International Conference on Sustainable Economics, Management, and Accounting (ICSEMA 2025)
Proceedings
Vol. 02 Year 2026, 326 – 338
ISSN: 3109-3337

HOW GEN Z RESPONDS TO DIGITAL VIDEO ADVERTISING: AN EXPERIMENTAL BIOMETRIC STUDY

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Article Information: Received: June, 25 2026, **Published: August, 1 2026**

Abstract

Digital marketing is currently facing an existential attention crisis, especially among Generation Z in Indonesia, who have a very strict information selection threshold with an average tolerance of only 9.5 seconds. This research provides a solution to address this anxiety through a biometric approach to dissect consumer unconscious processing that is often missed by traditional research. Using the Stimulus-Organism-Response (SOR) theoretical framework, this research integrates webcam eye tracking technology to map visual focus and wearable device sensors to monitor subjects' heart rate fluctuations in realtime This research is a pilot study with an exploratory qualitative descriptive approach involving 8 Generation Z participants who were exposed to instant food video advertisement stimuli. The analysis results show that high visual saliency elements in product texture successfully trigger the bottom-up attention mechanism Biometric data confirms the synchronization between intense visual fixation and a spike in heart rate (Beats Per Minute / BPM) which represents appetitive motivation. On the other hand, the phenomenon of decreased heart rate was found in certain participants, which indicates cognitive engagement or deep concentration in validating product attributes. Despite technical challenges in the form of motion artifacts in optical sensors, this data integration provides a more honest and authentic picture of consumer behavior. These findings confirm that a strong visual impression in the first millisecond is key to breaking through Generation Z's skepticism filter and triggering purchase intention

Keywords: Digital Video Advertising, Gen Z, Biometric Study, Emotional Arousal, Purchase Intention

INTRODUCTION

The digital marketing landscape currently faces existential challenges, particularly in efforts to win the attention of Generation Z in Indonesia, which has very unique characteristics as a digital native group (Hassoun et al., 2023). Although the internet has reached a large portion of the population, marketers face the harsh reality that conventional video advertising strategies are often considered mere cognitive distractions that trigger instant rejection. The main problem lies in a very strong attention crisis. Generation Z has very strict selection standards and only allows an average of 9.5 seconds before they decide to press the skip button or consciously look away visually from the ad. This ad avoidance phenomenon is confirmed by Belanche et al (2020), who stated that the effectiveness of digital advertising is highly dependent on the content's ability to build emotional intensity in the first few seconds. This figure indicates a much higher level of intolerance compared to Generation Y, which still has a tolerance of around 10.9 seconds, or Generation X with 12.6 seconds, thus creating an urgency for marketers to understand what happens in these crucial seconds (Southgate et al. 2017). On the other hand, traditional market research methods such as questionnaires are starting to lose their relevance because they often fail to capture honest and spontaneous emotional responses within a limited time window.

Based on these concerns, this study attempts to provide a more precise solution through a biometric approach, integrating webcam eye-tracking technology to map visual focus and wearable device sensors to monitor subjects' heart rate fluctuations in real time. This approach

aligns with the view of Duerrschmid et al. (2021), who assert that the use of biometric devices can dissect unconscious processing, or consumers' subconscious processes, that are undetectable through conventional questionnaires. The goal is to dissect what actually occurs behind consumers' consciousness, whether a visual stimulus truly triggers emotional engagement in that brief duration or is simply ignored. By analyzing this data, a more accurate creative formula can be determined to build purchasing interest without being trapped by the research subject's memory bias. As in the Stimulus - Organism - Response (SOR) theory, this explains that stimuli from the external environment (Stimulus) do not immediately trigger action. These stimuli are first processed through the individual's internal state (Organism), both from an affective and cognitive perspective, before finally producing a specific behavior (Response). Kexin et al. (2023) emphasized that in the digital ecosystem, emotional responses (Organism) act as crucial mediators that determine whether a marketing stimulus will be ignored or continue to produce purchase intention. In the context of ever-evolving digital marketing, the application of the SOR framework is crucial for understanding how various sensory and informative elements in video advertisements act as stimulants. The use of webcam eye tracking and wearable devices in this study was chosen to capture the subjects' responses in a natural environment, providing a more authentic picture of consumer behavior than research conducted in a laboratory environment.

