

**THE EVOLUTION OF CONSUMER BEHAVIOR IN THE DIGITAL AGE: A SYSTEMATIC REVIEW OF E-COMMERCE MARKETING STRATEGIES**

**PERKEMBANGAN PERILAKU KONSUMEN DI ERA DIGITAL: TINJAUAN SISTEMATIS STRATEGI PEMASARAN E-COMMERCE**

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**ABSTRACT**

Real-time personalized marketing techniques are becoming important in improving consumer experience and driving impulse shopping behavior in digital e-commerce. However, the impact of these techniques on various cultural demographics remains underexplored, particularly in the context of consumer impulsivity. This research aims to systematically examine how real-time personalization influences impulse buying behavior in various cultural settings, using a systematic literature review approach. Through the PRISMA method, relevant studies are collected from databases such as Scopus, Web of Science, and JSTOR. Key findings suggest that cultural values significantly moderate responses to real-time personalization, with consumers from individualist cultures showing higher levels of impulsivity compared to collectivist cultures. This research contributes to the e-commerce literature by identifying cultural dynamics in real-time personalization strategies, providing practical insights for marketers to design adaptive and effective personalization strategies in global markets.

**Keywords:** Real-time personalization, impulse shopping behavior, cultural differences, e-commerce, systematic literature review, cross-cultural marketing

**ABSTRAK**

*Teknik pemasaran personalisasi real-time menjadi penting dalam meningkatkan pengalaman konsumen dan mendorong perilaku belanja impulsif di e-commerce digital. Namun, dampak teknik ini pada berbagai demografi budaya masih kurang dieksplorasi, khususnya dalam konteks impulsivitas konsumen. Penelitian ini bertujuan untuk mengkaji secara sistematis bagaimana personalisasi real-time mempengaruhi perilaku pembelian impulsif di berbagai latar budaya, dengan menggunakan pendekatan systematic literature review. Melalui metode PRISMA, studi yang relevan dikumpulkan dari database seperti Scopus, Web of Science, dan JSTOR. Temuan utama menunjukkan bahwa nilai-nilai budaya secara signifikan memoderasi respons terhadap personalisasi real-time, di mana konsumen dari budaya individualis menunjukkan tingkat impulsivitas yang lebih tinggi dibandingkan dengan budaya kolektif. Penelitian ini berkontribusi pada literatur e-commerce dengan mengidentifikasi dinamika budaya dalam strategi personalisasi real-time, memberikan wawasan praktis bagi pemasar untuk merancang strategi personalisasi yang adaptif dan efektif di pasar global.*

**Kata Kunci:** Personalisasi real-time, perilaku belanja impulsif, perbedaan budaya, e-commerce, systematic literature review, pemasaran lintas budaya

**1. INTRODUCTION**

Real-time personalization has emerged as an important innovation in the e-commerce sector, allowing companies to customize content and product offerings based on consumer behavior data. This approach is especially relevant in today's digital era, where consumers have

access to a variety of choices that intensify competition between e-commerce platforms. The essential value of real-time personalization lies in its ability to increase consumer relevance and engagement in every interaction, creating a shopping experience that is more direct and tailored to individual needs (Лукичева & Семенович, 2019; Monem, 2021). By leveraging consumer data such as search history, previous purchases, and geographic location, e-commerce platforms can create personalized experiences that match individual preferences, ultimately increasing customer satisfaction and sales conversion rates (Weydert et al., 2019).

Various mechanisms such as recommendation engines, dynamic pricing, and customized notifications are examples of how real-time personalization operates in the e-commerce realm. Recommendation engines, for example, analyze past purchasing patterns to suggest products that match consumer interests, while dynamic pricing adjusts prices based on customer segmentation to increase perceived product value (Kim et al., 2018). Additionally, push notifications can remind consumers during their shopping journey, encouraging them to make purchases (Cui et al., 2022). The cumulative effect of these personalization strategies not only improves the user experience but also deepens consumer engagement, which is key to driving purchases. The emotional connection formed through this personal interaction significantly strengthens consumer loyalty to the brand (Cui et al., 2022; Monem, 2021).

