

# Exposures, Attitudes, and Behavioral Responses of Young Consumers toward Product Placement through YouTube Video-Game Streaming

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## ABSTRACT

YouTube video-game streaming is a popular entertainment among young consumers. As a result, product-placement activities in YouTube video-game streaming have become one of the vital advertising tools, yet there are some concerns about how it might lend undesirable effects on young audiences. Therefore, to prepare advertising practitioners to cope with any issue that might occur, this study aims to 1) explore young consumers' exposure, attitude, and behavioral responses to product placement in YouTube video-game streaming, and 2) examine the influence of consumers' exposures and attitudes toward product placement through YouTube video-game streaming on behavioral responses among Generation-Y and Generation-Z groups. The results from a survey of 463 Thai samples show that most of the respondents' exposures to the product placement within video-game streaming are interwoven into the video narratives and that the respondents have positive attitudes toward eco-friendly products while agreeing that there should be regulations for online product-placement practices. Most behavioral responses of the respondents are their preferences to follow the game-streamers' channels. The result of the t-test analysis shows that Generation-Z respondents exhibit more behavioral responses than Generation-Y ones. Furthermore, multiple-regression analysis reveals that the most influential factor towards consumer behavioral responses is the affective or "Feel" component, such as positive attitudes toward eco-friendly products for online product-placement practices, product preference, reliability, and positive attitudes toward game-streamers' product-placement activities.

**Keywords:** YouTube, Video-game Streaming, Product Placement, Behavioral Responses, Gen-Y and Gen-Z Consumers, Thailand

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## 1. INTRODUCTION

Lifestyles of people nowadays have changed rapidly due partly to the influences of digital technology based on how it facilitates their daily activities. Digital 2019 Q4

Global Digital Statshot [1] stated that the number of global populations using the Internet in 2019 increased to four hundred million, which is 10 percent higher compared with that in 2018. As for the age of Internet-users of online media, Thai people spent an average of 10 hours 22 minutes per day, representing an increase of 17 minutes from 2018, particularly with those in their learning and working-age spending an average of 9 hours 52 minutes per day [2].

Demographically, Thai Internet-users can be ranked as follows: Generation Y (Gen Y) aged between 19 and 38 years old spend their online time the highest at 10 hours 36 minutes, followed by Generation Z (Gen Z) who are younger than 19 years of age with an active online time of 10 hours 35 minutes, while the Baby-Boomer group ranging from 55 to 73 years old is active on average for 10 hours, and lastly, Generation X (Gen X) users with ages from 39 to 54 years old are active for 9 hours and 49 minutes [2].

Such ranked data suggest that most Thai Internet-users are young consumers (Gen Y and Gen Z) who are attracted to the YouTube platform while “YouTubers” (i.e., those who stream their contents via YouTube channels) have devised strategies to entice and retain their audience groups. YouTubers generally increase the numbers of their viewership and subscribers by presenting their content according to the lifestyles of their target audiences, e.g., traveling, dining, pranking, product-reviewing, game-streaming, etc. Hence, the rapid growth of YouTube viewers has turned its platform into a new advertising tool [3].

Moreover, the popularity of watching videos on YouTube via mobile phones serves marketers in expanding their advertising space to target consumers, and YouTubers have become the brand ambassadors for product/brand owners beyond traditional advertising agencies by placing products in the YouTubers’ video content or simply including products in channels as a paid YouTuber. By one definition, an advertising video that is not recognized as an overt advertisement on YouTube but guarantees non-skipping viewers can be deemed as product-placement advertising. As viewers tend to skip conventional advertisement contents but not amusement ones, embedding a product in a video clip provides the potential to interface the product with an exciting storyline (characters, settings) [4]. This idea has been one of the reasons why the product-placement strategy is well known among YouTubers since making their content more engaging might prove effective to pull in more subscribers [3].

According to the study on “Marketing Communication on YouTube and its influence on consumer behavior” [5], gaming content, both online and offline as well as on mobile platforms and game consoles are most popular with Thai young consumers. In addition, the game industry in Thailand has accounted for 85% of the digital content industry in 2020. The changing notion of the gaming industry from recreation to a professional E-Sports competition is another key factor accelerating growth. These events will accelerate its popularity and translate into the high growth of the Thai games industry. The prosperity of this industry will be passed on to related businesses as well, such as event organizers, content creators, game reviewers, video

production businesses, event venues, and accommodation businesses [6].

The game-playing formats depend on the skill of the game-streamers with Thailand having approximately four hundred of them on YouTube, and that number is constantly growing. Moreover, most YouTube gaming content is either recorded videos or players' voiceover ones to entertain audiences to be immersed together in such games. Followers of YouTube game-streamers are people wishing to play games yet having certain reasons not to engage, but rather, letting others demonstrate trial experiences on their behalf. If the demonstrated games are satisfactory, then such followers might consider buying them later.