LITERATURE REVIEW

Stimulus – Organism – Response (SOR) Model

This study uses the Stimulus - Organism - Response (SOR) theoretical framework first proposed by Mehrabian and Russel (1974). This model is an important concept in environmental psychology and consumer behavior, which views human behavior not as a separate spontaneous response, but rather as the result of a complex linear process. Fundamentally, this theory explains that stimuli from the external environment (Stimulus) do not immediately trigger action. These stimuli are first processed through the individual's internal state (Organism), both from the affective and cognitive aspects, before finally producing a certain behavior (Response). In the context of ever-evolving digital marketing, the application of the SOR framework is crucial for understanding how various sensory and informative elements in video advertisements act as stimulants. According Caratu et al. (2023), elements such as visuals, audio, and narrative in advertisements have the ability to influence the biological processes and psychological state of the audience. This internal influence will determine whether the audience will respond positively, such as purchasing interest, or negatively to the promoted product.

Stimulus (S): Digital Video Advertising

A stimulus is defined in the SOR model as an external trigger originating from the digital environment that has the ability to interrupt an individual's internal state (Eroglu et al. 2001). Digital Video Advertising is the first stimulus in this study due to its ability to present more complex information than other digital formats. Unlike static media that only rely on a single visual element, modern video advertising has a high level of media richness because it combines dynamic audiovisual elements, narrative storytelling, and the use of aesthetic colors simultaneously (Li & Huang 2020). The combination of these multimedia elements creates an immersive experience, which according to recent research can increase sensory engagement more effectively than traditional advertising formats (Krisna et al 2016). This video-based stimulus is strategically designed to address the behavioral challenges of Generation Z, who have unique media consumption patterns as digital natives. This is stated in research (Implications & Southgate, 2017) that Generation Z shows a short interest in an advertisement as seen from the short duration they watch the advertisement before pressing the skip button, which is only about 9.5 seconds. In my observation, Digital Video Advertising is not just an information medium, but rather a "visual interruption" because they must be able to capture visual attention from the first millisecond to penetrate the filter of skepticism of Generation Z (Bikowski, 2025). The integration of creative

elements in videos aims to design cognitive and affective mechanisms that are the main foundation for triggering behavioral responses in a competitive digital ecosystem (Caratu et al 2023) Therefore, measuring sensory engagement in such a short duration requires biometric instruments capable of capturing biological responses in real time.

Organism (O): Gen Z Biometric Response (Visual attention and Emotional Arousal)

In decision-making, attention is the primary filter before consumers process advertisements. According to Caratu et al. (2023), there are two types of attention: high attention, when consumers consciously and actively focus on a particular object, and low attention, where information is absorbed passively and automatically. Although often subconscious, this low attention still has a strong influence on their perception in the long term. The concepts of high and low attention are closely related, but there are still differences between top-down and bottom-up attention mechanisms, which act as drivers of individuals towards a state of high attention. In the world of advertising, achieving a high level of attention is the main target because attention is essentially a series of cognitive operations that function to select relevant information while filtering out distractions from a complex visual environment (Kastner, McMains & Beck, 2009).

This mechanism is highly flexible, allowing focus to be directed to specific areas, specific features, or even entire objects. Furthermore, attention is not solely driven by logical reasoning but often emerges as an automatic, instinctive and emotional reaction to environmental stimuli. Therefore, in this study, combining eye tracking data with emotional indices is crucial for capturing the subject's complete response (Schupp et al. 2007). In this context, observational methods can be used to measure how often (fixations) and how long (fixation duration) individuals process information in a given environment using non-invasive eye tracking techniques, which highlight areas receiving the highest gaze intensity. This technique provides a wealth of data, both qualitative (such as heatmaps, where color intensity represents the duration and number of fixations, and gaze plots, which show the subject's eye scan path sequentially) and quantitative (the number or duration of fixations). Eye tracking allows for the measurement of visual effectiveness and information dominance across a wide range of media, from websites and product labels to supermarket shelf layouts (Cherubino et al. 2017). In the digital realm, this tool is highly relied upon for user interface testing and packaging evaluation to ensure optimal brand visibility and product attributes. Furthermore, eye tracking is also widely applied in advertising studies, analyzing the effectiveness of product placement on entertainment platforms such as film, television, and video games (Boermal et al, 2015; Lee & Faber, 2007), and monitoring direct consumer responses in physical environments such as stores and exhibitions. Attention is a key aspect of marketing to attract users or consumers and encourage them to act (choose a product, visit a web page, etc.) as described in one of the first models developed on selective attention (Raymond, Fenske & Tavassoli, 2003).

