



## The Influence of Public Service Advertisements on the Intentions To Eat Fish in Toddlers in Indonesia

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Received: 1 September 2024  
Revised: 9 September 2024  
Accepted: 28 September 2024

### Abstract

Public Service Announcements (PSAs) are one of the most widely used forms of promotion by the government to encourage the public to change their habits. The Ministry of Maritime Affairs and Fisheries has a program to raise public awareness about the importance of fish consumption for nutrition. This study examines the influence of the Gemarikan public service announcement on the intention to eat fish for stunting prevention. The focus of this research is to investigate the role of individual attention, information surveillance, elaboration, precautionary behavior towards stunting, and demographic features (such as occupation and age group). The method used in this study is Structural Equation Modeling (SEM), a multivariate analysis technique that aims to test the relationships between variables within a model. The findings indicate that attention, information surveillance, and elaboration are related to PSAs. Additionally, attention and information surveillance don't have a significant impact on precautionary behavior towards stunting, whereas elaboration is related to precautionary behavior towards stunting.

**Keywords:** Attention Information Surveillance Elaboration Precautionary Behavior Words

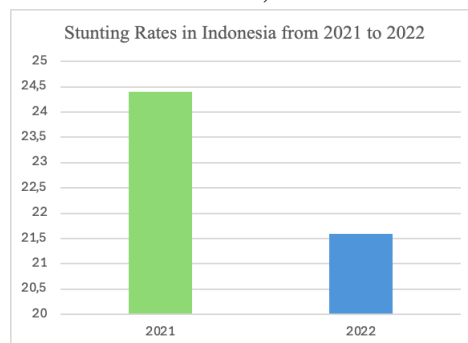
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**How to Cite:** Muhammad, F., & Zunaidi, R. (2024). The Influence of Public Service Advertisements on the Intentions to Eat Fish in Toddlers in Indonesia. *Jurnal Ilmiah Wahana Pendidikan*, 10(24.2), 429-437. Retrieved from <https://jurnal.peneliti.net/index.php/JIWP/article/view/9333>

## INTRODUCTION

According to data from the Ministry of Maritime Affairs and Fisheries, fish consumption in 2022 was 59.53 kg per capita [1]. This figure has not yet met the target for 2024, which is 62.5 kg per capita [1]. Stunting is a significant global issue that needs attention because it increases the susceptibility of children to diseases [2]. According to Presidential Regulation No. 72 of 2021, stunting is defined as impaired growth and development in children due to chronic malnutrition and repeated infections, characterized by a length or height that is below the standard set by the Minister of Health of the Republic of Indonesia [3]. Data from the Ministry of Health shows the stunting rates in Indonesia from 2021 to 2022, as illustrated in **Figure 1** [4].



**Figure 1.** Stunting Rates in 2021-2022

To increase fish consumption and improve nutrition among toddlers in Indonesia, the government launched the "Gemarikan" campaign as a flagship program. The Gemarikan activities are divided into two types: educational activities and direct appeals to consume fish. These educational activities include campaign posts on social media, mass media, and websites. The Gemarikan program is supported by Law No. 45/2009 in the fisheries sector, which aims to increase the availability and consumption of fish protein sources [5]. This initiative is reinforced by Presidential Regulation No. 3/2017 on the establishment of the Movement to Promote Fish Consumption and Presidential Instruction No. 1/2017 to expand the implementation of Gemarikan [6]. The Ministry of Maritime Affairs and Fisheries collaborates with local maritime and fisheries agencies, as well as local health departments, in carrying out the Gemarikan activities.

Therefore, there is a need for Gemarikan campaigns aimed at increasing awareness, creating understanding, and influencing preferences. Thus, research is needed to measure the factors in the Gemarikan public service advertisements by examining the underlying mechanism of individual attention, information surveillance, and elaboration that affect precautionary behavior towards stunting and increase parents' interest in feeding their toddlers fish using the SEM (Structural Equation Modeling) method.

## **METHODS**

### **A. Gemarikan**

Gemarikan (The movement to promote eating fish) is an initiative carried out by the Ministry of Marine Affairs and Fisheries of Indonesia. The purpose of this Gemarikan program is to raise public awareness about the importance of consuming fish for public nutrition and to encourage the public to start enjoying eating fish. Currently, Gemarikan's social media platforms include Instagram, Facebook, YouTube, and Tiktok. According to Gemarikan's monthly social media report for the year 2023, on average, 60% of the audience engaging with Gemarikan's public service advertisements on social media are female, while 40% are male.

### **B. Stunting**

According to the WHO (2020), stunting is defined as being short or very short based on length or height for an age that is less than -2 standard deviations (SD) on the WHO growth curve, which occurs due to conditions that cannot be changed due to insufficiency nutrition intake or recurrent infections or chronic infections. According to the Ministry of Health of the Republic of Indonesia, stunting is a growth failure due to prolonged inadequate nutrition from pregnancy to the age of 24 months.