Consequently, it is beneficial for academicians and practitioners alike in the advertising field to explore YouTube video-game streaming since its influence on young consumers is highly significant. Also, there has been concern about how it might lend undesirable effects on young consumers [5]. Moreover, surprisingly, the nature of YouTube video-game streaming influence and behavioral responses has not always been clear in the past. For instance, it has been noted that product placement influences consumer response [3, 4] but not yet answered questions regarding the form of product placement in gaming content and the kind of presentations that Gen-Z and Gen-Y consumer response to. Thus, to understand this novel online media tool and be prepared for any issue that may arise, this study shall explore and examine the exposures, attitudes, and behavioral responses of Gen-Z and Gen-Y consumers toward YouTube video-game streaming to formulate a set of practical guidelines for improving marketing communication by businesses or organizations. Hence, the research objectives of this study are:

- 1) To explore young consumers' exposures, attitudes, and behavioral responses to product-placement practices via YouTube video-game streaming; and
- 2) To examine the effects of young consumers' exposures and/or attitudes toward product placement in YouTube video-game streaming on their behavioral responses.

## **2. LITERATURE REVIEW**

This research gathers information from past studies, prevailing theories, current articles, and relevant documents to use them as a background source for conducting its study and propose the following topics.

### **2.1 Young Consumers and YouTube**

Gen-Z and Gen-Y consumers are unique when growing up in and living through the Digital Age. Specifically, they are digital natives and have global civic engagements, yet possess different points of view and social media usages [7-9]. Swanzen contrasts between Gen-Y group (1978–2000), also known as the Millennials because they would have begun reaching the age of 18 and entering college, or participating in the adult workforce at the turn of the millennium, and Gen-Z group

(1995–2012) [7] as follows:

- Gen Y is tech-savvy, using two screens, thinking in 3D, communicating with text, collaborative, radically transparent, slacktivists, and sharing stuffs ;
- Gen Z is tech-innate, using five screens, thinking in 4D, communicating with images, pragmatic and cautious, judiciously sharing (GeoLoco off), activists, and making stuffs.

Moreover, according to the 2021 Consumer Culture Report by 5WPR, the number-one place Gen-Z group lives online is YouTube. It is where Gen-Z people spend their time and where nearly half (i.e., 47 percent) of products they are interested in purchasing are found [10]. A study in Romania shows that the majority of Gen Z follows reviews on YouTube and would be influenced by online videos in their buying-decision process [11].

Even though characteristics and communication traits differ between Gen-Y and Gen-Z groups, previous studies on YouTube-based marketing communication provide some results indicating what Gen Y and Gen Z have in common. Duffett, Petroșanu, Negricea, and Edu find that Gen-Y and Gen-Z consumers have similar preferences toward the environmental sustainability of products presented on YouTube [12].

In addition, for Thai Gen-Y and Gen-Z consumers, the vital factor influencing their behavioral responses is the affective or “Feel” component, which are positive attitudes toward these aspects: 1) information provision about products 2) reliability of YouTube videos; 3) brand preference of products in YouTube videos; and 4) funs and interesting approaches about products that YouTubers employ in their videos [3]. A previous study in South Africa shows that YouTube-based marketing communication has a positive influence on the hypothesized attitudinal associations [13].

## **2.2 Gamers and Product Placement on YouTube**

Gamers insert their voice and the way they play games in their video clips to entertain their audiences while sharing viewers’ emotions with the gamers. Previous studies [14, 15] aims to explore an overview of today's gamers and their product-placement activities on YouTube for children and youths in Thailand. The qualitative research was conducted through an in-depth interview with four Thai gamers and content creators on YouTube in 2020. The results reveal that product placement in game-casting is not the same as general product placement. [14]. Another study used content analysis method to analyze 216 video clips on YouTube in Thailand uploaded between November 2019 to April 2020. The research found that 1. There was advertising (product placement) in video clips of gamers. 2. The most found product was game, the most common type of advertising was playing games, followed by other forms of marketing communications such as, notify a special game event. [15]

Video clips are created with advertising content in mind to be consistent with the main contents of certain channels. They attract viewers by advertising products that

blend in seamlessly with the games being cast. Presentations and selections of products depend on how each of the gamers wants to employ them. Thus, the viewers shall not feel that such a game-cast product placement is annoying, but instead, they shall feel entertained by the advertising delivered by the gamers. Furthermore, all gamers clearly know their target audiences by close attention to those who follow their YouTube channels, especially children or younger consumers whose ethical behavior could be negatively affected by the content they present [5,15-17].

Based on the above rationales, this research proposes the following testable hypothesis and the subsequent one (both are shown in Figure 1: A Conceptual Model):

**H1:** Younger audience group (represented by Gen-Z group) has more consumer behavioral responses to product placement in YouTube video-game streaming than the older audience group (represented by Gen-Y group) has.

### 2.3 Tri-component Attitude Model

Schiffman and Kanuk [18] state a model that explains three components of consumer attitudes as follows:

1. Cognitive component, or belief, is about knowledge and perception that have been gained from a combination of direct experience and information from consumers' various sources. In other words, knowledge and perception would affect belief;
2. Affective component, or feeling, is about the emotion that consumers have toward a certain product or brand. It has been used to evaluate brands from worst to best, dislike to like, bad to good, loathe to love; and
3. Conative component, or behavior, is about buying intention which is known as behavioral intention. Consumers would choose to react toward certain products and brands.

Attitudes also combine those components to help consumers make their purchases continuously, e.g., consumers would require prior beliefs, ongoing preferences, and current intents about certain products/services and tend to buy them accordingly.

This model is used as a framework to design the survey questions for this study and formulate the hypothesis testing with variables shown in Figure 1.

