

Digital Health Information Literacy and Fast-Food Consumption Among Adolescents: A *Halal-Tayyib* Perspective in Muslim Communities

Jemi Ngadiono¹, M. Ismail Alif², Galih Geraldi Primayana³, Edi Wijaya⁴, Muhammad Syukri⁵

^{1,2,3,4}Faculty of Communication and Languages, Bina Sarana Informatika University

⁴International Universitas Malaysia, Department of the Faculty of Business and Communications.

Corresponding: jemingadiono@gmail.com

Abstract

This study examines the relationship between digital health information literacy and fast-food consumption among adolescents and interprets the findings through the *halal-tayyib* perspective in Muslim communities. The empirical model does not measure halal certification, halal status, or halal literacy; therefore, *halal-tayyib* is used as an interpretive framework rather than as a tested latent construct. Data from 100 adolescents aged 15–19 years were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The final model retained nine indicators of digital health information literacy and six indicators of fast-food consumption. Reliability and convergent validity were satisfactory, with Cronbach's alpha values of 0.927 and 0.886, composite reliability values of 0.938 and 0.912, and AVE values of 0.630 and 0.635. Digital health information literacy was negatively associated with fast-food consumption ($\beta = -0.319$), while the model explained 10.2% of the variance in consumption ($R^2 = 0.102$; $f^2 = 0.113$). A parametric test on final PLS latent scores produced $t = -3.328$ and $p = 0.001$. From a *halal-tayyib* perspective, the result supports the importance of the *tayyib* dimension of goodness, safety, quality, and health considerations in consumer decision-making, but it does not establish that halal food is inherently healthier. The relatively small R^2 indicates that adolescent food consumption is also shaped by price, convenience, social influence, availability, and digital marketing. Future research in Muslim community contexts should directly measure halal literacy, halal certification trust, health consciousness, and *halal-tayyib* consumption orientation alongside digital health literacy.

Keywords: Adolescent Consumer Behavior; Digital Health Literacy; Fast-Food Consumption; *Halal-Tayyib*; Muslim Communities

Abstrak

Penelitian ini menganalisis hubungan antara literasi informasi kesehatan digital dan konsumsi makanan cepat saji pada remaja serta menafsirkan temuan dari perspektif *halal-tayyib* dalam konteks komunitas Muslim. *Halal-tayyib* digunakan sebagai kerangka interpretatif, bukan sebagai konstruk yang diuji secara empiris, karena model tersebut tidak mengukur status halal, sertifikasi halal, atau literasi halal. Data dari 100 remaja berusia 15–19 tahun dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM). Model akhir mempertahankan 9 indikator literasi informasi kesehatan digital dan 6 indikator konsumsi makanan cepat saji. Literasi informasi kesehatan digital berhubungan negatif dengan konsumsi makanan cepat saji ($\beta = -0,319$), dan model menjelaskan 10,2% varians konsumsi ($R^2 = 0,102$). Uji parametrik terhadap skor laten PLS akhir menghasilkan $t = -3,328$ dan $p = 0,001$. Dari perspektif *halal-tayyib*, temuan ini menegaskan pentingnya dimensi *tayyib* berupa kebaikan, keamanan, mutu, dan kesehatan dalam keputusan konsumen, tanpa menyiratkan bahwa makanan halal secara inheren lebih sehat. Daya jelaskan model yang terbatas juga menunjukkan bahwa harga, kemudahan, pengaruh sosial, ketersediaan, dan pemasaran digital tetap menjadi penentu penting dalam konsumsi makanan remaja.

Kata kunci: *Halal-Tayyib*; Komunitas Muslim; Konsumsi Makanan Cepat Saji; Literasi Kesehatan Digital; Perilaku Konsumen Remaja

INTRODUCTION

Within Muslim communities, consumption can be understood not only as an act of satisfying needs and obtaining utility, but also as a decision that considers permissibility, benefit, and the prevention of harm. The *halal-tayyib* principle provides a relevant framework for understanding food choices: *halal* concerns permissibility under Islamic law, whereas *tayyib* emphasizes goodness, including safety, quality, cleanliness, adequacy, and health. Therefore, this study does not equate *halal* with healthy. A product may meet *halal* requirements, yet its nutritional content, portion size, frequency of consumption, and health effects still need to be assessed. This distinction is important when discussing fast food among adolescents.