On the other hand, impulse shopping behavior, characterized by spontaneous purchases driven by emotional and situational triggers, is increasingly becoming a prominent phenomenon in e-commerce. Ease of access and attractive visual displays on e-commerce platforms also contribute to this phenomenon, especially reinforced by digital marketing strategies that focus on personalization (Cui et al., 2022; Augustinah, 2023). In contrast to planned purchases, impulse shopping occurs without initial intention and is often triggered by stimuli that attract the consumer's attention (Waskito, 2023). Digital shopping environments that enable quick decision making with minimal cognitive effort also strengthen this impulsive shopping tendency (Wang et al., 2022; Sari, 2021). Research shows that around 40% of online shopping transactions are impulsive, which emphasizes the significant impact of e-commerce strategies on consumer buying behavior ("The impact of gamification of m-commerce platforms on users' impulse buying behavior", 2023).

Overall, real-time personalization in e-commerce not only increases consumer engagement and satisfaction but also plays an important role in driving impulse shopping behavior. By leveraging consumer data to create customized experiences, e-commerce platforms can effectively meet individual needs, increase the likelihood of a purchase, and strengthen brand loyalty. This link between personalization and impulse shopping behavior highlights the importance of a strategic marketing approach in the competitive e-commerce landscape.

Personal branding and push notifications are increasingly recognized as significant triggers for impulse shopping behavior in natural environment e-commerce. The integration of real-time personalization, such as product offers and tailored recommendations based on previous consumer interactions, increases the likelihood of impulse purchases. Research shows that personalization techniques can significantly increase impulse shopping tendencies by creating shopping experiences that feel immediate, relevant, and emotional for consumers (Wang et al., 2022; Husnain & Akhtar, 2016; Milaković, 2023). For example, limited-time promotions and data-driven recommendations can trigger a sense of urgency, encouraging consumers to act quickly, ultimately strengthening their impulse responses compared to traditional shopping methods (Wang et al., 2022; Milaković, 2023).

However, the effectiveness of real-time personalization is not uniform across different cultural contexts. Cultural values play an important role in shaping consumers' interactions with digital technologies and their responses to personalization strategies. Studies show that consumers from individualistic cultures, such as the United States, tend to be more receptive to direct and exclusive personalization approaches compared to those from collectivist cultures,

such as Japan, where such strategies may be perceived as intrusive (Pornpitakpan & Han, 2013; Jayasuriya et al. al., 2022; Czarnecka et al., 2020). Varying cultural attitudes toward privacy and trust in technology also complicate this landscape. In cultures with greater concerns about the use of personal data, consumers may show resistance to personalized marketing efforts, which may hinder the effectiveness of impulse-inducing strategies (Dameyasani & Abraham, 2013; Chen et al., 2021).

Understanding these cultural nuances is critical for e-commerce marketers looking to optimize their personalization strategies. By adapting approaches to align with cultural values and consumer behavior prevailing in different regions, marketers can increase the effectiveness of their campaigns. For example, strategies that are effective for consumers in Asia may not be implemented as effectively in European markets, so a deeper understanding of cultural differences is important to avoid less effective or counterproductive personalization efforts (Sun et al., 2021; Xiao & Nicholson, 2012). This cultural sensitivity is critical not only to increase customer satisfaction but also to increase sales conversions in the global e-commerce environment. In conclusion, although real-time personalization can significantly improve impulse shopping behavior, it is critical for marketers to recognize and adapt to cultural differences that influence consumer responses. This study aims to explore how various personalization techniques influence impulse shopping behavior in different cultural contexts, to provide insights for more effective cross-cultural e-commerce marketing strategies.

Although previous literature has explored aspects of personalization and impulsive behavior in e-commerce in general, research specifically evaluating how real-time personalization techniques influence impulsive behavior through the lens of cultural demographic differences is lacking. Most studies tend to focus on the effects of personalization in homogeneous market environments or only emphasize consumer behavior in specific regions. Very little research has explored how real-time personalization may be received differently across cultural groups, yet this factor has become highly relevant in global e-commerce accessed by consumers from diverse cultural backgrounds. As a result, a lack of understanding of the varying responses to these personalization techniques may result in less effective marketing approaches or even have a negative impact on certain cultural groups. This research aims to fill this gap by providing a comprehensive analysis of the influence of real-time personalization on consumer impulsive behavior in various cultural contexts.