In addition to the dimensions of attention and visual observation, emotional aspects are drivers that direct consumer preferences in the decision-making mechanism up to the purchasing stage (Taylor, 2002). In line with this, Isaac and Budryte Ausiejiene (2015) emphasize that emotions are affective states characterized by intense feelings and closely related to specific response behaviors. From a neuromarketing and biometric perspective, these emotions are not only viewed as mental phenomena, but can be measured objectively through monitoring physiological signals such as heart rate. These heart rate fluctuations are the main indicator of emotional arousal, namely the level of system activation that reflects the intensity of the subject's emotional response when exposed to digital advertising stimuli. This is in line with findings (Bradley et al., 2001) which state that the arousal dimension has been shown to significantly influence an individual's memory and attention. In a digital ecosystem dominated by short-form advertisements, emotional arousal serves as a primary catalyst that maintains visual attention.

Emotional arousal was measured objectively through physiological signal monitoring using Photoplethysmography (PPG) sensor technology integrated into a wearable device. This method was chosen because of its non-invasive nature, allowing researchers to capture blood flow volume

without disrupting the subject's comfort while viewing advertisements (Moscato et al. 2022). When subjects were exposed to digital advertising stimuli, each recorded heartbeat represented autonomic nervous system activity closely related to the level of emotional activation. The use of physiological signals from wearable devices to recognize emotional arousal has been validated as an accurate method for capturing a person's affective state in real time (Moscato et al. 2022). The fluctuations in data generated by the PPG sensor, expressed in beats per minute (BPM), were then chronologically matched with data from the eye-tracking webcam. Synchronization between the two biometric data sets aimed to identify through data triangulation whether the visual focus areas recorded in the heatmap actually triggered a significant emotional response. Thus, researchers can draw deeper conclusions regarding the relationship between visual attention and Gen Z's emotional engagement with advertising content, especially in capturing advertising messages in a very short duration.

Response (R): Purchase Intention

The final stage in the SOR model is Response, which is the result of behavior or the final decision of an individual as a consequence of the internal process (Organism) to environmental stimuli (Stimulus). In this study, the response measured is purchase intention, which is defined as a consumer's conscious tendency and plan to try or purchase a product in the future after being exposed to advertising information (Caratu et al 2023). Purchase intention is considered the most accurate predictor for predicting actual purchasing behavior in a competitive digital ecosystem.

The relationship between biometric responses and purchase intention is a major focus because Gen Z tends to make decisions based on quick emotional connections. (Deng & Gu, 2020) explain that the connection between how the eyes search for information and how the body physically responds is not just a reflex movement, but a process that deeply shapes the audience's emotional experience, ultimately giving rise to behavioral intentions. This aligns with the findings of Mikalef et al. (2023) who assert that eye tracking data is actually a window to predict the purchasing decision-making process on digital platforms very strongly. Ultimately, as emphasized by Caratu et al (2023), the sensory engagement recorded through biometric data provides far more honest and accurate evidence regarding purchase intention.

RESEARCH METHODS

This research is a pilot study using exploratory qualitative methods with a real experimental approach based on the Stimulus - Organism - Response (SOR) model to understand how stimuli contained in instant food video advertisements affect physiological responses and consumer behavioral tendencies. The SOR model explains that stimuli originating from the external environment can affect the internal conditions of individuals (organisms), which then produce certain behavioral responses. In the context of digital advertising, elements in video advertisements such as product visualization, color composition, background music, storyline, and food presentation act as stimuli that have the potential to influence consumer perception, attention, and level of interest in the advertised product (Eroglu et al 2001).

The sample of this study consisted of digital consumers who actively access and watch video advertising content through digital media. Judgmentary sampling technique was used to select participants who were considered to have experience and familiarity with digital advertising content. A total of 8 participants representing Generation Z were involved in this experiment, considering that both generational groups are active users of digital media and have a high level of exposure to video-based advertising content. This study chose the "Indomie TAKOYAKI" advertisement as the experimental material because it fits the characteristics of Gen Z who are interested in products that offer attractive visuals and new experiences. This triggers a very high curiosity.

Data collection was conducted through an experimental video advertisement screening session combined with in-depth interviews. In the experiment, participants were asked to watch

approximately 30 seconds of instant food advertisements featuring different visual characteristics and creative approaches. During the video screening, participants' physiological and visual responses were recorded to identify their level of attention and interest in the displayed advertising stimuli.

