


# DESCRIPTION OF SEGMENTATION TYPES ON E-COMMERCE PLATFORMS IN CITIES IN COLOMBIA AND ISRAEL

## DESCRIPCIÓN DE TIPOS DE SEGMENTACIÓN EN PLATAFORMAS DE COMERCIO ELECTRÓNICO EN CIUDADES DE COLOMBIA E ISRAEL

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## ABSTRACT

**Introduction:** Digital advertising has evolved with the rise of Industry 5.0, reshaping promotional strategies and transforming consumer perception on e-commerce platforms. **Objective:** This study aimed to analyze how emerging technologies and retargeting influence market segmentation among users of digital platforms in Barranquilla (Colombia) and Tel Aviv (Israel). **Methodology:** A descriptive methodology within the post-positivist paradigm was employed, using dichotomous surveys applied to 53 digital consumers. The instrument's reliability was tested using the KR-20 index, which yielded a moderate reliability score of 0.51. **Results:** The results indicate a strong presence of strategies such as geographic segmentation (4.15), retargeting (4.38), and behavioral segmentation (3.77), while psychographic segmentation was moderately used (2.55). **Conclusions:** The study concludes that the strategic use of retargeting and segmentation enables brands to achieve greater impact on consumer experience. Furthermore, the research points to a shift toward advertising formats powered by artificial intelligence and immersive technologies.

**Keywords:** Advertising, e-commerce, marketing; mass media.

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## RESUMEN

**Introducción:** La publicidad digital ha evolucionado con la llegada de la Industria 5.0, redefiniendo las estrategias promocionales y transformando la percepción del consumidor en plataformas de comercio electrónico. **Objetivo:** Este estudio tuvo como objetivo describir de tipos de segmentación en plataformas de comercio electrónico en ciudades de Colombia e Israel. **Metodología:** Se adoptó una metodología descriptiva dentro del paradigma postpositivista, utilizando encuestas dicotómicas aplicadas a 53 consumidores digitales. El instrumento fue validado mediante el índice KR-20, obteniendo una fiabilidad moderada (0,51). **Resultados:** Los resultados muestran una alta prevalencia de estrategias como la segmentación geográfica (4,15), el retargeting (4,38) y la segmentación conductual (3,77), mientras que la segmentación psicográfica fue moderadamente adoptada (2,55). **Conclusiones:** Se concluye que el uso estratégico del retargeting y la segmentación permite a las marcas generar mayor impacto en la experiencia del consumidor. Asimismo, se evidencia una transición hacia formatos publicitarios impulsados por inteligencia artificial y tecnologías inmersivas.

**Palabras clave:** Publicidad, comercio electrónico, Marketing; Medios de comunicación de masas<sup>1</sup>

## INTRODUCTION

Advertising is a driving force in the contemporary economy and a necessary means by which brands talk with their audience. Advertising is central in the promotion of services and products, changing constantly according to changing trends. Advertising, though, must change with the fast advancement of digital technologies as well as the increasing power of consumer behavior in how people interact with advertising and make buying decisions. The change in advertising has been so drastic that its future holds even more disruptive transformations. Understanding the novel technologies involved in the transformation to Industry 5.0 is necessary. Cognitive computing, through analyzing data based on logical associations similar to those made by the human brain, is central in this change. A component in this process is the adjustment of advertising tactics with changing consumer behavior, rooted in a number of theoretical constructs.

One of the primary ways in which advertising is adapting to these changes is through data analytics. As technology progresses, vast amounts of consumer behavior data are being gathered. Brands are leveraging this data to enhance understanding of their audiences Inclinations, and needs, thus facilitating the personalization of advertisements. Social media and mobile advertising have seen substantial growth, driven by the widespread use and accessibility of mobile devices. Since people spend a significant amount of time on social media, it has become a crucial space for targeted advertising.

The focus on sustainability and social responsibility has also shaped the evolution of advertising, as modern consumers increasingly value brands that demonstrate a commitment to sustainability and ethical practices.