Adolescents are at a stage in which health habits are being formed, while they are also active users of digital media. Food decisions are now influenced not only by family, school, and the physical environment, but also by information from search engines, social media, applications, influencers, and digital advertising. Fast-food consumption can therefore be understood as a digital communication issue because adolescents are simultaneously exposed to health information and commercial messages that may shape their knowledge, preferences, and consumption decisions. Adolescents' ability to search for health information online is not always matched by an equally strong ability to assess its credibility and relevance (Taba et al., 2022).

In this study, digital health information literacy is understood as the ability to access, understand, evaluate, and use health information from digital media for health-related decision-making. This competence is important because access to technology does not automatically produce the ability to distinguish trustworthy sources, assess the relevance of information, and apply it appropriately. Representative studies of children and adolescents show that digital health literacy is unevenly distributed and is associated with users' social characteristics (Stauch et al., 2025). These skills can also be strengthened through digital educational interventions specifically designed to train in health information searching and evaluation (Hawkins et al., 2025).

Recent evidence in *Global Komunika* similarly positions health literacy as a communication process: Kurniawan et al. (2026) show that health media can support the acquisition, understanding, evaluation, and practical use of health messages, while Tahani and Sevilla (2024) report that Instagram use significantly met followers' mental health information needs. Although these studies involve different media and populations, they reinforce the importance of examining how audiences process health information rather than treating exposure alone as sufficient.

In the context of eating behavior, the ability to understand food information is associated with consumption choices. Food literacy among adolescents is related to fruit and vegetable consumption and several other eating behaviors (LeBlanc et al., 2022). Web-based education grounded in health literacy can also improve adolescents' literacy and nutrition-related behaviors (Dülger & Ayaz-Alkaya, 2024). Thus, digital health information literacy can be positioned as a cognitive and communicative resource that helps adolescents translate health information into considerations when choosing food.

The challenge is that the digital environment serves as both a source of health information and a space for food marketing. A systematic review shows that social media is an important channel for marketing food and beverages to adolescents and can influence their food choices

(Kucharczuk et al., 2022). Food promotions on social media are often associated with energy-dense, nutrient-poor products, while promotional messages are frequently integrated into entertainment content favored by young users (van der Bend et al., 2022). Adolescents also report that fast-food restaurant advertisements and food-ordering applications are memorable for their visuals, price promotions, celebrity endorsements, and product novelty (Ares et al., 2022).

The relationship between marketing and consumption is supported by empirical evidence. A study of 9,695 respondents aged 10-17 years across six countries found associations among exposure to fast-food marketing, brand preferences, and fast-food intake (Bagnato et al., 2023). Transnational fast-food companies also employ a range of marketing strategies directed at adolescents in low- and middle-income countries (Bankole et al., 2023). Participatory research shows that food marketing appears on Instagram, TikTok, Snapchat, and YouTube, using persuasive techniques tailored to each platform and its audience (Elliott et al., 2023).

The categories of food marketed digitally also tend to be less supportive of healthy dietary patterns. Beverages, fast food, and candy and chocolate are among the most dominant categories in digital advertisements captured by adolescents (Elliott & Truman, 2024). Instagram is actively used by fast-food brands to encourage adolescent engagement (Bankole et al., 2024), while the social media marketing ecosystem expands exposure to products often classified as less healthy (Amson et al., 2025). Exposure to digital food marketing is also associated with the frequency of consumption within the promoted food categories (Ares et al., 2025).

This situation presents a paradox relevant to Muslim communities. Adolescents have broader access to health information, yet in the same digital space, they also receive commercial messages that encourage convenient and impulsive consumption. From a *halal-tayyib* perspective, consumption decisions should not stop at the question of whether a food is permissible; they should also consider whether the pattern of consumption is good, safe, proportionate, and supportive of well-being (*maslahah*).

This study aims to analyze the relationship between digital health information literacy and fast-food consumption behavior among adolescents. Specifically, it examines whether the ability to access, understand, evaluate, and use digital health information is associated with a tendency to consume fast food, and then interprets the findings through the *halal-tayyib* perspective in Muslim community contexts. The *halal-tayyib* perspective is not included as a statistical variable; therefore, conclusions regarding halal status, halal certification, or halal literacy are limited to conceptual implications and directions for future research.

Hypotheses

H1: Digital health information literacy is negatively and significantly associated with fast-food consumption behavior among adolescents; the higher the level of digital health information literacy, the lower the tendency to consume fast food.