## 2.4 Consumer Behavioral Responses

The research by Benjarongkij, (Kotsa, 2017 as referenced in Ongkrutraksa, 2019) [5] on responses of consumers to new media states that consumer behavioral responses can be classified into two types: (i) expressions of communication on social media, and (ii) expressions of behavior in purchasing decisions. This study utilizes this conceptual framework to measure behavioral responses to product placement on YouTube as follows:

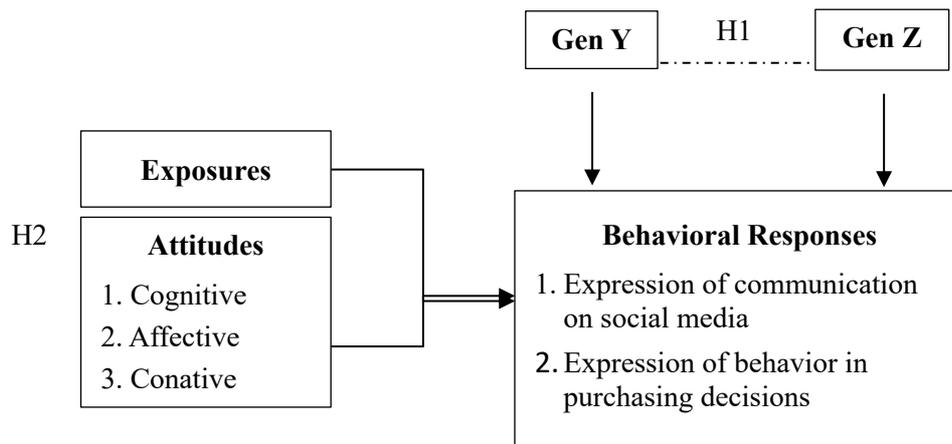
1. Expressions of communication on social media:
  - 1) Finding information about product placement in YouTube video clips
  - 2) Liking YouTube video clips
  - 3) Commenting on YouTube video clips
  - 4) Sharing YouTube video clips to other social media
  - 5) Downloading YouTube video clips
  - 6) Following YouTubers' channels
  - 7) Going to external links of the main website of certain ads
2. Expressions of behavior through purchase decisions as measured by buying activities of products/services from being exposed to the product placement in YouTube video clips.

Moreover, a previous study reveals that organizations should endeavor to encourage liking among young generational groups, which would lend favorable impacts on the affective hierarchical phase that shall ultimately influence purchase decisions [13]. Thus, to verify the previous research's results, this research proposes another testable hypothesis as follows.

**H2:** Exposures and attitudes influence consumer behavioral responses to product placement in YouTube video-game streaming.

**Independent Variables:** Exposures and attitudes toward product placement in YouTube video-game streaming

**Dependent Variables:** Consumer behavioral responses toward product placement in YouTube video-game streaming



**Figure 1: A Conceptual Model**

### 3. METHODOLOGY

Data collection in this survey is performed online from a pool of sample consumers who watch YouTube video-game streaming with an aim to study and assess the exposures, attitudes, and behavioral responses to product placement in YouTube video-game streaming. Its details are as follows.

#### 3.1 Population and Samples

The researcher uses quota sampling for data collection; the sample is divided into two groups, the first group, aged 13-17 years old (Gen Z), with a total of 233 people. In accordance with COPPA's law to protect children under 13 years old regarding using online media and collecting children's personal information which was effective since April 21, 2000 [19], the samples older than 13 years old are selected. The second group is in the age group of 18-37 years old (Gen Y), with a total of 230 people. The researcher determines the sample size from the population of 5,676,648 based on a database of the Bureau of Registration Administration, Department of Provincial Administration, Bangkok, in 2019 [20], using Taro Yamane's random sampling method at a 95-percent confidence level with an error of +/-5 percent, then, a total of 463 sampled respondents were obtained. To ensure whether the sampling conforms to the general population, the simple random sampling method is used based on the samples' residency.

An online survey questionnaire was developed to test hypotheses in this research and distributed from July to August 2020. A screening question was set as the first question in the questionnaire to confirm that each respondent experiences of watching YouTube video clips. Respondents were recruited through contacts from schools, universities, businesses in Bangkok both online and offline.

Descriptive statistics of the samples on demographic data, a platform for YouTube usage, and their favorite game-streamers are shown in Table1. To sum up the

smartphone is the most popular device for YouTube usage, and MR. HEART ROCKER's channel is the most favorite channel.

**Table 1: Demographic Profile**

	No.	Percentage
Gender		
Male	209	45.14
Female	254	54.86
Age		
Generation Y (18-37 years old)	209	45.14
Generation Z (13-17 years old)	254	54.86
A platform for YouTube Usage		
Smartphone	299	64.58
Desktop computer	78	16.85
Tablet	49	10.58
Notebook computer	32	6.91
Favorite Game-streamers' Channel		
MR. HEART ROCKER	259	55.94
Zbing	65	14.04
Others	64	13.82
Maser Gamer	44	9.50
Bay Riffer	31	6.70

### 3.2 Research Instruments

In this study, the researcher selects exploratory research by collecting data via a survey which is approved by 2 marketing communication academics and certified by Research Ethics Review Committee for Research Involving Human Subjects, Chulalongkorn University. Fifteen questions are used to measure the independent variables and seven questions are used to measure the dependent variables. Aside from demographic profiles, all items are measured on a five-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire is presented online in the form of closed-ended and open-ended questions, divided into general information of the respondents, their demographic information, and their behavior in watching YouTube video-game streaming. The questions in this section are generated by analysis of "Digital Thailand 2020 How We Are Social" comparing with its 2019 issue [21], research by Folkvord, Bevelander, Rozendaal and Hermans [22], and data from top 20 gamers in Thailand [23].