### **C. Public Service Advertisement**

Public Service Advertisement (PSA) is one of the most widely used forms of promotion by the government to promote and encourage changes in social behaviors. Public service advertisements aim to convey messages that are educational, informative, or motivating to the public on issues related to public interests, community welfare, and quality of life improvement. Public service advertisements play a significant role in shaping public opinion and promoting positive change in society. By designing effective campaigns based on public service advertisement design theory, social messages can be delivered more efficiently and contribute to societal improvement.

### **D. Hypothesis Development**

Exposure to public service advertisement is defined as how far an individual has discovered specific media content [7]. Variation in exposure to public service

advertisements is a factor in the success of communication campaigns [8]. In this research, exposure to public service advertisements refers to the frequency of viewing advertisements disseminated with the specific to gain public attention, which can lead to certain changes in individuals' attitudes to behavior [9].

Attention is defined as the element of consideration of media content by an audience based on an individual's involvement with that content [10]. The attention variable is a factor that is directly related to the audience. Specifically, in advertising theory individual involvement is an antecedent of outcomes related to changes in attitude, whereas attention is directly related to individual involvement [11]. Therefore, in this research selection of the attention construct is important to study the cognitive effect of each exposure to public service advertisement in determining the intention to eat fish.

Information surveillance encompasses the consumption of media content to fulfill a cognitive need for gathering information through individual exploration. It is regarded as a crucial factor influencing an individual's social media usage [12]. Utilizing social media for information-seeking purposes can aid individuals in their decision-making process [13].

Elaboration is the process of connecting new information by each individual. Each individual incorporates information, knowledge, individual skills, and other practices into their memory [14]. Elaboration is considered a factor directly related to information acquisition [15]. Therefore, elaboration can help measure its relationship with the intention to consume fish.

Precautionary behavior involves taking action before an event occurs [16]. Each individual will evaluate every threat from any communicated source, thereby forming perceptions about the severity of damage through threats or risks. The most instructive way to define cautious behavior is based on individuals' perceived threat perceptions regarding the information provided to them. By considering the variables of attention, information surveillance, and elaboration, this research provides insights into factors that can influence the intention to consume fish. Therefore, we present a certain hypothesis:

**Hypothesis 1 (H1):** There is a positive influence of PSA on attention

**Hypothesis 2 (H2):** There is a positive influence of PSA on information surveillance

**Hypothesis 3 (H3):** There is a positive influence of PSA on elaboration

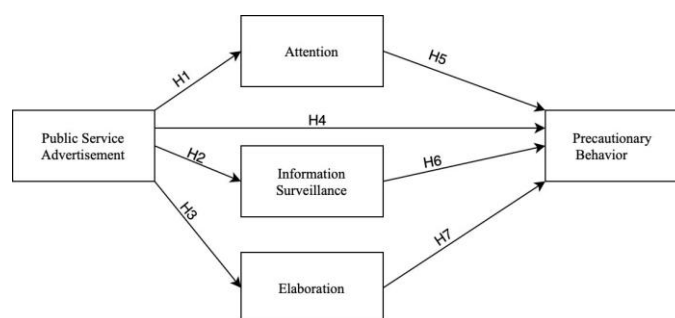
**Hypothesis 4 (H4):** There is a positive influence of PSA on precautionary behavior

**Hypothesis 5 (H5):** There is a positive influence of attention on precautionary behavior

**Hypothesis 6 (H6):** There is a positive influence of information surveillance on precautionary behavior

**Hypothesis 7 (H7):** There is a positive influence of elaboration on precautionary behavior

From the existing hypotheses, a conceptual model will be developed for use in this study.



**Figure 2.** Conceptual Model

E. Research Methods

Data collection in this research utilized the survey method employing questionnaires to collect the information. Electronic interviews were conducted from December 2023 to January 2024. After collecting the data, both configural model processing and structural model processing were carried out. Configural model processing aims to obtain parameter estimates reflecting the relationships between variables in the model, nor information regarding the fit between the model and empirical data.

The initial stage in configural model testing involves assessing the goodness of fit, which includes basic goodness of fit, absolute fit, and incremental fit. If the goodness of fit values generated is good, then the model can be accepted; however, if the results are poor, then the model requires modification. Next, construct validity and reliability testing are conducted. If the AVE value is above  $> 0.50$ , it can be stated that each variable has good discriminant validity [17]. If the CR value is above  $> 0.70$ , it can be stated that the construct has a high level of reliability [18].

