) are higher than the corresponding inter-construct correlations, indicating that each construct shares more variance with its own indicators than with other constructs.

The construct Content Type (CT) shows a diagonal value of 1.000, which is expected as it is measured using a single indicator; thus, comparisons using the Fornell–Larcker criterion are limited but do not affect the overall assessment.

The HTMT2 ratios further support this result, as all values fall below the recommended threshold of 0.90 (Henseler et al., 2015; Roemer et al., 2021), confirming that the constructs are sufficiently distinct from one another. For CT, HTMT2 is not applicable due to the absence of multiple indicators; however, its inclusion does not compromise the overall discriminant validity of the model.

Overall, these findings indicate that the measurement model satisfies the required criteria for discriminant validity and is suitable for subsequent structural model analysis.

Table 4. Full Collinearity VIF and Reliability Coefficients of the Latent Variables

Construct	Composite Reliability	Cronbach's Alpha	Full Collinearity VIF	Reference
SFVC	0.795	0.485	1.243	-Composite Reliability and Cronbach's Alpha (Kock, 2023) -Full Collinearity VIF (Kock, 2023)
CT	1.000	1.000	1.171	
SR	0.599	-0.340	1.280	
APE	0.728	0.253	1.114	
ER	0.803	0.509	1.290	
AP	0.839	0.743	1.134	
ED	0.912	0.878	1.513	
AF	0.848	0.730	1.492	

Table 4 above presents the composite reliability, Cronbach's alpha, and full collinearity variance inflation factor (VIF) values for the latent constructs included in the model. These indices are used to assess internal consistency reliability and to examine the potential presence of multicollinearity and common method bias among constructs.

Overall, the reliability and collinearity results indicate that the measurement model demonstrates acceptable internal consistency and no problematic multicollinearity, with the exception of the self-regulation construct, which exhibits comparatively weaker reliability. These findings support the adequacy of the measurement model for proceeding to the evaluation of the structural model.

Table 5. Model Fit & Indices

Parameters	Value	p-value	Criteria	Remarks
Average path coefficient (APC)	0.156	0.008	p-value < 0.05	Acceptable; p-value is significant
Average R-squared (ARS)	0.102	0.005	p-value < 0.05	Acceptable; p-value is significant
Average adjusted R-squared (AARS)	0.083	0.009	p-value < 0.05	Acceptable; p-value is significant
Average block VIF	2.030	NA	Acceptable if ≤ 5; ideally ≤ 3.3	Acceptable
Average full collinearity VIF (AFVIF)	1.268	NA	Acceptable if ≤ 5; ideally ≤ 3.3	Acceptable
Tenenhaus GoF (GoF)	0.277	NA	Small ≥0.1, Medium ≥ 0.25, Large ≥0.36	Medium
Standardized Root Mean Square Residual (SRMR)	0.146	NA	Acceptable if ≤ 0.1	Not Acceptable

Standardized Mean Absolute Residual (SMAR)	0.114	NA	Acceptable if ≤ 0.1	Not Acceptable

Table 5 presents the model fit and quality indices for the structural model. The results show that the Average Path Coefficient (APC), Average R-squared (ARS), and Average Adjusted R-squared (AARS) are statistically significant ($p < 0.05$), indicating acceptable overall model fit. The collinearity diagnostics further support the model, as the Average block VIF (AVIF = 2.030) and Average full collinearity VIF (AFVIF = 1.268) are below the recommended threshold of 5.0, suggesting no multicollinearity issues. In addition, the Tenenhaus Goodness-of-Fit (GoF = 0.277) indicates a moderate level of model fit. However, the Standardized Root Mean Square Residual (SRMR = 0.146) and Standardized Mean Absolute Residual (SMAR = 0.114) exceed the recommended threshold of 0.10, indicating that the model does not fully satisfy these residual-based fit criteria. Overall, the model demonstrates acceptable fit based on multiple indices; however, the results should be interpreted with caution given the elevated residual measures.

5.2 Numerical Results

Table 6 summarizes the structural model results, including the path coefficients (β), p-values, effect sizes (f^2), and significance of the hypothesized relationships.

Table 6. Summary of PLS-SEM Results

Hypothesis	Path Coefficient (β)	P-value	Effect Size (f^2)	Remarks
a) Direct and Mediating Effects				
SFVC -> ER	0.112	0.061	0.033	Not Significant
SFVC -> AP	-0.092	0.102	0.011	Not Significant
SFVC -> ED	0.049	0.253	0.009	Not Significant
SFVC -> AF	0.336	<0.001	0.113	Significant
ED -> ER	-0.169	0.009	0.059	Significant
ED -> AP	-0.146	0.021	0.036	Significant
AF -> ER	0.244	<0.001	0.090	Significant
AF -> AP	0.057	0.219	0.005	Not Significant
AF -> ED	0.412	<0.001	0.176	Significant
b) Moderating Effects				
CT*SFVC -> ER	0.067	0.179	0.020	Not Significant
CT*SFVC -> AP	-0.303	<0.001	0.099	Significant
SR*SFVC -> ER	0.229	<0.001	0.075	Significant
SR*SFVC -> AP	0.004	0.480	0.001	Not Significant
APE*SFVC -> ER	0.034	0.320	0.003	Not Significant
APE*SFVC -> AP	0.086	0.119	0.013	Not Significant

The results show that short-form video consumption (SFVC) is significantly associated with attention fragmentation (AF) ($\beta = 0.336$, $p < 0.001$), indicating that increased consumption is linked to higher levels of fragmented attention. However, SFVC does not have a significant direct association with emotional regulation (ER), academic performance (AP), or emotional desensitization (ED).