Additionally, the exposures' questions were based on the exposure to several types of product placement based on Russel's research in 2019 [4], and previous study by Ongkrutraksa [3], attitudes questions based on a Tri-component Attitude Model [17], and previous study by Ongkrutraksa [3], and behavioral responses' questions based on Benjarongkij [5].

### 3.3 Variables in the Research

Variables according to the two hypotheses are as follows.

**H1:** Younger audience group (Gen Z) has more behavioral responses to product placement in YouTube video-game streaming than older audience group (Gen Y) has.

**H2:** Exposures and attitudes influence consumer behavioral responses to product placement in YouTube video-game streaming.

The measurement for independent variables of exposures and attitudes includes the following.

**Independent Variables:** Exposures are measured based on how often the samples watch product placement on YouTube video-game streaming in one week, which are divided to several types of product placement based on Russel's research in 2019 [4], previous study by Ongkrutraksa [3], and attitude towards product placement in YouTube video-game streaming. Attitudes are divided into three groups, which are designed based on a Tri-component Attitude Model [17], previous study by Ongkrutraksa [3], namely (i) Cognitive or "Learn," (ii) Affective or "Feel," and (iii) Conative or "Intend to Do," in order to derive the measurement metrics that can serve as the predictor for behavioral responses to product placement on YouTube video-game streaming. In total, there are seven independent variables as follows:

**Independent Variable (Group A)** – Exposures to product placement in YouTube video-game streaming:

- 1) Videos that game-streamers place products such as snacks, toys, clothes, etc., or talk about those products during the game.
- 2) Videos that game-streamers have products they want to sell as props during streaming.
- 3) Videos that game-streamers mention products they want to sell or product placement during streaming.
- 4) Videos that game-streamers mention products often in a fun and interesting way during streaming.

**Independent Variable (Group B)** – Attitudes toward product placement in YouTube video-game streaming:

- 1) Cognitive or "Learn"
  - Getting to know products from YouTube video-game streaming that the streamers place or mention those products.
- 2) Affective or "Feel"
  - Product preference in YouTube video-game streaming that the streamers place or mention those products.
  - Feeling of reliability in YouTube video-game streaming that the streamers place or mention those products.
  - Positive attitude towards game-streamers' product placement in YouTube

video-game streaming.

- Eco-friendly product preference that appears on YouTube video-game streaming that the streamers place or mention those products.

### 3) Conative or “Intend to Do”

- Product recommendation from YouTube video-game streaming that the streamers place or mention those products.

**Dependent Variables** – Behavioral responses to product placement in YouTube video-game streaming:

The dependent variables are based on Benjarongkij [5] with two types of behavioral responses: (i) expressions of communication on social media, and (ii) expressions of behavior in purchasing, which can be elaborated in to details as follows.

#### 1) Expressions of communication on social media:

- Finding out more about product information from YouTube video-game streaming that one hears of or sees the product;
- Liking YouTube video-game streaming that one hears of or sees the product;
- Commenting on YouTube video-game streaming that one hears of or sees the product;
- Sharing YouTube video-game streaming that one hears of or sees the product to one’s social media platforms, e.g., Facebook, Instagram, Twitter, or LINE;
- Downloading YouTube video-game streaming that one hears of or sees the product;
- Following game-streamers’ channel of YouTube video-game streaming that one hears of or see the product;
- Going through the link(s) under the description of YouTube video-game streaming that one hears of or sees the product.

#### 2. Expressions of behavior in purchasing:

- Buying a product as in YouTube video-game streaming that one hears of or sees the product.

### 3.4 Testing Research Instruments

This study conducts the validity and reliability tests in the following manner. Regarding the validity test, the completed questionnaire of this study undergoes a thorough consultation with the experts to verify its correctness whether it covers the contents for the intended purposes, and whether the language being used therein is clear and appropriate.

In terms of the reliability test, when the questionnaire review has been completed, the researcher tests the questionnaire with the population characteristics that are close to the real sample (Pre-test) with a total of 30 sets and analyzes the results for credibility using Cronbach's Alpha coefficient to determine the reliability of the variables of the Likert scale, which Vanichbuncha [24] has determined the appropriate Alpha value being 0.90-0.70. The researcher has set the Alpha value at 0.70 or higher in order to measure the accuracy according to the formula for deriving its Cronbach's Alpha coefficient.

This study employs the questionnaire that has been tested for reliability by trying out 30 sets with a group of samples to check whether the questions could be interpreted as intended and convey proper meanings. Then, there is the confidence test of this questionnaire, which is based on Cronbach's Alpha coefficient formula;

Part 1: Exposures to product placement in YouTube video-game streaming has an Alpha coefficient of 0.954.

Part 2: Attitudes towards product placement in YouTube video-game streaming has an Alpha coefficient of 0.892.

Part3: Behavioral responses to product placement in YouTube video-game streaming has an Alpha coefficient of 0.911, which is considered reliable.