Structural model processing in SEM involves modeling the hypothesized relationships [19]. Structural model processing contributes to understanding the cause-and-effect relationships between variables in a theoretical model and testing the hypotheses proposed. In structural model testing, the results of the research model hypotheses, whether they are influential or not, are obtained. Hypothesis are considered proven if they have a p-value below  $< 0,1$ .

**Exposure to PSA** was assessed using a three-item scale. Participants were asked about the likelihood of their exposure to government PSAs. **Attention** was measured using a four-item scale. Participants were queried about the likelihood of their attention towards improving nutrition in toddlers and preventing stunting. **Information surveillance** was assessed using a three-item scale. Participants were asked about their reasons for viewing the public service announcements regarding improving nutrition in toddlers and preventing stunting. **Elaboration** was assessed using a three-item scale. Participants were questioned about their responses to the PSAs. Precautionary behavior was assessed using five-item scale. Participants were questioned how possible they acted in accordance public service announcements regarding improving nutrition in toddlers and preventing stunting. The variable was measured on a 5 point scale ranging from 1 (never) to 5 (very often).

Indicator	Goodness of Fit	Score	Criteria	InfoBasic
Chi-Square		212	The smaller	Marginal Fit
The better				
Degree of freedom (DoF)		118	The smaller	Marginal Fit
thebetter				
P-Value		0	$< 0,001$	Good Fit
<b>Absolute Fit</b>				
Root Mean Square Error of Approximation (RMSEA)		0,073	$< 0,08$	Good Fit
Standardized Root Mean Square Residual (RMSR)		0,039	$< 0,05$	Marginal Fit
		<b>Incremental Fit</b>		

Comparative Fit Index (CFI)	0,975	> 0,90	Marginal Fit
Tucker Lewis Index (TLI)	0,964	> 0,90	Marginal Fit

The chi-square value in this study has a small figure, indicating no significant difference between the estimated results and the observations. The p-value results in this study are significant, namely below  $< 0.001$ , indicating that the measurement model is considered fit. The RMSEA value is below  $< 0.08$ , specifically 0.073, and the RMSR value is below  $< 0.05$ , specifically 0.039, indicating absolute fit. The measurement model of this study is considered to have an incremental fit because it has CFI and TLI values below  $< 0.90$ , specifically 0.975 and 0.964. The measurement model in this study is considered fit.

The validity and reliability testing involves loading values, AVE (Average Variance Extracted) values, and CR (Composite Reliability) values.

**Table 2.** Validity and Reliability Testing of Configural Model

Construct	Indicator	Loading	AVE	CR
<b>Exposure to PSA</b>	ILM1	0,634	0,72243925	0,90154723
	ILM2	0,878		
	ILM3	0,934		
	ILM4	0,919		
<b>Attention</b>	P1	0,791	0,7910565	0,94757598
	P2	0,898		
	P3	0,946		
	P4	0,915		
<b>Information surveillance</b>	PI1	0,939	0,87405633	0,98213881
	PI2	0,972		
	PI3	0,892		
<b>Elaboration</b>	E1	0,918	0,80322867	0,95433364
	E2	0,901		
	E3	0,869		
<b>Precautionary behavior</b>	PS1	0,921	0,7415358	0,91751341
	PS2	0,907		
	PS3	0,792		
	PS4	0,838		
	PS5	0,841		

From **Table 2**, it is clear that the highest AVE value belongs to the information monitoring construct, which is 0.87, and the lowest AVE value belongs to the public service advertising exposure construct, which is 0.72. These values indicate that the measurement model's construct indicators can only explain 72% of the average variance of the construct. The CR value of all constructs in this research's measurement model is above  $> 0.70$ , indicating that all constructs have a high level of reliability. Therefore, it can be concluded that all constructs in this study are valid and reliable.

**Structural Model Testing**

The structural model fit test used to assess the measurement model of each group, including basic goodness of fit, absolute fit, and incremental fit.

**Table 3.** Structural Model Fit Test

Indicator	Goodness of fit	Score	Criteria	InfoBasic
Chi-Square		216	The smaller,	Marginal Fit

the better

Indicator	Score	Criteria	Info
Degree of freedom (DoF)	120	The smaller,	Marginal Fit
P-Value	0	< 0,001	Good Fit

**Absolute Fit**

Root Mean Square Error of Approximation (RMSEA)	0,073	< 0,08	Good Fit
Standardized Root Mean Square Residual (RMSR)	0,037	< 0,05	Good Fit
<b>Incremental Fit</b>			
Comparative Fit Index (CFI)	0,975	> 0,90	Good Fit
Tucker Lewis Index (TLI)	0,964	> 0,90	Good Fit

From **Table 3**, the chi-square value in this measurement model is 216, indicating no significant difference between the estimated results and the observations. The p-value results in this study are significant, namely below < 0.001, indicating that the measurement model is considered fit. The RMSEA value is below < 0.08, specifically 0.073, and the RMSR value is below < 0.05, specifically 0.037, indicating absolute fit. The measurement model of this study is considered to have an incremental fit because it has CFI and TLI values below < 0.90, specifically 0.975 and 0.964.