The main question of this research is: "How do real-time personalization techniques influence impulse buying behavior across various cultural demographics in the digital e-commerce landscape?" These questions were designed to explore in depth the relationship between the adoption of real-time personalization and impulse shopping tendencies across various cultural groups. This research also aims to understand the specific factors that influence consumer acceptance and response to a variety of personalization techniques, such as product recommendations, dynamic pricing, and personally targeted notifications.

This research aims to achieve several important objectives. First, this research will identify and analyze key findings regarding the impact of real-time personalization on impulse shopping behavior. This initial goal is to provide a systematic review of existing literature regarding the influence of real-time personalization, such as algorithm-based product recommendations, dynamic pricing, and the use of push notifications tailored to consumer behavior and preferences. This analysis will provide a solid theoretical basis for how real-time personalization influences impulsive behavior, including the emotional and cognitive aspects that trigger it. Additionally, this research aims to explore cultural differences in consumer responses to personalization techniques across different countries or cultural groups. This goal is important because different norms, values, and preferences can influence how consumers receive and respond to personalization stimuli. For example, consumers in countries with collectivist cultures may respond differently to personalization compared to consumers from individualist cultures, especially when they are exposed to intense personalization techniques.

Within this framework, research will examine specific cultural factors, such as differences between collectivist and individualist cultures and sensitivity to privacy and technology in response to personalization strategies.

Finally, this research aims to provide strategic insights for cross-cultural marketing in the e-commerce sector. Based on a comprehensive analysis of real-time personalization and cultural differences, this research will develop practical recommendations that can be implemented in cross-cultural e-commerce marketing strategies. With a deeper understanding of how real-time personalization influences impulsive behavior in different cultural contexts, e-commerce players can develop marketing approaches that not only enhance the user experience, but also align with their cultural values and preferences. The strategy developed will help improve the “one-size-fits-all” approach common in global e-commerce, and lead to more targeted and culturally relevant solutions.

It is hoped that this research will be able to provide new insights into the digital marketing literature, especially in the development of personalization techniques that are more inclusive and adaptive to cultural differences, thereby helping marketers optimize their strategies in reaching global consumers.

## **2. METHODS**

### **2.1. Systematic Literature Review Protocol**

To organize this study, approach Systematic Literature Review (SLR) will be implemented following standard guidelines, including PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) criteria to maintain research consistency and transparency. The SLR process in this study consisted of several main stages: a comprehensive literature search, screening of relevant articles, and in-depth analysis of the results of selected studies. With this approach, the research aims to identify and collect evidence from previous research that is relevant to the topics of real-time personalization techniques, impulse shopping behavior, and cultural differences in e-commerce.

### **2.2. Search Strategy**

A literature search will be carried out on several credible academic databases, including:

- Scopus
- Web of Science
- JSTOR
- IEEE Xplore
- Google Scholar (to identify additional articles that may have been missed in the main database)

Specific keywords and Boolean combinations were used to ensure comprehensive coverage in the search. The main keywords used are:

- Real-time personalization
- Impulsive purchasing behavior
- Cultural differences
- E-commerce

Several variations of terms will also be used to cover various articles that may be relevant, including related words such as dynamic personalization, consumer impulsivity, cross-cultural analysis, and online shopping behavior. To avoid irrelevant results, search terms will be focused on main keywords and combined with content filters (such as peer-reviewed and full-text access).

### **2.3. Inclusion and Exclusion Criteria**

To maintain the focus and quality of this literature review, the inclusion and exclusion criteria are set as follows:

**2.3.1. Inclusion Criteria:**

- Article focusing on real-time personalization techniques and their impact on impulse shopping behavior.
- Studies that include an analysis of cultural differences in the context of e-commerce.
- Research published in recognized academic journals or conferences with a focus on digital marketing, consumer psychology, or cross-cultural.