This study used two technological instruments to measure participants' biometric responses. Eye-tracking data was collected using Gaze Recorder software, which is capable of recording eye movement patterns, fixation points, and levels of visual attention to specific elements appearing in advertising videos. Eye-tracking technology has been widely used in consumer behavior research to understand how individuals process visual marketing stimuli and allocate attention to marketing communication messages (Wedel & Pieters, 2008). Additionally, heart rate data was measured using a wearable device. smartwatch An AppleWatch equipped with a photoplethysmography (PPG) sensor monitors changes in physiological arousal during participants' exposure to video advertising stimuli. Heart rate measurement is a common approach in neuromarketing research to identify individuals' levels of emotional engagement and cognitive responses to marketing stimuli (Venkatraman et al., 2015).

The research data was analyzed using a combination of qualitative interpretation and biometric observation. Eye tracking data Webcam data was analyzed to identify visual attention patterns and the visual areas that most attracted participants' attention during the advertisement. Meanwhile, heart rate data was analyzed to observe changes in physiological arousal that occurred during the advertisement stimulus exposure process. The interview results were then analyzed using NVIVO 12 software through a systematic descriptive approach. This process began with transforming the interview results into digital transcripts, which were then uploaded into the NVIVO system for centralized management and in-depth data coding. Each participant's statement was sorted and grouped into specific categories. A content exploration process was then carried out to find the relationship between frequently occurring word patterns and the emotional responses recorded in the biometric data. The final stage of analysis involved visualizing the relationships between categories, which aimed to describe and interpret participants' perceptions, levels of interest, and experiences after watching the video advertisement. This combination of biometric analysis and a qualitative approach enabled the study to provide initial insight into how visual stimuli in instant food video advertisements can stimulate consumer attention, emotional engagement, and interest responses.

RESULTS AND DISCUSSION

This section presents the main findings of a biometric experiment conducted to evaluate Generation Z's visual response to digital video advertising. The main focus of the analysis lies in how visual elements in the advertisement are able to attract audience attention spontaneously and emotionally. Data were analyzed using eye-tracking webcam technology and wearable devices to map participants' gaze patterns during the duration of the advertisement. And wearable devices to measure heart rate. The scan results were visualized in the form of a heatmap and heart rate, which represents the intensity of visual attention based on the duration and frequency of eye fixations on specific areas within the image frame. Heart rate is used to present the results of emotional spikes in heart rate. The following is a visualization of the heatmap and heart rate of 8 participants, showing the distribution of their attention to product elements in the advertisement and consumer emotional spikes:

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Figure 1. Visualization of Product Heat Map Results