## **4. RESULTS AND ANALYSIS**

The Statistical Package for the Social Sciences (SPSS) is employed to analyze the primary data collected from research questionnaire in this study.

### **4.1 Descriptive Statistics**

Descriptive statistics of samples on demographic data are shown in Table 1. Tables 2 to 4 show percentages, averages, and standard deviations of exposures, attitudes, and behavioral responses of consumers to product placement on YouTube video-game streaming.

**Table 2:** Percentage, Average, and Standard Deviation of Exposure to Product Placement in YouTube Video-game Streaming

Exposure	Level of Exposure					Avg.	S.D.	Level
	Watching everyday (%)	Watching 6-5 days a week (%)	Watching 3-2 days a week (%)	Watching 2-1 days a week (%)	Never Watch (%)			
1. Videos that game-streamers place products such as snacks, toys, clothes, etc., or talk about those products during the game	31 (6.70)	31 (6.70)	92 (19.87)	190 (41.04)	119 (25.70)	2.28	1.119	Less Exposure
2. Videos that game-streamers have products they want to sell as props during streaming	26 (5.62)	37 (7.99)	76 (16.41)	188 (40.60)	136 (29.37)	2.20	1.116	Less Exposure
3. Videos that game-streamers mention products they want to sell or product placement during streaming	<b>34</b> <b>(7.34)</b>	<b>43</b> <b>(9.29)</b>	<b>66</b> <b>(14.25)</b>	<b>203</b> <b>(43.84)</b>	<b>117</b> <b>(25.27)</b>	<b>2.30</b>	<b>1.159</b>	<b>Less Exposure</b>
4. Videos that game-streamers mention products often in a fun and interesting way during streaming	22 (4.75)	39 (8.42)	81 (17.49)	204 (44.06)	117 (25.27)	2.23	1.068	Less Exposure

From Table 2, it is found that the samples are most exposed to product placement on YouTube video-game streaming, namely (i) video clips that game-streamers mention products they want to sell or product placement during streaming with an average of 2.30, followed by (ii) video clips that game-streamers place products such as snacks, toys, clothes, etc., or talk about those products during the game with an average of 2.28, and then (iii) video clips that game-streamers mention products often in a fun and interesting way during streaming with an average of 2.23.

**Table 3:** Percentage, Average, and Standard Deviation of Attitude toward Product Placement in YouTube Video-game Streaming

Attitude	Level of Attitude					Avg.	S.D.	Level
	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)			
1. Getting to know products from YouTube video-game streaming that the streamers place or mention those products	23 (4.97)	175 (37.80)	239 (51.62)	18 (3.89)	8 (1.73)	3.40	0.723	Somewhat Agree
2. Product preference in YouTube video-game streaming that the streamers place or mention those products	12 (2.59)	88 (19.01)	332 (71.71)	24 (5.18)	7 (1.51)	3.16	0.618	Somewhat Agree
3. Feeling of reliability in YouTube video-game streaming that the streamers place or mention those products	11 (2.38)	129 (27.86)	281 (60.69)	34 (7.34)	8 (1.73)	3.22	0.685	Somewhat Agree
4. Product recommendation from YouTube video-game streaming that the streamers place or mention those products	9 (1.94)	89 (19.22)	284 (61.34)	66 (14.25)	15 (3.24)	3.02	0.737	Somewhat Agree
5. Positive attitude towards game-streamers' product placement in YouTube video-game streaming	24 (5.18)	152 (32.83)	258 (55.72)	20 (4.32)	9 (1.94)	3.35	0.732	Somewhat Agree
6. Support for regulation on game-streamers' product placement in YouTube video-game streaming	52 (11.23)	160 (34.56)	197 (42.55)	45 (9.72)	9 (1.94)	3.43	0.885	Strongly Agree
7. Eco-friendly product preference that appears on YouTube video-game streaming that the streamers place or mention those products	<b>77 (16.63)</b>	<b>169 (36.50)</b>	<b>205 (44.28)</b>	<b>9 (1.94)</b>	<b>3 (0.65)</b>	<b>3.67</b>	<b>0.797</b>	<b>Strongly Agree</b>

From Table 3, it is found that most samples agree with the eco-friendly product preference appearing on YouTube video-game streaming that the streamers place or mention those products with an average of 3.67, followed by the idea that there should be regulations on game-streamers' product placement with an average of 3.43, getting to know products from YouTube video-game streaming that the streamers place or mention those products with an average of 3.40.

Lastly, the samples have the least attitudes toward product placement in YouTube video-game streaming is product recommendation from YouTube video-game streaming that the streamers place or mention those products with an average of 3.02.