**2.3.2. Exclusion Criteria:**

- Articles that do not focus on real-time personalization (for example, studies that only cover general personalization without real-time elements).
- Studies that are outside the context of e-commerce, such as brick-and-mortar retail or traditional marketing.
- Literature that lacks empirical information or is opinion-based without quantitative or qualitative evidence.

**2.4. PRISMA Diagram**

The article selection process will be presented in PRISMA diagram which shows the steps taken during the literature screening process:

1. Identification: Number of articles found through the search database.
2. Screening: Initial screening based on abstract and title to eliminate irrelevant articles.
3. Eligibility: Full-text review of articles that met the initial criteria.
4. Inclusion: The final article included in the analysis after applying the inclusion and exclusion criteria.

This diagram will help transparently visualize the flow of article selection, including the number of articles included or eliminated at each stage.

**2.5. Data Extraction and Synthesis**

At this stage, relevant data will be extracted from each article included in the analysis. Some of the important elements that will be analyzed from each study include:

- Research methods: Type of research (e.g., quantitative, qualitative, or mixed study).
- Personalization techniques used: The type of real-time personalization applied, such as product recommendations, dynamic pricing, or push notifications.
- Impulsive behavior data: Results or findings related to the level of impulsivity in consumer behavior.
- Analyzed cultural differences: Cultural factors or geographic areas that are the focus of research and how these influence responses to personalization.

For data analysis methods, techniques and thematic analysis will be used to identify key themes emerging from related literature. If the data allows, meta-synthesis will also be applied to combine findings from various studies and produce comprehensive conclusions. This analysis will provide insight into consistent patterns or variations in consumer impulsive behavior influenced by real-time personalization, across various cultural contexts.

**3. RESULTS****3.1. Descriptive Analysis**

The studies selected for this analysis present diverse methodological approaches and geographic distributions covering regions such as North America, Europe, Asia, and Australia. These geographic variations provide insight into how real-time personalization techniques are applied in different cultural contexts.

**3.2. Geographic Distribution**

The research analyzed in this review covers diverse cultural contexts, with most studies conducted in countries with advanced digital economies such as the United States, China, and several European countries. Several smaller cross-cultural studies were also found, allowing direct comparisons between responses to personalization in individualistic versus collectivistic countries.

### **3.3. Research Methods Used**

Most studies use quantitative methods, such as experiments and surveys, to measure impulse shopping behavior in conjunction with personalization techniques. Several qualitative studies were also found, which delved deeper into consumer experiences through interviews or focus group discussions. Quantitative studies often focus on specific outcomes (such as purchase conversions), while qualitative studies help understand the nuances of consumer experiences.

### **3.4. Cultural Variables Examined**

Some studies specifically explore cultural values such as individualism vs. collectivism, uncertainty vs. risk aversion, and long-term orientation, which influence how consumers respond to real-time personalization techniques. These cultural values provide important context for understanding differences in consumer reactions to personalization-based marketing strategies.

### **3.5. Themes Identified**

Based on the findings from the studies analyzed, several main themes emerged as follows:

#### **1. Techniques of Real-Time Personalization in E-commerce**

Real-time personalization techniques used in the e-commerce context include a variety of approaches to influence consumer purchasing decisions. Some of the most frequently encountered techniques are:

- **Product Recommendations Based on History:** This technique displays products or services that are relevant to users based on their previous search and purchase history. This recommendation is associated with an increased likelihood of purchase, especially for low to medium priced products.
- **Push Notifications:** Notifications directly on users' devices promoting products or offering special discounts. This technique is effective in encouraging impulse purchases, especially on mobile apps, because it provides an element of urgency.
- **Targeted Ads:** Personalized advertising based on user behavior on various online platforms, such as advertising on social media that corresponds to products the user has viewed. These ads increase engagement with consumers, but the level of effectiveness varies depending on frequency and placement.