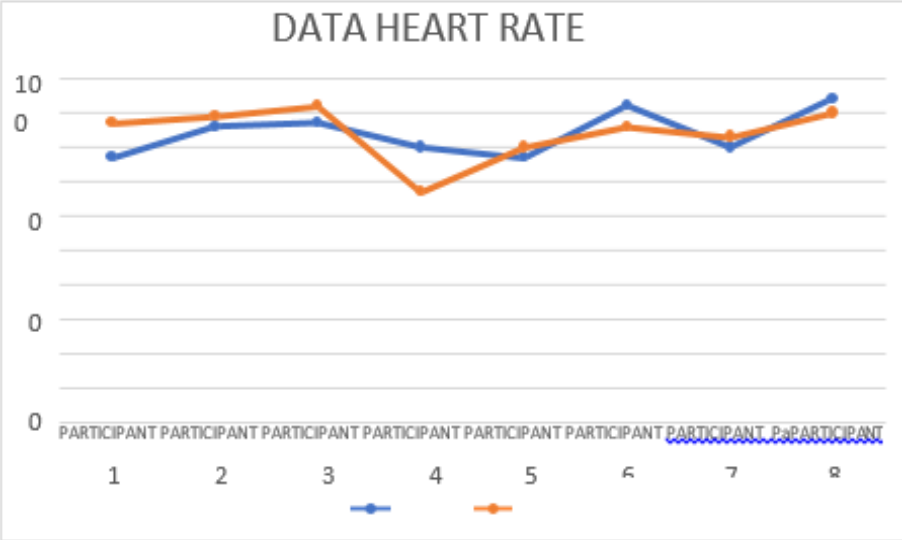


Figure 2. Heart Rate Data Graph

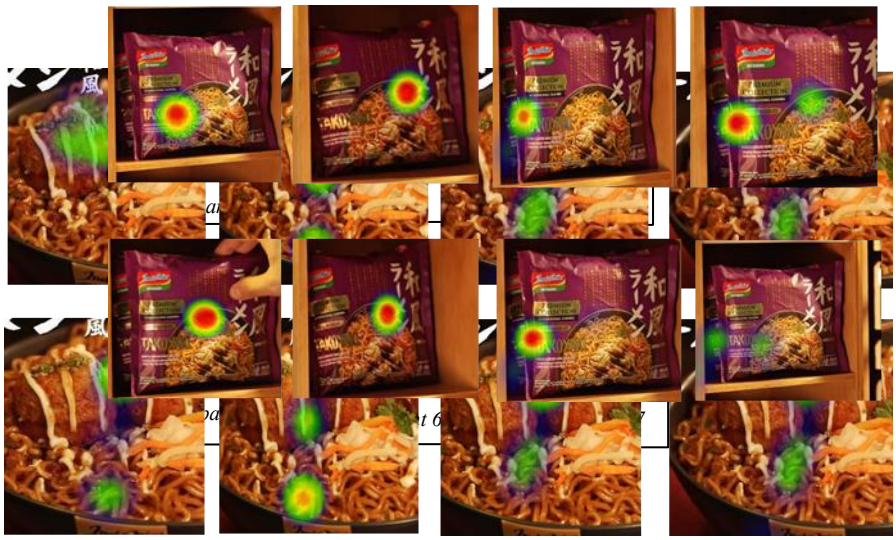


Figure 3. Visualization of Packaging Heat Map Results

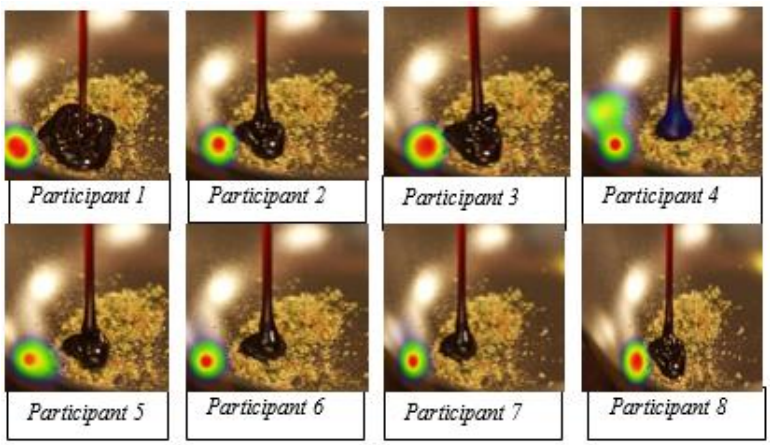


Figure 4. Visualization of Heat Map Results Presentation

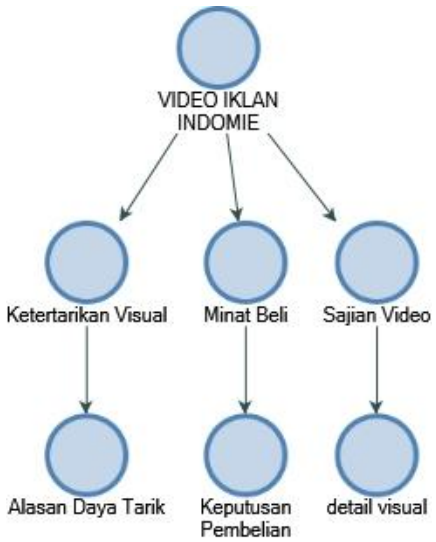


Figure 5. Project Map Results from NVIVO12

Data collection was conducted in a single, simultaneous experimental session, which included (1) participant eye tracking and (2) participant heart rate measurements based on samples from the Indomie Takoyaki advertisement. The data obtained through this biometric experiment were then converted into a heatmap visualization. This qualitative approach was used to precisely map the distribution of visual attention based on the "SOR" model. In accordance with the identification of in-depth observations, data visualization in the form of a heatmap provides a highly precise graphical representation of the distribution of visual attention of 8 participants towards the Indomie Takoyaki advertisement. From a Biomarketing perspective, the color mapping in this heatmap is not merely an aesthetic representation, but rather reflects an Implicit Visual Response. This is closely related to the Marketing Stimuli theory where physical attributes of an advertisement content such as color saturation, visual contrast, and the uniqueness of the product's shape automatically trigger a bottom-up-attention mechanism in the consumer's nervous system (Wedel & Pieters, 2008). This process occurs in milliseconds, where the human eye instinctively searches for the most biologically relevant elements before the brain performs a conscious cognitive evaluation. Further exploratory analysis shows the dominance of a consistently deep and centralized red color, especially for participants 2, 5, and 7 as shown in Figure 1. This phenomenon