**Table 4:** Percentage, Average, and Standard Deviation of Behavioral Response to Product Placement in YouTube Video-game Streaming

Behavioral Response	Level of Behavior					Avg	S.D.	Level
	Very Often (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)			
1. Finding out more about products information from YouTube video-game streaming that you hear of or see products	19 (4.10)	69 (14.90)	192 (41.47)	93 (20.09)	90 (19.44)	2.64	1.080	Moderate Response
2. Liking YouTube video-game streaming that you hear of or see products	18 (3.89)	68 (14.69)	193 (41.68)	77 (16.63)	107 (23.11)	2.60	1.110	Low Response
3. Commenting on YouTube video-game streaming that you hear of or see products	16 (3.46)	26 (5.62)	104 (22.46)	113 (24.41)	204 (44.06)	2.00	1.097	Low Response
4. Sharing YouTube video-game streaming that you hear of or see products to your social media, e.g., Facebook, Instagram, Twitter, LINE	8 (1.73)	39 (8.42)	121 (26.13)	107 (23.11)	188 (40.60)	2.08	1.075	Low Response
5. Downloading YouTube video-game streaming that you hear of or see products	8 (1.73)	21 (4.54)	73 (15.77)	91 (19.65)	270 (58.32)	1.72	1.000	Very Low Response
6. Following game-streamers' channel of YouTube video-game streaming that you hear of or see products	<b>25</b> <b>(5.40)</b>	<b>77</b> <b>(16.63)</b>	<b>188</b> <b>(40.60)</b>	<b>79</b> <b>(17.06)</b>	<b>94</b> <b>(20.30)</b>	<b>2.70</b>	<b>1.130</b>	<b>Moderate Response</b>
7. Going through link in description of YouTube video-game streaming that you hear of or see products	19 (4.10)	39 (8.42)	163 (35.21)	124 (26.78)	118 (25.49)	2.39	1.079	Low Response
8. Buying products as in YouTube video-game streaming that you hear of or see the products	8 (1.73)	25 (5.40)	118 (25.49)	115 (24.84)	197 (42.55)	1.99	1.027	Low Response

From Table 4, it is found that the samples having the most behavioral responses to product placement in YouTube video-game streaming follow the game-streamers' channel that they hear of or see products with an average of 2.70, followed by finding out more about product information from YouTube video-game streaming that they hear of or see products with an average of 2.64, and liking YouTube video-game streaming that they hear of or see products with an average of 2.60.

Lastly, the samples having the least behavioral responses to product placement in YouTube video-game streaming are to download YouTube video-game streaming that they hear of or see with an average of 1.72.

## 4.2 T-Test Analysis

T-test analysis was conducted to determine H1; significant differences between the mean scores of generation Y (18-37) and generation Z (13-17). As displayed in Table 5.

**Table 5:** Results of Individual Analysis of Behavioral Responses to Product Placement in YouTube Video-game Streaming by Demographics Classified by Age Range  
[Gen Y (18-37) and Gen Z (13-17)]

Behavioral Responses	Age	t-test for Equality of Means			
		Avg.	S.D.	t	Sig.
1. Finding out more about products' information from YouTube video-game streaming that you hear or see products	13 – 17	2.87	1.073	4.62	0.000*
	18 – 37	2.41	1.040		
2. Liking YouTube video-game streaming that you hear or see products	13 – 17	2.72	1.068	2.45	0.015*
	18 – 37	2.47	1.139		
3. Commenting on YouTube video-game streaming that you hear or see products	13 – 17	2.15	1.084	3.08	0.002*
	18 – 37	1.84	1.091		
4. Sharing YouTube video-game streaming that you hear or see products to your social media such as Facebook, Instagram, Line, Twitter	13 – 17	2.25	1.114	3.63	0.000*
	18 – 37	1.90	1.005		
5. Downloading YouTube video-game streaming that you hear or see products	13 – 17	1.74	1.002	0.46	0.648
	18 – 37	1.70	0.999		
6. Following game-streamers' channel of YouTube video-game streaming that you hear or see products	13 – 17	2.84	1.098	2.69	0.007*
	18 – 37	2.56	1.146		
7. Going through link in description of YouTube video-game streaming that you hear or see products	13 – 17	2.52	1.067	2.64	0.009*
	18 – 37	2.26	1.077		
8. Buying products as in YouTube video-game streaming that you hear or see the products	13 – 17	2.05	1.028	1.32	0.189
	18 – 37	1.93	1.028		

\* at a significant level 0.05

From Table 5, it is found that the average behavioral responses of the samples aged between 13-17 years old and 18-37 years old regarding:

- 1) Finding out more about products' information from YouTube video-game streaming that they hear of or see the products;
- 2) Liking YouTube video-game streaming that they hear of or see the products;
- 3) Commenting on YouTube video-game streaming that they hear of or see the products;
- 4) Sharing YouTube video-game streaming that they heard or saw products to their social media such as Facebook, Instagram, Twitter, and LINE;
- 5) Following game-streamers' channel of YouTube video-game streaming that they heard of or saw products; and
- 6) Going through link in the description of YouTube video-game streaming that they heard or saw products differed statistically at 0.05. Therefore, H1 was supported.

However, the individual average behavioral responses to product placement in YouTube video-game streaming of the samples aged between 13-17 years old and 18-37 years old regarding downloading YouTube video-game streaming that they heard or saw products and buying products as in YouTube video-game streaming that they heard or saw products not differed statistically at 0.05.

### 4.3 Multiple Regression Analysis

The study uses data to test the influence of independent variables (group A and B) on dependent variables through multiple regression analysis. The results are shown in Table 6.

