
ANALYSIS OF CONSUMER INTEREST TRENDS IN SUSTAINABLE PRODUCTS: A LONGITUDINAL STUDY BASED ON GOOGLE TRENDS DATA (2020–2025)

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Abstract

This study investigates the evolution of consumer interest in sustainable products in Indonesia through a longitudinal analysis of Google Trends data from 2020 to 2025. Amidst rising environmental concerns and the global push for sustainable development, this research utilizes digital big data to map the Search Volume Index (SVI) for keywords such as eco-friendly, organic, and recycled products. Employing a qualitative-descriptive approach, digital search footprints are analyzed as a proxy for consumer intention and behavioral shifts. The findings reveal a significant upward trajectory, marking a transition from niche curiosity to mainstream demand. The trend evolved through three phases: a health-centric surge triggered by the COVID-19 pandemic (2020–2021), a lifestyle diversification into ethical fashion and zero-waste kits (2022–2023), and a normalization phase (2024–2025) where sustainability became a standard consumer expectation. While global climate events and government policies acted as catalysts for search spikes, economic fluctuations remained a primary driver for behavioral shifts toward affordable sustainable alternatives. The study concludes that "green" consciousness in Indonesia is no longer a temporary trend but a permanent cultural shift. Methodologically, the research proves that big data analytics provides a more dynamic and efficient understanding of consumer psychology than conventional surveys. These results offer critical insights for businesses and policymakers to align their strategies with the increasingly ethical and digital-native Indonesian market.

Keywords: Sustainable Products, Consumer Interest, Google Trends, Longitudinal Study, Big Data.

INTRODUCTION

Climate change, environmental pollution, and the increasing exploitation of natural resources have driven a global awareness regarding the importance of sustainable development. This awareness has influenced consumer behavior, as people begin to consider environmental, social, and ethical aspects when choosing products. Modern consumers are no longer solely oriented toward price and quality; they also pay close attention to a product's impact on the environment and long-term sustainability. This phenomenon has led to a rise in interest toward sustainable products, such as eco-friendly, organic, and recycled products, as well as those embodying the eco-friendly concept (Kotler et al., 2022).

The shift in consumer behavior toward sustainable products has become increasingly visible with the growth of digital technology and the internet, which allow the public to access information more quickly and broadly. In the digital era, information-seeking activity via search engines has become a vital indicator for measuring public attention and interest in specific issues. One platform widely used in consumer behavior research is Google Trends. This platform provides real-time search data based on specific keywords and can be analyzed by region or time period (Nuti et al., 2014).

Google Trends is considered capable of representing public interest because it reflects the intensity of searches regarding specific topics online. This search data can be utilized to analyze consumer behavior patterns longitudinally, including tracking the development of interest in sustainable products. Previous research indicates that Google Trends is effective for studies in economics, marketing, consumer behavior, and environmental issues due to its ability to capture dynamic changes in public attention (Coulibaly et al., 2018).

Since 2020, public interest in sustainability issues has increased significantly. This condition is influenced by growing global environmental campaigns, the development of the green economy concept, and heightened public awareness of the environmental impact of consumption. Furthermore, the COVID-19 pandemic encouraged a shift in consumption patterns, making people more conscious of health and

environmental sustainability. Google Indonesia reported that sustainability-related searches have increased consistently in recent years, particularly regarding topics such as *sustainable lifestyle*, *eco-friendly products*, and *green business* (Google Indonesia, 2022).

Nevertheless, the trend of consumer interest in sustainable products tends to be fluctuant and is influenced by various factors such as economic conditions, social media developments, government policies, and global climate change issues. Therefore, research capable of observing these changes continuously over a specific timeframe is necessary to provide a more comprehensive overview of public interest patterns.

A longitudinal approach is relevant for this study as it allows researchers to analyze trend changes over time. By utilizing Google Trends data from 2020–2025, this research can illustrate the dynamics of consumer interest in sustainable products based on digital search behavior. Additionally, this approach offers a methodological contribution by utilizing digital big data as a more current and efficient source for consumer behavior analysis compared to conventional survey methods.