indicates a very significant Fixation Duration or gaze duration on the takoyaki topping area and noodle texture presented through a close-up shot technique. The high fixation on the Indomie Takoyaki seasoning texture is in line with the ' Visual Hunger' trend described in the research of Riswanto et al (2025), where visual elements that highlight sensory details are able to trigger an instant biological hunger response in digital audiences. In biometric studies, this red dot confirms an extraordinarily high level of Visual Salience that is able to cut off the flow of other information around the advertisement. (Milosavljevic et al. 2012) emphasized that Visual Salience here forces the eye to fixate faster under time pressure, which in this context is very relevant to the behavior of Gen Z who only watch advertisements for short durations. This proves that the Indomie Takoyaki advertisement has a salience strong enough to win the competition for visual attention in an information-dense digital environment. Psychologically, the concentration of gaze on the visual center of the food informs the effectiveness of the Visual Merchandising strategy in digital content aimed at creating Product Vividness. According to Steinmann et al (2014), vividness in digital advertising refers to sensory representations that are able to arouse the imagination of consumers. Video advertisements that display takoyaki visuals in close-up and dynamic provide an experience that helps participants visualize the taste and texture of the product in real life. The integration between visual salience that catches the eye and product vividness that arouses the sense of taste is a trigger for Emotional Arousal. This is in line with the spike in BPM on the main object, in the study of Bradley et al (2001) which is categorized as Appetitive Motivation, an indicator of the success of advertising stimuli in arousing Product Interest that significantly encourages the emergence of Purchase Intention in the audience.

Participants 4 and 8 in Figure 1 show a broader green distribution pattern without a single heatmap. This finding explores a more extensive Visual Scanning strategy, where participants tend to cognitively process detailed product attribute elements and contextual elements. This is in line with the concept of Selective Attention, where there are differences in information processing styles among Gen Z consumers, some are very attached to aesthetic appeal (affective), while others require a more complete information context (cognitive) before finally focusing on the main object of the advertisement. A deeper analysis of the decrease in BPM from 80 to 67 in participant 4 as in Figure 2, this phase indicates Cognitive Engagement or deep involvement. This phenomenon of decreased heart rate does not indicate a lack of interest, but rather the success of Brand Communication in building Trust. When participants focus on absorbing information, detailed product attributes and contextual elements as evidenced by a decrease in BPM as a form of concentration, a brand validation process occurs that strengthens Brand Recall. This proves that the Indomie Takoyaki advertisement has a dual marketing appeal which according to (Lee & Hong, 2016) is able to arouse the audience's appetite while providing crucial rational beliefs to mature Purchase Intention in more analytical consumer segments.

Further analysis of the heat map visualization clearly shows how product design elements and brand identity work simultaneously in guiding consumer visual perception. Participant 1 in Figure 1 shows a very strong fixation on the Indomie logo and the right topping area, confirming that the power of a top -of-mind brand like Indomie is able to attract instant attention even when placed in a peripheral area. This is in line with research by kleih et al (2021) which states that widely recognized branding elements will accelerate the product identification process through visual saliency. Participant 3 in Figure 1 displays a fixation pattern at the center of gravity of the plate, indicating that the food styling strategy that emphasizes the volume of toppings successfully creates 'visual desire' (visual hunger). This is explained through the findings of Li et al (2022) which states that balanced and symmetrical visual composition in food presentation significantly increases positive perceptions and aesthetic appeal for consumers. This is also reinforced by a spike in heart rate with BPM experiencing a drastic increase from 87 to 92 BPM where this increase in heart rate is in line with intense visual fixation which according to kleih et al (2021) and Li et al (2022) is a manifestation of Brand Excitement as well as the effect of symmetry that increases biological aesthetic appeal (Appetitive Motivation). On the other hand, Participant 6 as in figure 1 who actively

explores the noodle area at the bottom of the plate provides clear evidence regarding the impact of visual aesthetics on taste expectations, as stated by Janjic et al (2023) that consumers tend to do a deep scan on the main texture of food to validate the perception of deliciousness (tasty meal) before purchasing intention arises. The difference in patterns between the focus on branding in figure 1 by Participant 1, the focus on compositional balance by Participant 3, and the focus on product texture by Participant 6 collectively confirms that contrasting topping elements, symmetrical plate arrangement, and visual clarity of noodle texture are the most crucial Areas of Interest (AOI) in creating an effective marketing strategy. Overall, the visual success of this advertisement lies in its ability to direct consumers' eyes to the functional elements of the food without losing the strong identity of the Indomie brand itself, which ultimately stimulates the visual appetite of the audience as a whole.