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In response, advertising has shifted to highlight these values in its messaging (Preston, 2005). Additionally, native advertising has gained traction, with ads now integrated more seamlessly into content, offering consumers a more fluid and engaging experience (Hayes et al., 2022).

The capability of advertising to respond to changing consumer behavior is crucial for keeping up with its relevance and potency. With integration of behavioral and communications theories, advertising can be customized to address changing consumer demands, finally gaining tremendous impact in the marketplace (Lee & Cho, 2020).

Moreover, emerging technologies are propelling substantial transformations in advertising. Immersive mediums like Artificial Intelligence (AI) and Virtual Reality (VR) are being used by brands and advertisers in a bid to involve their audience in more innovative ways.

## THEORETICAL FRAMEWORK

In the current digital landscape, shaped by the rapid technological advancements of Industry 5.0, consumer segmentation has emerged as a strategic pillar for e-commerce platforms. Within this context, Ruiz, Barragán, and Hinojoza-Montañez (2023) emphasize the profound transformation of promotional approaches driven by new technologies, which significantly shape consumer perceptions and influence purchasing behavior. This phenomenon is particularly evident in cities such as Barranquilla, Colombia, and Tel Aviv, Israel, where the adoption of advanced tools such as retargeting and precision segmentation continues to increase.

The study conducted by Ruiz, Samper, Forero, Lara, and Morales (2025), focused on the health services sector, demonstrates the effectiveness of applying large-scale data analytics (big data) to customer segmentation through techniques such as Recency, Frequency, and Monetary value (RFM). This methodological approach proves highly applicable to e-commerce platforms, as it enables the identification of high-value, loyal, and occasional customer segments, thereby enhancing user experience and optimizing conversion processes.

In addition, Ruiz, Calderón, Venecia, Santodomingo, and Forero (2025) examine the bibliometric patterns of artificial intelligence in digital marketing, highlighting the growing relevance of tools such as chatbots, big data, and augmented reality. These technologies foster the development of personalized advertising through adaptive algorithms and voice recognition, expanding the boundaries of traditional segmentation and facilitating real-time customization based on user interests and behavior.

Furthermore, Ruiz, Molina, Castro, and Raby (2024) emphasize the role of big data as a driver of real-time business decision-making and underscore its application in interactive multimedia strategies. In the context

of e-commerce platforms in Colombia and Israel, this trend aligns with the strategic imperative to address the geographic, demographic, behavioral, and psychographic characteristics of digital consumers.

**Table 1.**  
*Advertising trend types in scient literature*

Advertising trend types	Authors	contributions
Advertising powered by artificial intelligence	(Sayoh, 2023)	Artificial intelligence in advertising is transforming how brands connect with their audience. AI-powered advertising allows for greater personalization, tailoring messages and offers to individuals based on their preferences and behaviors. Chatbots and virtual assistants play a crucial role in interacting with customers, offering instant responses and personalized services 24/7.
Augmented Reality and Immersive Advertising	(Sung, 2021)	Augmented reality offers new opportunities for immersive and experiential advertising. It enables ads to integrate more seamlessly into the consumer’s environment, allowing them to interact with products and services virtually before making a purchase decision. This AR-based approach enhances consumer engagement and creates memorable campaigns.
Voice-based advertising	(Zierau et al., 2023)	Voice-based advertising is an emerging trend due to the growth of voice assistants and smart speakers. Brands must adapt their strategies to communicate effectively in a voice-driven environment, allowing consumers to interact with and purchase products using voice commands.
Interactive ADS	(Kim, 2021; Li, 2019; Subawa, 2021; Rathore, 2023)	Interactive ads engage users by enabling participation within the ad itself, thus improving decision-making and enhancing retention of the advertising message. AI advancements have revolutionized advertising by enabling more precise segmentation, personalized messaging, and increased interaction, all driven by data analysis of consumer behavior.

**Note.** Own elaboration

### The market segmentation of the product with the use of retargeting

Market segmentation is a staple of advertising and marketing, in which a broad, diverse market is separated into small, homogeneous groups. Each segment represents a set of similar consumers, with shared needs and behaviors, thus enabling firms better focus their advertising in more precise, effective segments (Stidsen, 1975). By purposeful use of segmentation, firms can position their product, approaches, and communications more precisely in response to the specific needs of each segment, improving their efficiency, as well as their competitiveness in the marketplace (Brotspies & Weinstein, 2019).