H0: Digital health information literacy is not significantly associated with fast-food consumption behavior among adolescents.

LITERATURE REVIEW***Halal-Tayyib* as a Framework for Consumption Behavior in Muslim Communities**

The *halal-tayyib* concept provides a way to connect Muslim consumer studies and health communication without oversimplifying either field. Halal primarily determines the permissibility of ingredients, processes, and consumption practices under Islamic law, whereas tayyib provides guidance on the goodness of products and consumption patterns. Recent literature on halal consumer behavior shows that purchase decisions are shaped not only by religiosity but also by information quality, trust, attitudes, and market context. Arifin et al. (2023), through a survey of young Muslim consumers in Indonesia, show that content quality and religious awareness are associated with purchasing behavior in the halal industry. Fauzi's (2023) systematic review similarly shows that research on halal-certified products has developed around religiosity, behavioral theory, differences between Muslim and non-Muslim consumers, and SEM. More specifically, Utari et al. (2025) found that halal seasoning issues influenced both consumer awareness and purchase interest, demonstrating that halal-related information can operate as a salient communication cue in consumer decision-making. Together, these findings emphasize that “halal” operates within a broader decision system rather than as a single attribute that automatically explains overall product quality or healthfulness.

The *halal-tayyib* framework becomes more important when consumption is understood as an effort to preserve well-being (maslahah). Wiyono et al. (2022) show that intentions to purchase halal food are shaped by a combination of personal factors, social influences, and behavioral control, meaning that halal decisions remain influenced by consumers' practical circumstances. At the food-system level, Bux et al. (2022) position certification, traceability, food safety, and sustainability as interconnected elements in strengthening the halal ecosystem. Akbar et al. (2023) further show that global halal standards remain diverse and that harmonization is important for consumer trust. These studies support an analytical distinction between halal compliance and tayyib quality: certification plays an important role in ensuring compliance, while nutrition, safety, quality, and consumption patterns still need to be assessed separately.

The relationship with health must be interpreted carefully. Carrasco et al. (2022) found in a pilot study that the halal meat samples they examined had certain nutritional profiles and were associated with several favorable physiological indicators. However, findings specific to a particular type of meat or production process, and the limited sample size, cannot be generalized to a claim that all halal food is healthier. The tayyib perspective is relevant precisely because it moves the analysis beyond halal status toward questions of composition, processing, frequency, portion size, and health consequences. In an industry context, Aslan (2023) shows that consumers associate halal certification with trust in the quality, cleanliness, and safety of culinary products. This means that consumer perceptions may link halal with quality, but research must still distinguish those perceptions from objective health evidence.

Literacy, Trust, and Halal Consumer Behavior in Digital Environments

The development of the digital economy broadens the meaning of literacy within the halal ecosystem. Literacy no longer consists only of knowledge about permitted or prohibited ingredients, but also includes the ability to read labels, assess certification bodies, compare claims, identify information sources, and understand the commercial purposes of digital

messages. Abror et al. (2025) show that digital halal literacy can function as an antecedent of consumer behavior in the context of halal services, demonstrating that digital competence and halal knowledge can intersect within a single behavioral framework. In the health context, Tedjakusuma et al. (2023) found that decisions to purchase halal health supplements online are influenced by perceived benefits and several behavioral constructs. The communication dimension is reinforced by Global Komunika studies: Tahani and Sevilla (2024) demonstrate that social-media use can significantly satisfy health-information needs, while Kurniawan et al. (2026) show that media-based health information acquires value when audiences can understand, evaluate, and adapt it to everyday behavior. These findings indicate that digital environments function not merely as transactional channels, but also as spaces in which credibility, interpretation, and consumer judgments are formed.

Trust is also an important mechanism. Usman et al. (2024) show that attitudes, halal awareness, religious commitment, trust, and perceived risk are associated with the purchase of halal-certified food. Loussaief et al. (2024) demonstrate a serial mechanism in which religiosity is associated with awareness, trust, subjective norms, and perceived behavioral control, which in turn relate to attitudes and intentions to purchase halal-certified food. In the context of this study, these findings are important because digital health literacy also requires evaluating trust: adolescents must not only find information but also determine which information is credible and which constitutes commercial persuasion. Accordingly, the integration of digital health literacy and halal literacy is a conceptually plausible research agenda, although the two are not jointly tested in the present data.