The analysis of Figure 2 shows that the eight heat maps of Gen Z participants demonstrate that visual attention to digital advertising is not randomly distributed. Visual saliency elements and packaging design are the main determining factors. The majority of subjects, especially participants 1, 4, 5, and 7 in Figure 3, showed strong fixations on the central area containing the "TAKOYAKI" typography and the product's texture visuals. Interestingly, this visual fixation was accompanied by a significant increase in BPM. In Figure 2, participant 1's BPM jumped from 77 to 87, indicating an emotional spike due to bottom-up processing, where contrasting visual features can capture spontaneous attention even before conscious purchase intention is formed (Belanche et al 2017). In contrast, the exploratory scanning pattern of participant 3 in Figure 3 shows a more diffuse fixation intensity. This difference indicates the influence of top-down processing, where internal factors such as brand familiarity contribute to deepening visual details. This behavior indicates cognitive efficiency, where subjects simply performed a quick scan because their memory of the brand was already strong (Huddleston, 2015). This is reinforced by the increase in BPM from 87 to 92, where an emotional spike occurred during the quick scan. Participants 2 and 6 in Figure 3 had an intense fixation on the product illustration, which in modern digital marketing strategies and packaging design functions as a visual hook to create instant sensory appeal. This phenomenon aligns with the findings of Husic-Mehmedovic et al. (2017) who stated that consumers tend to pay longer visual attention to graphic elements that evoke emotions than textual information, especially in the Fast-Moving Consumer Foods (FMCG) product category. On the other hand, the quick scanning pattern of Participant 8 in Figure 3 indicates low visual saliency, which, according to a study (Gidlöf et al., 2017) on retail shopping behavior, often occurs due to cognitive load or a lack of distinguishing elements capable of interrupting consumers' visual search process. Managerially, the dominance of fixation on the right side of the packaging implies that the placement of key visual elements should be in areas of high salience to maximize the effectiveness of brand communication on retail shelves.

Analysis of Figure 4 reveals that the appeal of the Indomie Takoyaki advertisement goes beyond mere visual aesthetics. The Takoyaki advertisement successfully penetrates Generation Z's biological response through a mechanism that occurs within milliseconds. Based on the SOR, it was found that Participants 1, 3, 4, and 8 in Figure 4, with visuals presented through high-quality close-up technique, were not only processed as advertisements but also as real physical triggers. The data results show perfect synchronization between the heat map on the texture of the sharp, shiny sauce and a significant spike in heart rate (BPM) from each participant. This phenomenon validates the occurrence of Emotional Arousal triggered by Appetitive Motivation, where the subject's autonomic nervous system responds to hunger signals automatically even before the participant consciously evaluates the advertisement (Deng & Gu 2020). This is reinforced by participants 8 and 4 in Figure 4 who consistently show fixation on the advertisement's visual quality and vibrant colors as one of the main factors that stop their fastscrolling behavior on social media. Participants 2 and 5 in Figure 4 show a different pattern, although their heart rate tends to be stable, they show high purchasing interest. In this case, sharp contrasting visuals successfully build Brand Trust and perception of product quality.

This was accompanied by a decrease in heart rate in participants 4 and 7 with a difference of 2-4 BPM, it was seen that the participants were processing information on the visuals of the advertisement as in Figure 2. It was explained that the decrease in heart rate in this context did not reflect low interest, but rather an attentive condition. Immobility, which is increased cognitive focus in understanding the information presented. This phenomenon aligns with the theory of (Potter & Bolls, 2012) which explains that a slowed heart rate is an indicator of deeper cognitive engagement during the message elaboration process. Meanwhile, participant 5 in Figure 4, despite feeling confused by the fast-paced ad flow, still managed to secure purchase intention. He felt the quality of what was seen on the screen was very convincing. This phenomenon proves that for Generation Z, who have a short attention span, a strong visual impression in the first millisecond is the main key to breaking through their skepticism filter (Bikowski, 2025) . This is reinforced by the increase in heart rate. The integration between what is captured by the eyes, emotional arousal recorded through the heart, and verbal testimony from interviews creates a solid data triangulation. This finding is reinforced by Khubchandani & Raman (2025) who explored the cognitive behavior of Generation Z through eye tracking technology. The study shows that for Gen Z, visual attention is not just the process of seeing, but a key gateway in digital decision-making. The synchronization between long fixation duration and heart rate spikes (BPM) in this study proves that visual stimulation that successfully captures attention within the first seconds significantly increases the probability of purchase intention. Overall, these results provide much more honest and in-depth evidence that sensory engagement is the most accurate predictor for mapping consumer purchase intentions amidst increasingly dense digital content competition (Moreira et al 2017).