Market segmentation has many benefits. First, it allows firms to better understand their clients, their distinct preferences, and requirements. By segmenting the market, firms are able to find new opportunities and niches in the market. In addition, segmentation enhances the efficiency of advertising and promotional efforts, as these programs could be tailored to meet the unique needs and desires of a segment. The directed strategy has a higher chance of generating loyalty and conversion (Armstrong et al., 2014).

Finally, market segmentation is a strategic tool that allows companies to understand their customers better and meet their needs more effectively. By segmenting the marketplace into distinct, well-defined groups, firms can create more targeted advertising strategies while gaining a competitive edge in today's increasingly diverse, complex business landscape.

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**Table 2.**  
*Process for identification of data collection to gather information about customers*

Segmentation types	Authors contributions	Contributions to literature
Demographic segmentation	(Permanasari et al., 2022).	Segments are divided based on demographic characteristics such as age, gender, income, education level, and occupation. These factors provide a solid foundation for initial segmentation.
Behaviorial segmentation	(Borg et al., 2021)	The market is divided based on consumer behaviors, including buying frequency, brand loyalty, and decision-making processes, offering insights into customer actions and preferences.
Psychographic segmentation	(Liu et al., 2019)	This segmentation focuses on grouping consumers according to their values, interests, personality, and lifestyle. It is essential for understanding customer motivations and creating persuasive advertising messages.
Geographic segmentation	(Griva et al., 2023)	Geographic segmentation considers the location of consumers, as preferences and needs often vary according to the place of residence, helping brands tailor offerings to specific regions.
Target segments	(Zatonatska et al., 2022)	Identifying the objectives of a brand or business is crucial for selecting the most relevant and promising segments for targeted marketing and managing business ventures efficiently.
Develop differentiated strategies	(Ferreira-Barbosa et al., 2023)	Creating specific marketing and advertising strategies for each target segment, while adjusting products, pricing, promotions, and distribution channels to meet the unique needs of each group.

**Note.** Own elaboration

## Retargeting

Market segmentation is a strategic mechanism through which enterprises can more accurately understand their clients through the segmentation of a large marketplace into more defined, unique groups. By adapting their marketing approaches to these distinct segments, firms can achieve a higher degree of competitiveness within a more diverse, complex marketplace.

Retargeting is a powerful tool in digital marketing that enhances conversion rates, improves customer retention, and optimizes campaign performance. This is achieved by focusing on audiences that have shown a certain degree of affinity toward the brand or its offerings (Mark et al., 2023). Retargeting is indispensable since it focuses on reaching users who have engaged with a product or service in the past. By delivering personalized ads to this audience, advertisers can remind them of their previous interest, which increases the likelihood of conversion. This strategy maximizes return on investment (ROI) and improves campaign effectiveness by focusing on individuals who are more likely to complete a purchase. Furthermore, retargeting presents several benefits in the context of online marketing (Desimpelaere et al., 2022).

One common use of retargeting is to remind users about abandoned shopping carts, encouraging them to complete their purchases. It also allows advertisers to display ads for products previously viewed by the user, reinforcing their interest and increasing the probability that they will return to the site to finalize the transaction. Additionally, retargeting can be applied to users who have performed specific actions on a website, such as downloading content or subscribing to a service. This helps encourage them to complete other actions, like registration or making a purchase.

Retargeting also facilitates the introduction of associated or upscale merchandise to customers with a history of purchases, helping to increase the average order value. Moreover, it supports the introduction of new products to repeat customers, thereby enhancing the likelihood of future purchases.

Another advantage of retargeting is the potential for brands to create tailored campaigns for user segments based on usage behavior and history within the website. This allows brands to promote sites, events, downloads, or other assets based on users who have already had an interaction with the brand. In addition, retargeting can also be employed to reconnect users who haven't been on the site in a while, reminding them of the brand through targeted ads

Within the digital marketing landscape retargeting helps close the knowledge gap on emerging advertising trends and tools, particularly those focused on consumer segmentation. When implemented effectively on online platforms, this strategy can significantly contribute to increased sales.