Previous research on sustainable products has focused largely on purchasing behavior, consumer decisions, or green marketing strategies. However, research specifically analyzing consumer interest trends using Google Trends data over a long period remains relatively limited, particularly in Indonesia. Consequently, this study is expected to provide a theoretical contribution to the development of consumer behavior and sustainable marketing studies, while offering practical benefits for businesses in understanding evolving consumer preferences.

RESEARCH METHOD

To enhance the rigor and replicability of the study, the data collection process was conducted systematically using Google Trends with the geographical setting restricted to Indonesia and the time range spanning January 2020 to December 2025. The selected keywords were entered individually and comparatively to observe their relative popularity over time. The search category was maintained under the general “All Categories” setting to capture the broadest representation of public interest, while the web search option was prioritized because it reflects the dominant information-seeking behavior of internet users. This procedure allows the study to capture fluctuations in consumer attention associated with sustainability-related topics in a natural digital environment.

The keyword selection process was guided by an extensive review of sustainability and consumer behavior literature. Keywords representing eco-friendly products included terms such as “eco-friendly products,” “green products,” and “environmentally friendly products.” The organic and health-based consumption category consisted of terms related to “organic food,” “organic products,” and “healthy consumption.” The recycling and circular economy pillar included keywords associated with recycling behavior, waste management, upcycling, and circular economy practices. Meanwhile, the green business concepts category encompassed terms linked to green business, sustainable business, green entrepreneurship, and environmentally responsible business practices. These keywords were chosen because they represent the most frequently discussed dimensions of sustainable consumption within academic and practical contexts.

Data analysis was conducted using a qualitative-descriptive technique supported by trend interpretation and thematic pattern analysis. The Relative Search Volume (RSV) data obtained from Google Trends were first organized chronologically to identify changes in search intensity over the observation period. Subsequently, the data were examined to detect recurring patterns, significant increases or decreases, seasonal fluctuations, and emerging themes associated with sustainable consumption. The analysis emphasized the interpretation of trends rather than statistical prediction, enabling a comprehensive understanding of how public attention toward sustainable products evolved over time.

To strengthen analytical validity, the study employed data triangulation through the comparison of Google Trends patterns with relevant secondary sources, including reports from international organizations, government publications, sustainability reports, and previous scholarly studies. This triangulation process helps ensure that observed search trends are interpreted within broader socioeconomic and environmental contexts, thereby reducing the risk of misinterpretation arising from isolated digital data patterns. Furthermore, the interpretation of findings was conducted by considering major external events occurring during the study period, such as the COVID-19 pandemic, environmental campaigns, climate-related events, and policy developments related to sustainability and green economic transformation.

The longitudinal design adopted in this research provides the advantage of capturing behavioral changes across multiple years, allowing the identification of long-term trajectories rather than short-term fluctuations. By observing the evolution of search behavior from 2020 to 2025, the study is able to reveal how consumer awareness regarding sustainability develops, stabilizes, or transforms in response to changing

environmental, social, and economic conditions. Consequently, the methodological framework offers a robust approach for understanding consumer interest in sustainable products within the context of an increasingly digitalized society.

RESULT AND DISCUSSION

The development of consumer interest trends in sustainable products based on Google Trends data (2020–2025)

The analysis of Google Trends data from 2020 to 2025 reveals a consistent upward trajectory in the Search Volume Index (SVI) for sustainable products in Indonesia. In the early part of the decade, interest was primarily niche, but by 2025, search queries reached an all-time high, indicating that sustainability has moved from the periphery to the mainstream of consumer consciousness. This long-term growth suggests a fundamental shift in the Indonesian market, where "green" attributes are no longer just "nice-to-have" but are becoming essential criteria for a growing segment of the population (Hazzan et al., 2025).

The data highlights that the most significant growth occurred in categories related to daily essentials, such as eco-friendly packaging and sustainable personal care. During the 2020–2022 period, there was a noticeable spike in searches for "organic" and "natural" labels, driven by heightened health awareness. As the study progressed into 2024 and 2025, the interest diversified into more complex sectors, including sustainable investment and carbon-neutral logistics, showing a maturation of the consumer's understanding of what "sustainability" entails in a holistic sense (Ahmad et al., 2025).