Attention fragmentation emerges as a key mechanism in the model. It is positively associated with emotional regulation ($\beta = 0.244$, $p < 0.001$) and emotional desensitization ($\beta = 0.412$, $p < 0.001$), suggesting that changes in attentional patterns are linked to both emotional processing and responsiveness. In turn, emotional desensitization is negatively associated with emotional regulation ($\beta = -0.169$, $p = 0.009$) and academic performance ($\beta = -0.146$, $p = 0.021$), indicating that reduced emotional responsiveness is linked to lower emotional control and academic outcomes.

For the moderating effects, content type significantly moderates the relationship between SFVC and academic performance ($\beta = -0.303$, $p < 0.001$), while self-regulation significantly moderates the relationship between SFVC and emotional regulation ($\beta = 0.229$, $p < 0.001$). Other moderating effects, including those involving algorithmic personalization exposure, are not statistically significant.

5.3 Graphical Results

Figure 2 illustrates the estimated SEM model based on the numerical results from Table 6, showing the hypothesized relationships among the study variables. Short-Form Video Consumption (SFVC) is modeled as the primary exogenous variable influencing both Attention Fragmentation (AF) and Emotional Desensitization (ED), which in turn are linked to the endogenous outcome variables Emotional Regulation (ER) and Academic Performance (AP). The values displayed along each path represent the standardized path coefficients (β) and associated p-values, while the R^2 values inside the endogenous constructs indicate the proportion of variance explained by the model.

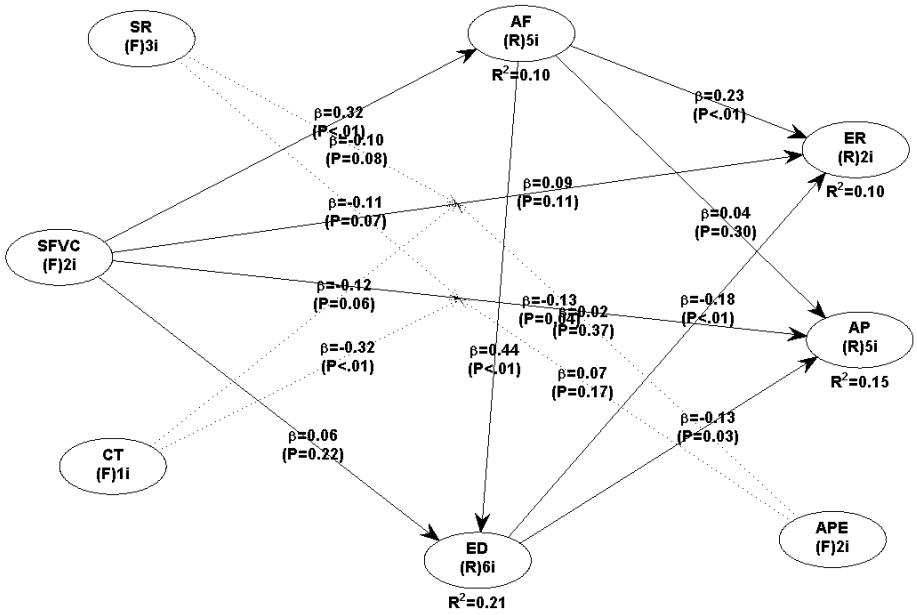

Figure 2. SEM Model

Solid arrows in the model denote direct structural relationships. In contrast, dashed arrows represent moderating effects, reflecting how content type (CT), self-regulation/digital mindfulness (SR), and algorithmic personalization exposure (APE) condition the strength of selected paths.

6. Conclusion

This study analyzed and examined the cognitive and psychological effects of short-form video consumption among senior high school and college students using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results and findings suggest that short-form video consumption is associated with academic performance and emotional regulation outcomes. Its influence operates through indirect cognitive and emotional mechanisms.

Attention fragmentation was a significant cognitive pathway with a strong association to emotional desensitization, which is associated with lower levels of emotional regulation and academic performance. These findings suggest that the effects of short-form video consumption are more process-driven, with intermediate cognitive and emotional factors, rather than simply being a function of viewing frequency or duration. Additionally, self-regulation was found to moderate certain relationships, indicating its potential role as a protective factor, while content type was associated with variations in academic performance outcomes.

However, these results should be interpreted with caution, given the limitations of this study. The sample was a convenience sample of students living in the National Capital Region (NCR) of the Philippines, which may limit the applicability of the findings to other geographic or cultural contexts. Additionally, the sample was limited to 18-24 year olds and may not be representative of the impact of short-form video use among younger adolescents or older populations. The study adds to the understanding of the relationship between short-form video consumption and

cognitive and psychological outcomes in terms of mediating and moderating mechanisms. These findings underscores the importance of considering underlying processes such as attentional fragmentation and emotional desensitization.

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