#### **2. Impulsive Purchasing Behavior Patterns**

Studies show that real-time personalization is related to impulse shopping patterns that can be identified through several indicators:

- **Purchase Frequency:** Personalization techniques often increase the frequency of impulse purchases, especially on platforms that offer immediate notifications or pop-ups while users are surfing.
- **Most Frequently Purchased Product Categories:** Lower-priced, low-involvement products, such as fashion items, cosmetics, or accessories, are more often purchased on impulse than high-priced products.
- **Correlation with Platform Visit Duration:** The longer users are on the platform, the more likely they are to make impulse purchases, especially when exposed to ongoing personalization techniques (e.g., product recommendations that change based on last click).

### 3. Cross-Cultural Differences

Responses to personalization techniques vary widely across cultures, especially when compared between individualistic and collectivistic societies:

- Individualistic Cultures (e.g., US, Western Europe): Consumers from more individualistic cultures tend to be more receptive to personalization techniques and have a higher tendency to make impulse purchases. They also respond more to notifications that highlight individual preferences or exclusive products.
- Collectivistic Cultures (e.g., Japan, China): Consumers from collectivistic cultures are generally more wary of impulse purchases and consider the impact of purchasing decisions on the family or group. Personalization techniques that emphasize group recommendations (such as "this product is popular among other consumers in your area") are more effective in these cultures.
- Risk Aversion Tendencies: In countries with a high tendency to avoid risk, consumers tend to be more selective in responding to personalized offers of new products compared to familiar products.

### 4. Moderating Variables

In addition to cultural differences, several additional variables were found to act as moderating factors in the relationship between personalization techniques and impulsive shopping behavior:

- Types of products: Low-involvement products (for example, fast-consumer goods or accessories) are more often chosen impulsively compared to high-involvement products such as electronics or products that require a large financial commitment.
- Product Engagement Rate: Product involvement (high vs. low involvement) influences impulsive responses; for example, more affordable products tend to encourage impulse purchases, whereas products that require a higher financial commitment tend to be impulsively avoided.
- Demographic Influence: Age and gender were also found to be influential factors, with younger consumers tending to respond to personalization techniques more quickly and frequently. Additionally, women were found to be more responsive to the personalization associated with discount offers compared to men.

The results of these themes suggest complex patterns in how real-time personalization techniques influence impulsive behavior, especially when linked to cultural and demographic variations. This understanding is important for e-commerce practitioners in developing effective and adaptive strategies according to consumer characteristics in various regions.

## 4. DISCUSSIONS

### 4.1. Interpretation of Results

The study results show that real-time personalization techniques in e-commerce have a significant influence on impulse shopping behavior, especially through recommendations tailored to user preferences during their interactions on the platform. This is in line with the Stimulus-Organism-Response (SOR) model, which states that external stimuli, such as personalized content, can influence consumer behavior and drive impulse buying decisions. Research shows that personalization increases consumer engagement, which ultimately increases the likelihood of impulse purchases (Chu et al., 2023; Chan et al., 2017). Immediate

and relevant recommendations act as stimuli that trigger emotional responses, which then result in impulse purchases (Chan et al., 2017).

Furthermore, the effectiveness of real-time personalization is further strengthened by visual stimuli such as notifications and personalized product suggestions, which have proven to be highly effective in a fast-paced digital environment. Studies show that these visual stimuli can significantly increase consumer engagement and trigger impulsive shopping behavior, as they create a sense of urgency and relevance (Chu et al., 2023; Chan et al., 2017). The digital shopping landscape, with its ease of access and immediacy, supports an environment conducive to impulse shopping, with approximately 40% of online consumer spending estimated to result from this behavior (Chan et al., 2017).

Interestingly, the impact of real-time personalization on impulse shopping may vary across cultural contexts. Consumers from cultures with a low tolerance for uncertainty tend to show a more cautious response to personalization techniques compared to consumers from cultures that are more tolerant of uncertainty. These cultural dimensions influence how consumers perceive and respond to personalization stimuli, indicating the importance for marketers to consider cultural factors in designing personalization strategies (Marbach et al., 2019). This deeper understanding of consumer behavior emphasizes the importance of aligning marketing approaches with cultural values and consumer expectations (Akküçük & Esmaili, 2016).