Young Consumers, Food Choices, and the Research Gap

Young consumers are an important group in halal markets because their food choices are increasingly influenced by digital platforms, food-delivery services, brands, reviews, and peer environments. Febriandika et al. (2023) found that halal food purchase intentions among Generation Z Muslims in Indonesia are influenced by behavioral factors, while Pradana et al. (2024) show that halal awareness remains relevant to purchase intentions for foreign-branded food among young Indonesian consumers. In Global Komunika, Widiarti et al. (2023) found that online reviews on YouTube had a strong and significant relationship with skincare purchase intention among adolescent girls, illustrating how digital information can become a persuasive consumer cue. These studies focus largely on intention or purchase decisions, whereas the present study focuses on fast-food consumption behavior and the ability to process health information. This difference opens space to examine whether young consumers who possess halal-related or product-related knowledge also have sufficient capacity to assess the *tayyib* dimension of repeated consumption choices.

The digital dimension has become increasingly important because food transactions are now integrated into applications. Suhartanto et al. (2025) show that application service quality, perceived value, satisfaction, halal food quality, halal trust, and health risk are components of a loyalty model for halal food purchases through mobile devices. Dewi et al. (2022) emphasize that research on halal consumer behavior needs to move beyond a single context or group to explain diversity across the halal market. Cross-country evidence further supports this need. Prakoso et al. (2026), using 420 Muslim Generation Z respondents in Indonesia and Malaysia, found that halal awareness operates as an important boundary condition in the relationship between perceived halal brand quality and purchase intention.

Based on this literature, the research gap lies in the separation of three areas: digital health literacy studies, fast-food consumption studies, and halal consumer behavior studies. The present study does not yet integrate all three as empirical constructs, but it takes an initial step by testing the relationship between digital health literacy and fast-food consumption and then interpreting its implications through the lens of *halal-tayyib*. Future research should directly incorporate halal literacy, health consciousness, trust in certification, exposure to digital marketing, and tayyib orientation in matched cross-country samples.

RESEARCH METHODS

Research Design and Respondents

This study uses a quantitative approach with a cross-sectional analysis of the available survey data. The analytical sample consists of 100 adolescents aged 15–19 years. Of these, 57 respondents were female, and 43 were male; 98 respondents were recorded as residing in Mustikajaya District, Indonesia, and 98 reported having consumed fast food. All respondents in the final dataset indicated their willingness to participate in the study. The source manuscript does not provide detailed information on the data-collection period or sampling technique; therefore, neither was added by assumption in this revision.

International Collaborative and Cross-Country Contextualization

The empirical analysis in this article remains an Indonesia-based study; no Malaysian respondent data are included in the PLS-SEM estimation. The international dimension is expressed through the manuscript's Indonesia-Malaysia institutional collaboration and cross-country contextualization in interpreting the results, rather than by treating the available dataset as a two-country sample. This distinction is important to avoid overstating the evidence. As a regional benchmark, Prakoso et al. (2026) analyzed 420 Muslim Generation Z respondents in Indonesia and Malaysia and showed that halal awareness conditions the relationship between perceived halal brand quality and purchase intention. Their evidence is used here only to contextualize the present findings and to identify a future comparative design. A subsequent study should collect matched adolescent samples in Indonesia and Malaysia using equivalent measures of digital health literacy, halal awareness, exposure to food marketing, and actual food-consumption behavior.

Instrument and Variable Operationalization

The initial instrument consisted of two groups of ten items each, using a 1-5 response scale. The digital health information literacy construct encompasses the ability to obtain, understand, evaluate, and use health information, including knowledge of information sources and the health risks associated with unhealthy eating patterns. The fast-food consumption construct represents the tendency to choose, purchase, and consume fast food, including an orientation toward convenience. Following refinement of the measurement model, the final model retained nine health-literacy indicators (X1, X2, X4, X5, X6, X7, X8, X9, X10) and six fast-food consumption indicators (Y1, Y2, Y3, Y5, Y6, Y8). The *halal-tayyib* perspective was not operationalized as a construct; therefore, no indicators of halal status, halal certification, or tayyib were included in the PLS-SEM estimation.