**Table 6:** Results of Multiple Regression Analysis

Exposure and Attitude toward Product Placement on YouTube Video-game Streaming	Regression Coefficient		t	Sig.
	B	Beta		
<b>Variables to the Regression Equation</b>				
Conative or “Intend to Do”	0.256	0.238	5.329*	0.000*
Mention products often in a fun and interesting way during streaming	0.117	0.158	3.129*	0.002*
Affective or “Feel”	0.413	0.269	6.244*	0.000*
Have products they want to sell as props during streaming	0.122	0.171	3.329*	0.001*
<b>Variables not to the Regression Equation</b>				
Place products such as snacks, toys, clothes, etc., or talk about those products during the game	-	0.104	1.863	0.063
Mention products they want to sell or product placement during streaming	-	0.027	0.394	0.694
Cognitive or “Learn”	-	0.014	0.308	0.758
<b>Constant = - 0.426 R<sup>2</sup> = 0.359 SEE = 0.639 F = 64.038 Sig F = 0.000</b>				

\* at a significant level of 0.05

From Table 6, the results from multiple regression analysis of exposures and attitudes toward product placement on YouTube video-game streaming show that two Conative or “Intend to Do” variables and two Affective or “Feel” variables explain well the behavioral responses to product placement on YouTube video-game streaming of four independent variables. Three Cognitive or “Learn” variables, however, do not affect dependent variables significantly at 0.05.

There are four independent variables that positively affect the dependent variables: (i) Conative or “Intend to Do” variable with Beta = 0.238; (ii) Talking about things often in a fun and interesting way with Beta = 0.158; (iii) Affective or “Feel” variable with Beta = 0.296; and (iv) Having products they want to sell as props during streaming with Beta = 0.171, meaning that when the samples are exposed to product placement on YouTube video-game streaming, e.g., talking about things often in a fun and interesting way and having products they want to sell as props during streaming. Attitudes towards product placement on YouTube video-game streaming are ‘Intend to Do’ and ‘Feel’ more. Hence, there would be more behavioral responses to products

on YouTube video-game streaming's product placement as well.

Four independent variables from exposures and attitudes can describe the relationship between dependent variables (behavioral responses) for 35.90 percent and the equation obtained from the stepwise multiple regression analysis is statistically significant at 0.05. Therefore, H2 is supported.

## 5. CONCLUSION

With respect to descriptive analysis of exposures to different types of product placement on YouTube video-game streaming, the sampled respondents are exposed mostly to video clips that gamers directly "mention" the products they want to sell in their streaming, followed by these clips that game-streamers place or talk about such products as snacks, toys, clothes, etc. during the games. The third type of exposure includes video clips that gamers place products for sale as "props" during streaming. The least exposed are video clips which game-streamers often mention products in a "fun and interesting way" while streaming.

What the sampled respondents have the most positive attitudes about is the YouTube video-game streaming that addresses their eco-friendly product preference whenever the game-streamers place or mention such products to them. The second preferred attitude of the respondents is the idea that there should be regulation on game-streamers' product placement in YouTube video-game streaming. The third kind of positive attitude is about the respondents getting to know the placed products.

Top three behavioral responses of the sampled respondents are 1) following the game-streamers' channels that they hear of or see the products, 2) finding out more about product information from YouTube video-game streaming that they hear of or see the products, and 3) liking YouTube video-game streaming that they hear of or see the products. The lowest-ranked behavioral response is downloading YouTube video-game streaming that they hear of or see the products. The average number of behavioral responses to product placement on YouTube video-game streaming among the sampled respondents aged 13-17 years old is statistically greater than that of those respondents aged 18-37 years old.

The results from multiple regression analysis show that the most influential factor towards behavioral response is the affective or "Feel" attitudinal component, such as liking a product in the video clips, thinking that hiring game-streamers for product placement is a good thing, and liking eco-friendly products in the video clips. The results of stepwise approach analysis also show that the independent variables have positive effects on four dependent variables as follows:

- 1) Affective or "Feel" (Beta = 0.269)
- 2) Conative or "Intend to Do" (Beta = 0.238)

3) Having products they want to sell as “props” during streaming (Beta = 0.171)

Mentioning products often in a “fun and interesting way” during streaming (Beta = 0.158)

## **6. DISCUSSION**

### **Exposures to Product Placement on YouTube Video-game Streaming**

The results of this study show that the sampled respondents are exposed mostly to product placement on YouTube video-game streaming that game-streamers mention the products they want to sell or advertise during streaming, in accordance with the research by Tanyanuraksa,[25] which states that there is more positive attitude towards online product placement than prominent branding in other kinds of advertising media.

Furthermore, products being featured as props or presented in an amusing or interesting way in game-streamed video clips help entertain the sampled respondents better, pursuant to the research by Ongkrutraksa, [5] which concludes that people are more effectively exposed to video clips with products being presented in a form of entertainment.

### **Attitudes towards Product Placement on YouTube Video-game Streaming**

This research study suggests that most sampled respondents have positive attitudes toward product placement on YouTube video-game streaming, especially eco-friendly products, which is supported by Duffett et al. [13] and Cheng and Shiu [26] who point out that today’s consumers are more concerned with environmental problems. Thus, for younger consumers, sustainable or eco-friendly products presented or placed in YouTube video clips are attractive to and appreciated by them.

Another type of consumer attitude is that there should be regulation on game-streamers’ product placement in YouTube video-game streaming. This idea is important because game-streamers are increasingly influential to young consumers, e.g., Ofcom [27] explains online safety for children, stating that any child who watches video clips containing self-harmful content can be affected cognitively or behaviorally. It infers those respondents can perceive the impact on their behavior from the product presented by game-streamers. This particular result reflects the need for all parties concerned to be aware of the effects on vulnerable consumers like younger children and the requirement of some control over this online advertising tool, which supports the results from previous studies [16,17]. Moreover, the result shows that respondents are concerned about less or no ethics in the content of game casters since people who watch game casters are at an early age. If there is violent content, it may affect the children in terms of behavior [16,17].