In conclusion, real-time personalization techniques play an important role in shaping impulse shopping behavior in e-commerce. By leveraging the SOR model, marketers can better understand how personalized stimuli influence consumer engagement and purchasing decisions. Additionally, recognition of variations in cultural responses to personalization can improve the effectiveness of marketing strategies, which will ultimately increase consumer satisfaction and increase sales.

#### **4.2. Cultural Dynamics in E-Commerce Personalization**

Cultural differences significantly influence the effectiveness of real-time personalization in marketing strategies, especially when it comes to impulse shopping behavior. In individualistic cultures, such as those in the United States and many European countries, personalization techniques that focus on individual preferences and exclusivity tend to be more successful. This is because individuals in these cultures value autonomy and self-expression, which are important components of their identity. Research shows that personalized marketing according to personal interests increases consumers' perceptions of recognition and rewards, thereby encouraging impulse shopping behavior (Barros et al., 2019). For example, consumers in individualistic societies often ignore the potential negative consequences of their impulsive shopping, driven by a strong sense of independence and self-control (Barros et al., 2019).

In contrast, in collectivistic cultures such as Japan and China, the effectiveness of personalization strategies is more likely to lead to social validation and group-oriented messages. Consumers in these societies are more likely to respond positively to recommendations that emphasize popularity or support from peers, reflecting their reliance on social norms and group behavior in the decision-making process (Barros et al., 2019). This is in line with Hofstede's cultural dimensions theory, which states that collectivist cultures prioritize group harmony and social influence compared to individual desires (Sorokowska et al., 2017). Research shows that individuals in collectivist cultures may exhibit higher impulsive shopping tendencies when influenced by social factors, indicating a complex relationship between cultural context and consumer behavior (Dameyasani & Abraham, 2013).

Additionally, the relationship between cultural values and impulse shopping behavior suggests that marketers must adapt their strategies according to the cultural context of the target audience. For example, while individualistic consumers may respond better to personalized offers that emphasize uniqueness, collectivistic consumers may be more

influenced by collective trends and social proof (Barros et al., 2019). This understanding is critical to developing effective and relevant marketing campaigns for a diverse customer base across cultural landscapes.

In short, the effectiveness of real-time personalization in driving impulse purchases is greatly influenced by cultural differences. Individualistic cultures prefer a personalized approach that enhances self-expression, whereas collectivistic cultures respond more to social validation and group-oriented messages. Therefore, marketers must consider these cultural dimensions to effectively optimize their personalization strategies.

#### **4.3. Theoretical Contributions**

This study makes a significant contribution to the consumer behavior and digital marketing literature by filling the knowledge gap regarding real-time personalization impacting impulse shopping behavior across cultures. The main contribution of this research is a deeper understanding of how cultural variables, such as individualism and collectivism, moderate the effects of real-time personalization on shopping impulsivity. Most previous literature on personalization has focused only on its general effectiveness, without considering cultural elements that may influence the final results. In doing so, this study expands understanding of cross-cultural consumer behavior in the digital era, and provides insight into how cultural factors can moderate consumer responses to personalization.

This research also enriches the literature related to digital nudging and consumer behavior, by showing that factors such as cultural context can be a driver or barrier to impulsive decision making. Additionally, this study underscores the importance of understanding cultural differences when crafting personalization strategies in e-commerce, which can provide a foundation for further research on cross-cultural personalization.

#### **4.4. Practical Implications for Marketers**

These findings provide practical implications for e-commerce marketers in developing more adaptive and effective strategies for cross-cultural markets. For markets in countries with individualistic cultures, marketers can focus on personalization techniques that are oriented to consumers' personal preferences, such as real-time notifications about exclusive products or products that are similar to those that consumers have previously purchased. An emphasis on exclusivity and personal recommendations will help increase conversions and build customer loyalty in these markets.

In contrast, for markets in countries with collectivistic cultures, marketers should consider more social or community-based personalization, for example by displaying products that are popular among other users or recommendations based on group trends. This technique can create strong social proof, so that consumers feel more comfortable and are encouraged to buy products that are supported by their community or group. Market segmentation based on cultural differences and adapting personalization techniques accordingly are important strategies that can effectively increase consumer engagement and sales conversion.