Data Analysis Technique

The analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 (Ringle et al., 2024). Evaluation of the measurement model

included outer loadings, Cronbach's alpha, rho_A, composite reliability, Average Variance Extracted (AVE), the heterotrait-monotrait ratio (HTMT), the Fornell-Larcker criterion, cross-loadings, and VIF. Evaluation of the structural model included the path coefficient (β), R^2 , adjusted R^2 , f^2 , and the available model-fit indices. The available SmartPLS report did not include bootstrapping results. Therefore, the significance of the relationship was examined using simple parametric regression on the final PLS latent scores, with t, p, and 95% confidence intervals. These inferential results were treated as an additional check and were not presented as a substitute for standard bootstrapping in PLS-SEM.

Limits of the *Halal-Tayyib* Interpretation in Muslim Community Contexts

Halal-tayyib is used in the discussion stage to interpret the implications of digital health literacy for consumption behavior in Muslim community contexts. This framework does not alter the construct definitions, respondent scores, or statistical results. Accordingly, the study can discuss the importance of the *tayyib* dimension in food choice, but it cannot test whether the foods consumed by respondents were halal-certified, whether respondents had high halal literacy, or whether halal status had any specific effect on health. Likewise, the cross-country literature is used for contextual comparison only and does not convert the Indonesian dataset into a comparative Indonesia-Malaysia dataset.

RESULTS

Respondent Characteristics and Descriptive Statistics

The PLS-SEM analysis used 100 observations. Based on respondent characteristics, 57% were female, and 43% were male. All respondents were aged 15-19 years. A total of 98% were recorded as residing in Mustikajaya District, and 98% reported having consumed fast food.

Table 1. Respondent Characteristics

Characteristic	Category	n	%
Gender	Male	43	43.0
Gender	Female	57	57.0
Age	15-19 years	100	100.0
Residence in Mustikajaya	Yes	98	98.0
Residence in Mustikajaya	No	2	2.0
Ever consumed fast food	Yes	98	98.0
Ever consumed fast food	No	2	2.0

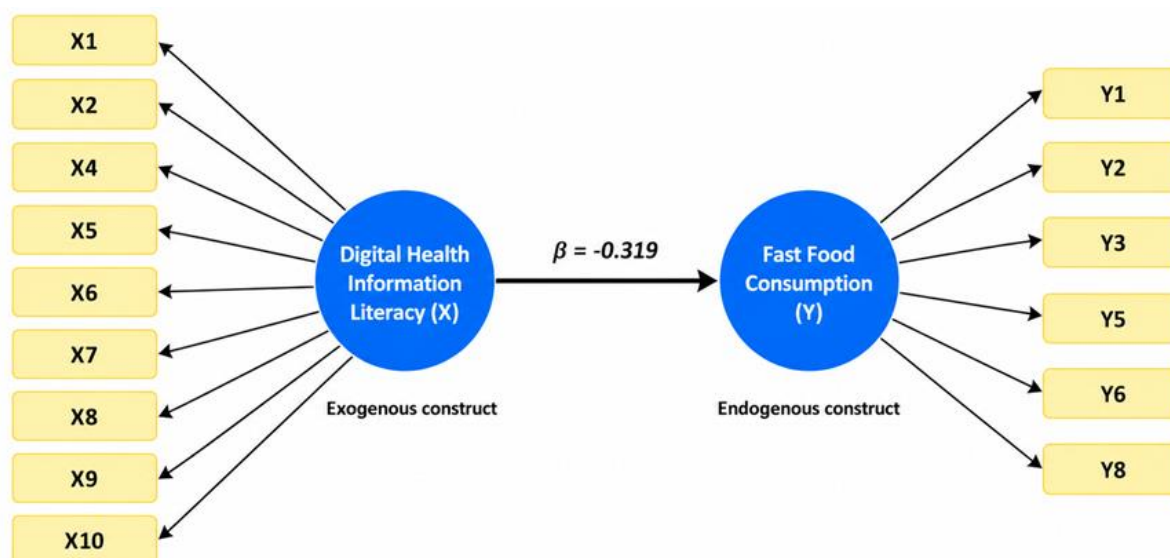
For the complete ten-item instrument, health literacy had an average item score of 4.025 on a 1-5 scale (SD = 0.480), with a mean total score of 40.25 (SD = 4.80). Fast-food consumption behavior had an average item score of 3.433 (SD = 0.530), with a mean total score of 34.33 (SD = 5.305). Descriptively, respondents' health literacy tended to be high, while fast-food consumption was at a moderate-to-high level. The highest mean literacy item was X5 (M = 4.27), which concerned knowledge that excessive fast-food consumption can adversely affect health, whereas the lowest was X3 (M = 3.76), which concerned knowledge of health-information sources.