### **Behavioral Responses to Product Placement on YouTube Video-game Streaming**

The sampled respondents exhibit a strong behavioral response to product placement in YouTube video-game streaming in terms of following the game-

streamers' channel. Another main behavioral response is finding out more about product information from YouTube video-game streaming that they hear of or see the products. The results are supported by the Department of International Trade Promotion [28], which states that Gen Z and Gen Y prefer to receive information through social media channels and search for product information thoroughly before making their purchase decisions.

### **Results from Data Analysis by Inferential Statistics based on Research Hypothesis**

The results of from t-test comparison analysis reveal that viewers between the age of 13-17 years old (Gen Z) exhibit more behavioral responses than viewers between the age of 18-37 years old (Gen Y), which support the previous studies stating that Gen Z and Gen Y have different points of view on video clips to which they are exposed [7-10]. All of Gen Z's actions are rooted in one thing: the generation's quest for truth. They are firm believers in the power of dialogue to resolve disputes and improve the world. Gen-Z group makes analytical and pragmatic decisions and interacts with institutions. The previous generation, i.e., the Millennials (Gen Y), also known as the "me-generation," grew up in a period of economic affluence and is self-centered. The group's adherents are more idealistic, combative, and unable to accept opposing viewpoints [9]. Other studies also show that most Gen-Z people follow reviews on YouTube and could be influenced by online video clips in their buying-decision process [12,13].

The results from multiple regression analysis further show that the independent variables serving as the main factors of attitudes are product preference and the reliability of YouTube video-game streaming. In other words, the more consumers like or trust YouTube video-game streaming, the higher the level of behavioral responses would be. These results support previous studies that YouTube marketing communication has a positive influence on the hypothesized attitudinal associations [3], [13]. The results also validate those in the previous research by Worrakullatane and Sampattavanija [29], who find that consumer behavior can be altered due to various external factors including communication, technology, etc. whereby they can influence cognitive, affective, or conative actions of individuals.

In addition, when classifying independent variables in a more streamlined fashion and conducting the stepwise multiple regression analysis, it further shows that the variable that influences consumer behavior the most is the 'Feel' component of consumer attitude, which corresponds to the research by Ongkrutraksa [5], which finds that the most influential behavioral determinant is the affective factor, i.e., a positive attitude toward YouTubers. In other words, attention to the positive feelings of the target group is vital to creating behaviors that respond to the needs of marketers and game casters.

## **7. PRACTICAL IMPLICATIONS**

1. The results show that the greatest influence on behavioral responses is the ‘Feel’ component, e.g., product preference, product reliability, and positive attitude towards game-streamers’ product placement. Therefore, traditional marketing communication may not be effective when the affective attitudinal factor is not adequately emphasized. Businesses should incentivize the groups who only watch but are disengaged (e.g., sharing, commenting, clicking on recommended links) to become enthusiastic buyers by employing the ‘Feel’ factor in video clips with more attractiveness, reliability, and positive issues such as eco-friendly contents, since those groups are already loyal to the game-streamers yet lacking attention to keep their interests in the products being placed. Thus, businesses can focus on environmental issues in order to develop positive attitudes necessary to influence buyers’ intentions [10].
2. This study suggests that viewers in the age range of 13-17 years old (Gen Z) have more behavioral responses than those in the range of 18-37 years old (GenY). As Gen-Z group is more active and responsive than Gen-Y one, Gen Z people would spend most of their time on YouTube and become potential buyers. Thus, to avoid any unethical issues, businesses that use product-placement strategy in YouTube video-game streaming should be aware of how it might produce undesirable effects on young consumers. Even though there are regulations and ethical guidelines for advertising on YouTube, some game-streamers are still not convinced that they are effective enough to protect young and vulnerable consumers. However, some of them are aware of their power on young consumers and try to avoid the placement of illegal or unethical products such as gambling, etc. [5], [14, 15].
3. This research has a distinctive innovation and theoretical implication, which is the addition of a variable: environmentally friendly product preference in the research measurement based on the tri-component of attitude model. Most past research on the tri-component of attitude model may not include these variables. However, the result of this research shows that the respondents have positive attitudes toward eco-friendly products for online product-placement practices. Therefore, in addition to focusing on only basic attitude components, attitudes toward environmental issues should also be included in the future research measurement.

## **8. DIRECTIONS FOR FUTURE RESEARCH**

Future research related to this study should focus on other age groups beyond the Gen-Y and Gen-Z ones to see whether there are any similar findings based on their online-game viewing in light of their exposures, attitudes, and behavioral responses toward such marketing-communication strategies as product placement on YouTube video-game streaming, and/or collect sampled respondent data from other areas beyond Bangkok to observe their similarities and contrasts.

Newer studies to explore more into the game-streamers' viewpoints and those of their followers, such as the ethical/moral mindsets of game-streamers or the game-streamers' attitudes toward their subscribers and/or casual viewers. Moreover, the gender gaps among male, female, and LGBTQ viewers along with the impacts of such gaps on gender-based behavior regarding game-casting can be an interesting research topic for future studies.

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