#### **4.5. Limitations and Suggestions for Future Research**

This study has several limitations that need to be considered. First, this research uses secondary data from available literature, so it cannot directly test hypotheses or obtain primary data from users. This means that there are limitations in the interpretation of results, especially when examining complex cultural dynamics that may not be fully reflected in the available literature.

Furthermore, most of the research reviewed in this review focuses on primarily individualistic and collectivistic cultures, with less coverage for more unique or underrepresented cultures, such as countries in the Middle East or Africa. These limitations

underscore the need to expand the scope of studies on personalization in more diverse cultural contexts.

For future research, it is recommended to conduct field experiments involving direct testing of real-time personalization techniques in various cultural contexts, which will help identify nuances in consumer responses in each country. These experiments would also be useful in examining additional moderating variables such as product type, level of product involvement, and other demographic factors, such as age and education level, that may influence consumer responses to personalization.

Future research could also explore how real-time personalization can be modified according to technological developments, such as the use of artificial intelligence to further personalize the user experience based on emotional responses or visual preferences. This will provide deeper insight into how to optimize marketing strategies that are appropriate to culture and technology.

## **5. CONCLUSIONS**

### **5.1. Summary of Key Findings**

This research shows that real-time personalization techniques play an important role in driving impulse shopping behavior in e-commerce, especially by providing a shopping experience that is directly tailored to consumer preferences. However, the effectiveness of these personalization techniques is not uniform across all cultural contexts. Key findings indicate that consumers from individualistic cultures (e.g., the United States and Western Europe) tend to be more responsive to personalization that focuses on individual needs, such as exclusive product recommendations or personalized special offers. In contrast, consumers from collectivistic cultures (e.g., Japan and China) are more interested in personalization that highlights social or community preferences, such as products that are popular among their group.

These cultural variations highlight the importance of understanding cultural factors as moderating variables in the effectiveness of real-time personalization. These findings also make it clear that, in the fast-paced digital era, personalization techniques can be one of the most effective tools for increasing conversions, but they must be contextually adapted to the consumer's cultural background to achieve optimal results.

### **5.2. Research Contributions**

This study makes a significant contribution to the e-commerce literature by offering a new perspective regarding how real-time personalization techniques influence impulsive behavior in a cross-cultural context. This study also enriches consumer behavior theory by identifying that consumers' response to personalization is determined not only by the individual's impulsive nature, but also by the cultural values underlying their shopping decisions. Thus, this study adds a new dimension to the literature on real-time personalization and impulsive behavior by introducing cross-cultural aspects as a crucial factor.

Furthermore, this research paves the way for follow-up studies that could explore more deeply the relationship between personalization techniques and culture, as well as their influence on other aspects of the e-commerce experience. The results of this research can be a basis for future research that wants to understand more deeply about impulsive shopping behavior in different cultural frameworks, especially in the era of digital globalization.

### **5.3. Implications for Cross-Cultural E-Commerce Strategies**

The practical implications of this research emphasize that marketers in the e-commerce industry must consider cultural differences in designing their personalization strategies. In the global e-commerce environment, more contextual marketing strategies can increase the effectiveness of personalization techniques, especially in targeting consumers

from diverse cultural backgrounds. Marketers operating in different cultural areas should adapt personalization techniques to consumers' cultural values and preferences, such as highlighting aspects of individuality in individualistic markets or aspects of community in collectivistic markets. In this way, marketers not only increase the chances of conversion, but also build long-term relationships with consumers around the world.

In conclusion, this research suggests that e-commerce marketers optimize the use of real-time personalization with strategies that take into account cultural differences. In an increasingly global marketplace, marketers who understand cultural variations in response to personalization techniques will be better able to attract consumers and increase sales significantly. The recommendation for marketers is that they continue to conduct local market research to understand specific cultural needs and use analytics technology to adjust their personalization strategies. With a more adaptive personalization strategy, e-commerce marketers can maximize growth potential in international markets and achieve a stronger competitive advantage.

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