Table 2. Descriptive Statistics Based on the Complete Instrument

Variable	Number of items	N	Mean total	SD total	Mean item	SD item
Health literacy	10	100	40.25	4.80	4.025	0.480
Fast-food consumption	10	100	34.33	5.305	3.433	0.530

PLS-SEM Model Specification

The final PLS-SEM model consists of two reflective constructs: Health Literacy as the exogenous construct and Fast-Food Consumption as the endogenous construct. The health-literacy construct is measured by nine indicators, while the fast-food consumption construct is measured by six indicators. The tested relationship runs from health literacy to fast-food consumption.

**Figure 1.** SEM-PLS Structural Model

Measurement Model Evaluation (Outer Model)

The outer loadings of the retained indicators ranged from 0.674 to 0.902 for health literacy and from 0.703 to 0.912 for fast-food consumption. X8 had the highest loading on the health-literacy construct (0.902), whereas X1 had the lowest loading (0.674). For the fast-food consumption construct, Y3 had the highest loading (0.912), whereas Y5 had the lowest loading (0.703). X1 was below 0.70, while Y5 and Y6 were very close to the 0.70 threshold; the decision to retain them was supported by adequate composite reliability and AVE for the constructs.

Table 3. Outer Loadings of the Final Model Indicators

Indicator	Construct	Outer loading
X1	Health literacy	0.674
X2	Health literacy	0.725
X4	Health literacy	0.732
X5	Health literacy	0.869
X6	Health literacy	0.860
X7	Health literacy	0.798
X8	Health literacy	0.902
X9	Health literacy	0.800
X10	Health literacy	0.755

Indicator	Construct	Outer loading
Y1	Fast-food consumption	0.814
Y2	Fast-food consumption	0.848
Y3	Fast-food consumption	0.912
Y5	Fast-food consumption	0.703
Y6	Fast-food consumption	0.706
Y8	Fast-food consumption	0.777

The internal reliability of both constructs was high. Health literacy had a Cronbach's alpha of 0.927, rho_A of 0.949, and composite reliability of 0.938. Fast-food consumption had a Cronbach's alpha of 0.886, rho_A of 0.937, and composite reliability of 0.912. The respective AVE values were 0.630 and 0.635.

Table 4. Construct Reliability and Convergent Validity

Construct	Cronbach's alpha	rho_A	Composite reliability	AVE
Health literacy	0.927	0.949	0.938	0.630
Fast-food consumption	0.886	0.937	0.912	0.635

Discriminant validity showed good separation between the two constructs. The HTMT value for the relationship between health literacy and fast-food consumption was 0.304. Under the Fornell-Larcker criterion, the square root of AVE was 0.797 for fast-food consumption and 0.794 for health literacy; both values exceeded the absolute interconstruct correlation of 0.319. Cross-loadings also showed that each indicator loaded most strongly on its intended construct. The inner VIF for the structural path was 1.000. In the outer model, X5 = 5.299 and X8 = 5.318; because the construct is reflective, these values were interpreted as signals of possible similarity in indicator content for future instrument refinement, rather than as a sole basis for deleting indicators.

Structural Model Evaluation and Hypothesis Testing

The path coefficient from Health Literacy to Fast-Food Consumption was negative, with $\beta = -0.319$. This direction is consistent with H1: the higher the level of health literacy, the lower the tendency to consume fast food. The R^2 value for the fast-food consumption construct was 0.102, with an adjusted R^2 of 0.092. The model explained approximately 10.2% of the variance in fast-food consumption behavior, while approximately 89.8% was attributable to factors outside the model. The f^2 value of 0.113 indicates an additional contribution of health literacy to the model's explanatory ability, although its magnitude was not substantial. The SmartPLS output reported a post hoc power of 0.938 at the 5% alpha level. For 80% statistical power at $\alpha = 5\%$, the calculated minimum sample size was 61 respondents; for 90% power, the minimum was 85 respondents. With $N = 100$, the sample size was adequate to detect the observed magnitude of the relationship in this model.

Table 5. Summary of the Structural Model and Hypothesis Testing

Relationship	β	R^2	R^2 adj.	f^2	t^*	p^*	95% CI*	Decision
Health literacy → fast-food consumption	-0.319	0.102	0.092	0.113	-3.328	0.001	[-0.509; -0.129]	Supported

Simple regression on the PLS latent scores produced $t = -3.328$, $p = 0.001$, and a 95% confidence interval from -0.509 to -0.129 . Because the interval did not cross zero, the negative relationship supported H1. However, because the available SmartPLS report did not include bootstrapping, this result should still be confirmed through a bootstrap procedure in further analysis.