The research article was a production of the IDEA research group together with the research group of Tajar, working under the digital media research seedbed. It was within the scope of the Research Line in Entrepreneurship and Innovation, more specifically in the subline of research in the fields of market research, marketing mix, and research project design through the Digital Advertising Production program

of the Educational Corporation of the Coast, together with the Research in Business Studies and Territory-SIET seedbed. The research was most applicable in the field of Entrepreneurship and Innovation, specifically in its subfields of research in the market research, as well as in the marketing mix.

Thus, the overall purpose of this research is to examine advertising trends such as retargeting and new technology. The research objectives are a) To examine the use of advertising and its social impact, and b) To outline the methods of segmentation used based on the perception of e-commerce platform users in Colombian cities and cities in Israel.

## METHODOLOGY

This research is placed within the positivist paradigm, trying to grasp human behavior based on measurable data. Based in the scientific method, research adheres to the law of the three states of knowledge principles (Davidson, 1991). The research employed a descriptive research strategy, founded upon the attitudes of the consumers who use e-commerce websites. A sample of digital shoppers from the cities of Barranquilla in Colombia, and Tel Aviv in Israel, were used to gather data in relation to the effect of advertising trends such as retargeting as well as new technology.

The estimated user population for e-commerce platforms in 2022 was approximately 25,000, based on data from digital platform dispatches. To determine the ideal sample size, a probabilistic sampling method was employed with a confidence level ( $Z$ ) of 90% ( $Z$  value of 1.645), a population size ( $N$ ) of 25,000, and a margin of error of 10% (0.10). Using the formula for sample size calculation:

$$n = \frac{E^2 Z^2 P(1-P)}{N}$$

Where  $n$  is the sample size,  $E$  is the margin of error,  $Z$  is the  $Z$ -value, and  $p$  is the estimated proportion of the population, the initial calculation yielded a sample size of 422.43. After applying a finite population correction, the minimum sample size required was adjusted to 13 subjects. Despite the minimal sample size suggested, the final study sample consisted of 53 respondents from Barranquilla, Colombia, and Tel Aviv, Israel. A dichotomous questionnaire was employed for data collection, as it is known for its simplicity and high acceptance rate among respondents. The questionnaire utilized binary response options (Yes = 1; No = 2) to facilitate the analysis of responses. To minimize biases, the questionnaire was designed in a way that did not directly associate the survey with retargeting, ensuring more genuine responses from participants.

### Reliability

The instrument's dependability was tested through use of the Kuder-Richardson "KR-20" scale, a metric of internal consistency in dichotomous items. The use of the formula:

$$KR - 20 = \frac{k}{K-1} \left( \frac{\sum P_i Q_i}{Total\ Variance} \right)$$

Where  $k$  represents the number of items in the test, and  $P_i$  and  $Q_i$  represent the probabilities of a correct and incorrect response, respectively. The reliability analysis produced a KR-20 value of 0.51, indicating a moderate level of reliability according to the scale proposed by Hernández et al. (2012), which classifies values from 0 to 0.40 as low reliability, values between 0.40 and 0.60 as medium reliability, values between 0.60 and 0.80 as high reliability, and values from 0.80 to 1 as excellent reliability.