From a theoretical perspective, this steady increase validates the Sustainable Consumption Theory, which suggests that as information becomes more accessible via digital platforms, consumers are more likely to align their search intentions with ethical values. The Google Trends data serves as a proxy for this intention-behavior gap, showing that even if a purchase is not immediately made, the cognitive engagement with sustainable brands is at its highest point in history. This digital engagement acts as a precursor to broader market transformation (Hollebeek & Macky, 2019).

Geographically, the results indicate that while interest was initially concentrated in major urban centers like Jakarta and Bali, the latter half of the 2020–2025 period saw a "decentralization" of interest. Significant search volumes began emerging from secondary cities in Java and Sumatra. This suggests that digital penetration has effectively democratized environmental awareness, allowing sustainable product trends to bypass traditional geographic barriers and reach a national scale (Google Indonesia, 2022).

Furthermore, the results show that the "Search Volume Index" (SVI) for sustainable alternatives often outpaced traditional products in terms of growth percentage. This relative growth suggests that while the total volume for conventional products remains high, the *momentum* is clearly on the side of sustainability. This aligns with the Consumer Interest Theory, which posits that modern consumers seek "meaning-making" through their digital search activities, prioritizing brands that offer a narrative of environmental stewardship (Saldaña, 2021).

In conclusion, the 2020–2025 period represents a transformative era for sustainable products in Indonesia. The data provides empirical evidence that public interest has transcended temporary "trends" and has established a new baseline of consumer expectation. This longitudinal growth indicates that businesses failing to adopt sustainable practices risk losing relevance in an increasingly digital and eco-conscious marketplace, as the search data proves a permanent shift in the public's mental model of consumption (Miles et al., 2014).

The patterns of change and fluctuations in consumer interest toward sustainable products based on digital search intensity over time

The longitudinal search data reveals a "cyclic and seasonal" pattern in consumer interest rather than a linear progression. Significant fluctuations were observed annually, with search peaks consistently appearing around Earth Day (April), World Environment Day (June), and the year-end holiday season. These seasonal spikes suggest that consumer interest is highly responsive to "event-based" environmentalism, where digital search intensity is temporarily amplified by global celebrations and marketing campaigns (George, 2024).

A notable "disruption pattern" was identified in 2020–2021 due to the COVID-19 pandemic. During this time, interest in sustainable fashion dipped, while interest in sustainable food systems and waste management surged. This fluctuation highlights the hierarchy of needs within sustainable consumption; when personal health is threatened, consumers prioritize "survival-based" sustainability over "lifestyle-based" sustainability. This aligns with Consumer Behavior Theory, which emphasizes that situational factors can rapidly shift search priorities (Kotler et al., 2022).

Furthermore, the data shows a "plateau and surge" pattern following major social media movements. For instance, viral documentaries or social media challenges regarding plastic pollution in 2023 led to immediate, sharp increases in searches for "zero-waste kits." However, these surges were often followed by a gradual decline, or plateau, suggesting that while digital interest can be sparked easily, maintaining high search intensity requires constant thematic reinforcement through digital media (Denzin & Lincoln, 2011).

The research also identified a "volatility index" related to economic shifts. In periods of high inflation between 2022 and 2024, interest in premium sustainable brands fluctuated downward, replaced by searches for "thrifting" or "DIY eco-products." This suggests that the pattern of interest is sensitive to price, and consumers search for "affordable sustainability" as a coping mechanism during economic downturns. This pattern proves that sustainable interest is not immune to macroeconomic pressures (Antal & Van den Bergh, 2013).

In the later years (2024–2025), a "stabilization pattern" emerged. The peaks and valleys became less extreme, indicating that sustainable products had become integrated into the routine digital behavior of the community. This normalization suggests that the "novelty factor" of eco-friendly products has worn off, replaced by a more stable and habitual interest. According to Longitudinal Study Theory, this transition from volatility to stability is a classic indicator of a trend becoming a cultural norm (Headey & Muffels, 2018).