Model Fit

The estimated model SRMR was 0.081. This value is very close to 0.08 and remains below 0.10, so the model fit can be regarded as descriptively adequate but not strong. The NFI value of 0.764 also indicates that the model did not achieve a high level of fit. In PLS-SEM, fit indices are interpreted alongside measurement-model quality, path strength, R^2 , and the model's predictive purpose.

Table 6. Summary of Model-Fit Indices

Index	Saturated model	Estimated model
SRMR	0.081	0.081
d_ULS	0.782	0.782
d_G	0.529	0.529
Chi-square	266.700	266.700
NFI	0.764	0.764

DISCUSSION

The main finding shows that digital health information literacy is negatively associated with fast-food consumption. A path coefficient of -0.319 means that respondents who were better able to access, understand, evaluate, and use health information tended to report lower fast-food consumption. This direction is consistent with food-literacy and health-literacy intervention studies among adolescents (LeBlanc et al., 2022; Dülger & Ayaz-Alkaya, 2024) and is conceptually compatible with Kurniawan et al. (2026), who show that health information becomes useful when audiences can translate it into meaningful lifestyle adaptation. However, an important inconsistency appears inside the present data: the mean health-literacy score was high (4.025/5), while fast-food consumption remained moderate-to-high (3.433/5). Thus, information-related competence and less healthy consumption can coexist. This tension cautions against a simple causal narrative in which more literacy automatically produces healthier behavior, particularly in a cross-sectional design.

From the perspective of Muslim communities, the result is best interpreted through the *tayyib* dimension rather than as evidence that “halal food is healthy.” This study did not measure the halal status of the foods consumed by respondents. Therefore, the contribution of *halal-tayyib* is interpretive: the ability to understand health consequences may help consumers evaluate whether a consumption choice is not only permissible but also good and proportionate. Literature on halal standards and sustainability shows that certification, traceability, safety, and quality are important dimensions of the halal ecosystem, but they are not identical to the nutritional assessment of every product (Bux et al., 2022; Akbar et al., 2023). Carrasco et al.'s (2022) study of halal meat demonstrates the possibility of specific nutritional characteristics in a particular context, but such findings cannot be generalized to all halal food categories, especially fast food.

The R^2 value of 0.102 is a substantively important result because it reveals the limited explanatory reach of health literacy alone. Approximately 89.8% of the variance in fast-food

consumption is not explained by the model and may include taste, price, availability, peer norms, family habits, time pressure, promotions, and the convenience of food-delivery applications. This modest explanatory power stands in marked contrast to communication studies that examine outcomes closer to the persuasive message. Widiarti et al. (2023), for example, reported that online reviews accounted for 71.4% of the variance in skincare purchase intention among adolescent girls. Utari et al. (2025) likewise found that a salient halal seasoning issue strongly influenced consumer awareness (50.2%), while awareness contributed to purchase interest (34.6%); the halal issue also had direct and indirect effects on purchase interest. Rather than invalidating the present result, these differences create an important dialogue: purchase intention and issue-specific awareness are more proximal outcomes than repeated food consumption, which is embedded in routines, prices, accessibility, convenience, and social environments. The contrast therefore suggests that persuasive communication may produce strong attitudinal or intentional responses without necessarily translating into equally large changes in everyday consumption behavior.

The *halal-tayyib* perspective raises a question often missing from studies of halal consumption behavior: are halal-conscious consumers also able to evaluate the health quality of their dietary patterns? Studies of young consumers show that content quality, awareness, intention, trust, and social norms shape halal-related decisions (Arifin et al., 2023; Febriandika et al., 2023; Pradana et al., 2024). Utari et al. (2025) strengthens this line of argument by showing that halal issues can raise awareness and purchase interest. Yet the present findings show that high health literacy does not eliminate fast-food consumption. These results are not necessarily contradictory; instead, they indicate that halal awareness, purchase intention, digital health literacy, and actual consumption are distinct stages of consumer behavior. Cross-country evidence from Prakoso et al. (2026) adds another layer: among Muslim Generation Z in Indonesia and Malaysia, halal awareness functions as a boundary condition in halal purchase intention. Because halal awareness was not directly measured here, the present study cannot assume that the same moderating mechanism applies to fast-food consumption. This difference should be tested rather than inferred.