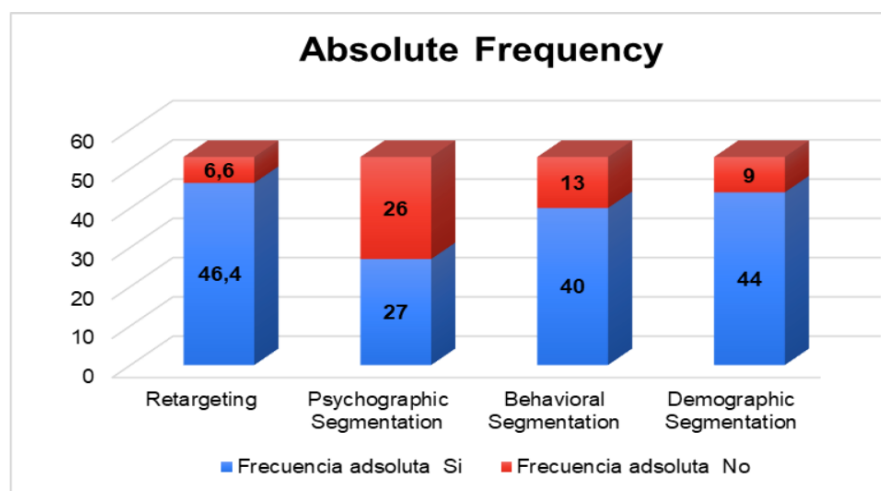
### Data Analysis

The data collected were analyzed using descriptive statistics to present a clear and structured overview of the findings. The responses were grouped and averaged to simplify the presentation and interpretation of the results. This analysis enables a better understanding of consumer perceptions regarding advertising trends, such as retargeting, across different geographic locations.

## RESULTS

An analysis was conducted based on the collected data, with the information organized and presented in a clear and systematic manner to enhance its accessibility for a diverse audience, both academic and non-academic. To achieve this, the data were aggregated, averaged, and processed to provide a more concise and structured presentation.

**Figure 1.**  
*Description of the market segmentation used according to the perception of users of e-commerce platforms in cities in Colombia and Israel.*

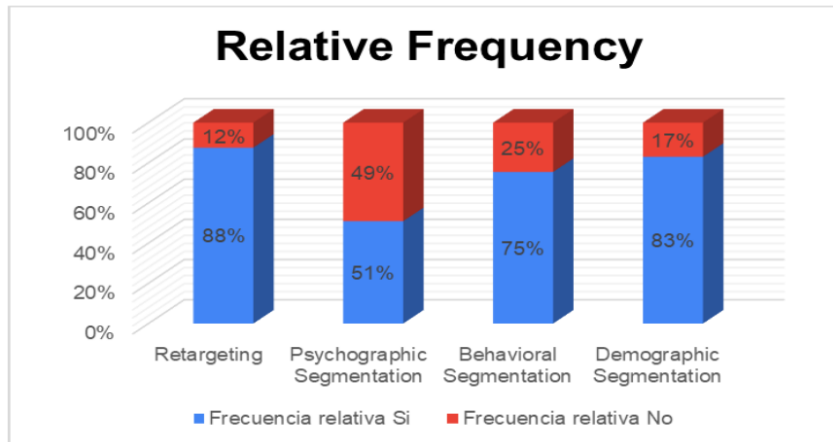


Source: Authors.

In the area of advertising, the data reflects the absolute frequency of responses, indicating whether certain strategies have been implemented. In the case of 'Retargeting', 46.4 respondents answered yes, while 6.6 indicated that they did not. Psychographic segmentation received 27 positive responses and 26 negative responses. Behavioral segmentation received 40 affirmative responses and 13 negative responses. Finally,

in the demographic segmentation, 44 people answered 'Yes' and 9 'No'. These data allow us to understand the use of different advertising techniques, showing the prevalence of each strategy in the group surveyed.