Based on the mapping results using NVivo, Indomie's video advertisement acts as the main stimulus that influences audience response through three main dimensions, namely visual interest, purchase intention, and video presentation. First, in the visual interest dimension, it was found that the visual elements in the advertisement were able to attract the audience's attention significantly. This is reflected in the emergence of a derived node in the form of reasons for attraction, which indicates that aspects such as color, product appearance, and visual aesthetics are important factors in building initial attraction to the advertisement. Second, the purchase intention dimension shows that exposure to the video advertisement does not only stop at the attention stage, but also encourages the desire to buy. This is reinforced by the derived node of the purchase decision, which indicates that the advertisement has a contribution in influencing the consumer's cognitive process up to the decision-making stage.

Third, in the dimensions of the video presentation the analysis revealed that the way content is delivered, including storyline, filming techniques, and information presentation, plays a role in shaping audience perception. This is demonstrated by the visual detail child node, which confirms that small elements in the video (such as expressions, camera angles, and product focus) help reinforce the message being conveyed. Overall, the results of this analysis indicate that the effectiveness of video advertising is not determined by a single aspect, but rather a combination of visual strength, presentation quality, and its ability to influence consumer interest and purchasing decisions. Thus, it can be concluded that Indomie video advertisements have a comprehensive influence on audience responses, both affectively (interest), cognitively (assessment), and conatively (purchasing actions). Data integration between visual attention distribution, heart rate fluctuations, and mapped cognitive flows proves that the effectiveness of this advertisement begins with Visual Interest triggered by Visual Saliency elements in the topping area and noodle texture. This interest is then deepened through Video Presentation with dynamic close-up techniques that highlight visual details so as to evoke Emotional Arousal and Appetitive Motivation recorded through a spike in participants' BPM. This process culminates in the emergence of strong Purchase Intention, which shows that the synergy between Product Vividness and Brand Trust formed during the visual scanning process is a major driver for Gen Z consumers in making Purchase Decisions in the digital environment.

CONCLUSION

This study aims to analyze how Generation Z responds to digital video advertising through a biometric approach with the SOR framework. The results show that stimuli in the form of visual elements in video advertisements, especially visual saliency, product vividness, and close-up techniques, have a significant ability to attract visual attention and trigger emotional arousal in a very short time. These findings confirm that cognitive and affective processes that occur at the organism stage play a major mediator in forming the final response in the form of purchase intention. The integration of eye tracking and heart rate data shows a consistent relationship between the intensity of visual fixation, increased physiological activity, and consumer behavioral tendencies, thus strengthening the validity of the SOR model in the context of modern digital marketing.

The practical implications of this research indicate that the effectiveness of digital video advertising in the Generation Z segment is largely determined by the content's ability to create strong visual appeal from the first second. Therefore, industry players, particularly in the Fast-Moving Consumer Goods (FMCG) sector, are advised to optimize key visual elements such as product texture, contrasting colors, and symmetrical visual composition to increase visual saliency and emotional engagement. Furthermore, the integration of visual aesthetic strategies and strong brand identity has been proven to build brand trust and drive purchase intention more effectively. A biometric-based approach can also be a more objective alternative market research method compared to conventional approaches, especially in understanding consumers' implicit responses in the distraction-filled digital era.

However, this study has several limitations. First, the use of non-laboratory devices such as webcams and wearable devices can potentially generate data noise due to external factors such as lighting and participant movement, thus suboptimal biometric measurement accuracy. Second, the relatively small sample size and its limitation to Generation Z in specific regions limit the generalizability of the study's findings. Third, the exploratory qualitative research design is not yet capable of statistically testing causal relationships between variables in the SOR model. Based on these limitations, further research is recommended to use laboratory-based biometric devices with a higher level of precision and involve a larger and more demographically diverse sample to increase external validity. Furthermore, future research can develop a quantitative approach with a structural analysis model to examine the causal relationship between visual attention, emotional arousal, and purchase intention more comprehensively. Developing other variables such as brand familiarity, cognitive load, and digital behavior patterns is also important to enrich the understanding of Generation Z consumer behavior in responding to digital advertising on various platforms.

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