The digital dimension further strengthens the need for such integration. Digital halal literacy has been identified as a factor influencing behavior within the halal ecosystem (Abror et al., 2025), while online purchases of halal health products indicate that perceived benefits and behavioral constructs remain important determinants of consumer decisions (Tedjakusuma et al., 2023). At the same time, the Global Komunika literature demonstrates that successful information communication should not be equated automatically with behavioral change. Tahani and Sevilla (2024) found a strong relationship between Instagram use and fulfillment of mental-health information needs, whereas Kurniawan et al. (2026) emphasize the interpretive process through which health messages become meaningful and actionable. The present study extends this dialogue by showing that access, understanding, and evaluation of health information are associated with consumption, but explain only a limited portion of it. In app-based food services, service quality, value, satisfaction, halal food quality, halal trust, health risk, promotions, reviews, and convenience coexist in a single interface (Suhartanto et al., 2025). The literacy required of adolescents is therefore multidimensional and operates within a persuasive commercial environment.

A practical implication of this study is the need for consumer education that does not stop at two separate messages - “check halal” and “eat healthy” - but instead builds the

capacity to interpret both simultaneously. Educational materials can train adolescents to identify legitimate certification sources, read nutrition information, compare portion sizes, understand the risks associated with frequency of consumption, recognize influencer and review-based persuasion techniques, and assess the credibility of health claims. From a *halal-tayyib* perspective, the objective is not to reject all fast food but to encourage more informed decisions about the type, frequency, portion size, and context of consumption. Communication strategies should therefore combine halal information, nutrition literacy, and critical evaluation of digital marketing rather than assuming that one form of awareness will automatically produce another.

This study has several limitations. First, *halal-tayyib* was not measured empirically, so the discussion in Muslim community contexts should not be interpreted as a test of the effects of halal literacy or halal certification. Second, the model has only one predictor and a relatively small R^2 value. Third, the cross-sectional data limit causal inference. Fourth, the available analysis report did not include SmartPLS bootstrapping. Fifth, the source manuscript did not provide detailed information on the sampling technique or data-collection period. Sixth, despite the international collaborative framing and the Indonesia-Malaysia contextual literature, the empirical respondent data remain Indonesian; no cross-country statistical comparison is claimed. Future research should add halal literacy, digital halal literacy, health consciousness, trust in halal certification, exposure to digital marketing, peer norms, price, accessibility, and *halal-tayyib* orientation as directly measured constructs, and should test them with matched samples from Indonesia and Malaysia or other Muslim community contexts.

CONCLUSION

The PLS-SEM results show that digital health information literacy is negatively associated with fast-food consumption behavior among adolescents ($\beta = -0.319$). The model explains 10.2% of the variance in consumption ($R^2 = 0.102$), while a parametric test of the final latent scores produced $t = -3.328$, $p = 0.001$, with a 95% confidence interval entirely below zero. In terms of direction and the additional inferential check, H1 is supported, although confirmation within the PLS-SEM framework still requires bootstrapping. The measurement-model quality is good, with composite reliability above 0.90, AVE above 0.60, and HTMT = 0.304.

Within Muslim communities, these findings are relevant to the *tayyib* dimension of consumption behavior: the ability to evaluate health information can be a resource for choosing consumption patterns that are better, safer, and more proportionate. However, this study did not measure the halal status of foods and does not demonstrate that halal food is automatically healthier. Halal and healthy should be treated as related yet distinct dimensions; the *tayyib* principle serves as a conceptual bridge, encouraging consumers to consider quality, safety, nutrition, and the prevention of harm alongside halal compliance.

The relatively small R^2 value indicates that adolescent eating behavior cannot be fully explained by health literacy. The contrasts with studies of halal awareness, online reviews, and health-information use further indicate that awareness, purchase intention, and actual consumption should not be treated as interchangeable outcomes. Future research should develop a Muslim consumer model that directly tests digital halal literacy, trust in halal certification, health consciousness, exposure to digital marketing, peer norms, price, ease of

access, and *halal-tayyib* consumption orientation. A matched Indonesia-Malaysia design would be especially useful for testing whether halal awareness and health literacy operate similarly across Muslim communities rather than relying on contextual comparison alone.

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