**Table 4.** Hypothesis Test Result and Structural Model P-Value

Code	Hypothesis	Alpha	P-Value	Info
<b>H1</b>	There is positive influence of PSA on attention	< 0,1	0,000	H1 Accepted
<b>H2</b>	There is positive influence of PSA on information surveillance	< 0,1	0,000	H2 Accepted
<b>H3</b>	There is positive influence of PSA on elaboration	< 0,1	0,000	H3 Accepted
<b>H4</b>	There is positive influence of PSA on precautionary behavior	< 0,1	0,550	H4 Rejected
<b>H5</b>	There is positive influence of attention on precautionary behavior	< 0,1	0,607	H5 Rejected
<b>H6</b>	There is positive influence of information surveillance on precautionary	< 0,1	0,156	H6 Rejected

	behavior			
<b>H7</b>	There is positive influence of elaboration on precautionary behavior	< 0,1	0,000	H7 Accepted

In **Table 4**, the results of the hypotheses in the structural model of the study are revealed, whether they are significant or not. A hypothesis is considered proven if it has a p-value below < 0.1. In this study's structural model, three hypotheses are rejected, namely, H4, H5, and H6, which indicate no relationship between PSA, attention, information surveillance, and elaboration towards the precautionary behavior. Four hypotheses are accepted, namely, H1, H2, H3, and H7, indicating a relationship between PSA and attention, information surveillance, and elaboration.

The acceptance of H1 aligns with research on the public's reaction to public service advertisements (PSAs) about reactions to safer-sex public service announcement message features: Attention, perceptions of realism, and cognitive responses indicate that PSAs have a positive impact on public attention through engaging narratives [20]. This is because the script of the PSAs can capture attention and suggest that to produce a high-quality message, a well-crafted and engaging script is essential [21]. Another study also indicates that individual attention is strongly related to PSAs [22].

PSAs have a strong influence on information surveillance, which aligns with research on precautionary behavior towards the dengue fever virus through public service advertisements. Seeking information and orienting individuals toward health risk information during a dengue virus epidemic can enhance cautious behavior [22].

Elaboration can serve as a strong mediator between PSAs and precautionary behavior against dengue fever virus [22]. This aligns with the current study, indicating that elaboration has a positive influence on PSAs. Other research explains that individuals who receive higher-quality information tend to engage in positive information elaboration [14].

H4 was rejected, indicating that PSAs do not have a positive influence on precautionary behavior. This is consistent with previous research on stunting education, which found that low parental participation in educational activities to enhance child development is due to time constraints related to work commitments [23].

The rejection of H5 indicates that parents perceive no influence of precautionary behavior on attention. This rejection aligns with research on the relationship between mothers' knowledge about balanced nutrition and their precautionary behavior against stunting in toddlers, where mothers exhibit negative behavior due to a lack of active information-seeking and participation in community health activities [24].

There is no positive influence of precautionary behavior on information surveillance. As explained in previous research on adolescent knowledge and attitudes toward anemia prevention, there is no significant influence of knowledge on preventive behavior [25]. The lack of relationship between knowledge and preventive behavior is due to high knowledge levels about anemia not being accompanied by behavioral changes, resulting in no improvement in nutrition [25]. Another study on nutrition education through Instagram for adolescent girls also showed that this intervention did not effectively promote knowledge and attitudes that could change their actions [26].

Elaboration positively influences precautionary behavior. Other research on the dangers of smoking from warning ads on cigarette packs shows that these ads can

change the attitudes of active smokers [27]. This is consistent with other research stating that access to information affects an individual's knowledge: the better the information, the better the person's knowledge [28].

## CONCLUSION

Based on the data processing and analysis conducted in this study, it was found that the variables of attention, information surveillance, and elaboration significantly influence PSA with p-values in **Table 4** of 0.000 each, indicating acceptance of H1, H2, and H3. The variable of intention to eat fish did not have a significant influence on ILM (p-value = 0.550), thus H4 is rejected. Additionally, the variables of attention and information surveillance also do not significantly influence preventive behavior, with p-values of 0.607 and 0.156 respectively, hence H5 and H6 are rejected. However, the elaboration variable has a significant influence on the precautionary behavior (p-value = 0.000), thus H7 is accepted. In future research, it is hoped that public preference can be conducted, and the research scope not be limited only to parents with toddlers. Furthermore, in future research, it is necessary to add another variable such as the narrative and visual design of ILM.

## Acknowledgement

This section is optional. In this part, the author can express his or her thanks to parties (individuals or institutions) who helped with research and writing articles.

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