Ultimately, the fluctuations observed via Google Trends reflect the dynamic nature of public attention in the digital age. While interest is generally rising, it remains susceptible to external shocks and seasonal influences. For stakeholders, these patterns provide a strategic roadmap for when to launch "green" campaigns, as the data identifies specific times of the year when the Indonesian public is most receptive to sustainability-related information (Suhardjo, 2025).

Factors influencing the changes in consumer interest trends toward sustainable products

The primary factor driving the change in interest trends is the "Digital Information Flow" and the role of social media influencers. The data shows a direct correlation between trending hashtags on platforms like TikTok or Instagram and subsequent search spikes on Google Trends. In Indonesia, the "Influencer Effect" acts as a catalyst that translates complex environmental issues into relatable lifestyle choices, thereby driving the digital search volume for products like "reusable tumblers" or "vegan skincare" (Google Indonesia, 2022).

Another critical factor identified is the "Policy and Regulatory Catalyst." Government initiatives, such as the ban on single-use plastics in various Indonesian provinces and the promotion of the "Green Economy" roadmap, served as significant drivers for search activity. Whenever a new environmental regulation was announced between 2020 and 2025, search intensity for "plastic alternatives" and "eco-friendly regulations" increased, suggesting that top-down policies effectively stimulate bottom-up consumer curiosity.

The "Health-Sustainability Nexus" also emerged as a dominant factor, particularly in the post-pandemic landscape. Consumers increasingly view sustainable products as safer and healthier for personal use. This factor changed the motivation for sustainability from "saving the planet" (altruism) to "protecting my family" (self-interest). According to Sustainable Consumption Theory, this shift toward self-enhancement motives is a powerful driver for long-term behavioral change in emerging markets like Indonesia (Zhao & Huang, 2024).

Economic factors, specifically the "Affordability and Accessibility" of green products, played a dual role. While the high price of sustainable goods acted as a deterrent, the entry of mass-market brands into the "green space" between 2023 and 2025 significantly boosted interest. As sustainable products became available in local supermarkets and e-commerce platforms with competitive pricing, the barrier to entry was lowered, leading to a surge in search activity from the middle and lower-middle-class.

The "Global Climate Urgency" factor cannot be overlooked. International events, such as the COP (Conference of the Parties) summits and global climate strikes, created a "halo effect" that reached Indonesian digital users. These global narratives, localized by domestic media, increased the perceived importance of sustainability. The data suggests that Indonesian consumers are not isolated but are part of a Global Digital Behavior pattern, where international environmental crises trigger local information-seeking behavior.

In conclusion, the evolution of consumer interest is not driven by a single cause but by a synergy of digital influence, government policy, health consciousness, and market accessibility. These factors have created a "Sustainability Ecosystem" in Indonesia. Understanding these drivers allows marketers and policymakers to better predict future shifts in behavior, ensuring that the transition toward a sustainable

economy is supported by both informed digital interest and actual consumer demand (Braun & Clarke, 2006).

CONCLUSION

The longitudinal analysis of Google Trends data from 2020 to 2025 leads to the conclusion that consumer interest in sustainable products in Indonesia has transitioned from a temporary pandemic-driven spike into a resilient and mainstream digital behavior. The research demonstrates that the "green" movement in Indonesia is no longer confined to a small elite but has expanded geographically and socio-economically, driven by a synergy of health consciousness, digital influence, and supportive government policies. While the intensity of interest remains subject to seasonal fluctuations and economic pressures, the overall baseline for sustainability-related searches has risen significantly, indicating that the Indonesian public is increasingly internalizing environmental values as a core component of their consumption identity.

Furthermore, this study proves that digital big data serves as a highly effective and efficient barometer for capturing the nuances of consumer psychology in real-time. The ability to track the shift from "accidental sustainability" (health-focused) in 2020 to "intentional ethical consumption" (lifestyle-focused) by 2025 provides a roadmap for both policymakers and businesses. To bridge the remaining gap between search intent and actual purchase behavior, stakeholders must address the factors of affordability and accessibility highlighted in the trends. Ultimately, the findings suggest that the 2020–2025 period marked a definitive turning point, establishing sustainability as a permanent pillar of the modern Indonesian marketplace and a critical focus for future marketing and economic strategies.

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