**Figure 2.**  
*Description of the relative frequency in the research*

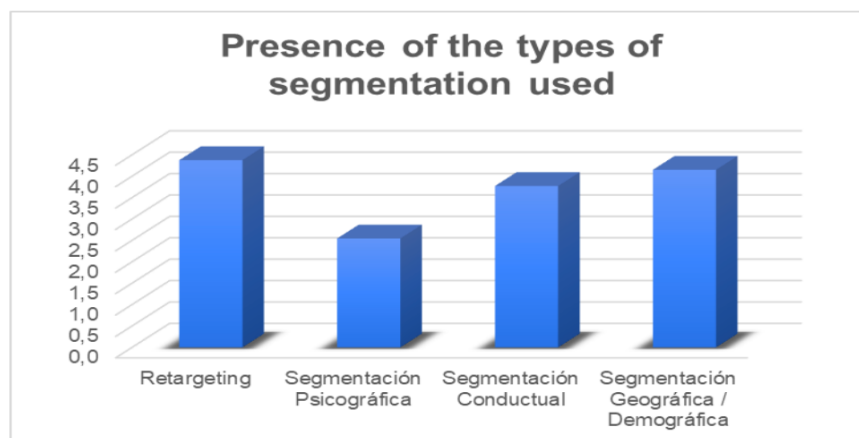


Source: Authors

In this data presentation, various indicators were analyzed, expressing the relative frequency of responses in terms of 'Yes' and 'No'. For 'Retargeting', the majority of respondents, 88%, answered in the affirmative, while 12% indicated the contrary. For psychographic segmentation, there was a more even distribution, with 51% positive and 49% negative responses. The behavioral segmentation showed a high rate of affirmative responses, reaching 75%, while 25% responded negatively. Similarly, the demographic segmentation showed 83% positive responses and 17% negative.

These results provide a clear picture of the prevailing perceptions or behaviors associated with each indicator. In line with the above, the presence of the different types of segmentation described is evident according to the scale of interpretation used, which is why the following table is presented.

**Figure 3.**  
*Presence of the types of segmentation used.*



Source: Authors

When analyzing different indicators that reflect its presence in each item, notable variances were identified. First, 'Retargeting' registered a presence score of 4.4, indicating a significant presence in the items evaluated. On the other hand, 'Psychographic Segmentation' scored 2.55, suggesting moderate representation compared to the other indicators. 'Behavioral Segmentation' showed a presence of 3.77, evidencing a considerable, but not predominant, influence on the items analyzed. Finally, 'Geographic/Demographic Segmentation' achieved a score of 4.15, reflecting a solid presence within the elements evaluated.

The results offer a comprehensive understanding of the relative significance of each indicator within the analyzed dataset. Notably, **Geographic/Demographic Segmentation** emerged as the most prominent factor, receiving a score of 4.15, thereby indicating its critical role in the market under investigation.

## DISCUSSION

Contextualizing the findings obtained from the literature review, it is essential to address the first objective: to understand the essence of advertising and how it impacts society. In this context, the exploration of new approaches to market segmentation in the context of the global transformation driven by Industry 4.0 takes on particular relevance. These segmentation strategies are being refined and optimized through the integration of digital transformations, as highlighted by Lang & Lang (2021). Their analysis highlights current trends in e-commerce, driven by the need to digitize organizations.

This evolution raises key questions, such as the nature of market segmentation in small and medium-sized enterprises (SMEs) in cities like Barranquilla, Colombia, and Tel Aviv, Israel. It is also essential to examine the current state of digital content in SMEs in these cities. These issues, derived from the literature reviewed, have great relevance in the economic development of a country. As such, conducting innovative research that delves into the practical applications of advertising and its impact on society presents itself as a promising avenue for advancement and long-term exploration.

## CONCLUSIONS

In today's context of advertising trends, the convergence between psychology, neuroscience and data analysis has ushered in a new era in the industry. This integration has a pronounced effect on societal aspects dynamics, particularly in influencing the market through the strategic use of information. The implications are considerable, as advertising has great power to influence the perception of products, influence purchasing decisions and consolidate itself as a key tool that requires responsible and ethical use for the benefit of society.

On the other side, the analysis of emerging trends in advertising reveals a transition towards the use of advanced technologies. Advertising based on artificial intelligence, augmented reality and voice-activated ads are gaining prominence, demonstrating how companies are incorporating new technologies to interact more effectively with their audiences. This reflects an innovative orientation within the advertising industry, where technological advancement is setting the course for communication strategies.

The convergence of contemporary advertising trends and emerging technologies illustrates the capacity of advertising to shape public attitudes and behavioral patterns. In this sense, the responsible and ethical use of these tools is essential to ensure a balance between advertising effectiveness and social welfare. The relevance of retargeting and the adoption of new trends are evidence of the industry's ability to adapt to technological evolution, contributing meaningful perspectives to guide forthcoming research and strategic practices in contemporary advertising.

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