

SIM Conference 2024
Conference Track 8: Digital Marketing
Paper Type: Short Paper

Driving User Stickiness in Digital Markets: Atmospheric and Priming Effects in Sustainable Fashion Apps

GIOVANNA PEGAN

Associate Professor, University of Trieste,
email: giovanna.pegan@deams.units.it

&

MARCO BALZANO

Research Fellow, University of Trieste,
email: marco.balzano@units.it

Abstract

Mobile applications emerged as prominent consumer engagement and retention platforms in digital markets. The present study explores the influence of app atmospherics on mobile app stickiness within the sustainable fashion industry. We investigate how perceived usefulness and app design aesthetics affect the stickiness of mobile app users. Our research introduces an authenticity priming effect, highlighting the importance of brand authenticity in sustainable fashion as the key moderating variable. To test our hypotheses, we collected data from consumers of apps designed to identify sustainable fashion brands. Overall, this study contributes to understanding how atmospheric elements and psychological priming can be leveraged to increase user retention in app-driven markets, particularly within the context of sustainability-focused consumer apps.

Keywords: App Stickiness; Atmospheric; Authenticity Priming; Perceived Usefulness; App Design Aesthetics

Introduction and theoretical background

In recent years, the rapid digitalization of markets has led to the emergence of mobile applications as crucial platforms for consumer engagement and retention. This shift is especially significant in niche sectors like sustainable fashion, where consumer values and ethical considerations are pivotal in purchasing decisions. As mobile apps become central to how consumers interact with brands, understanding the factors that drive user stickiness—defined as the likelihood of continued use—has become critical for app developers and marketers.

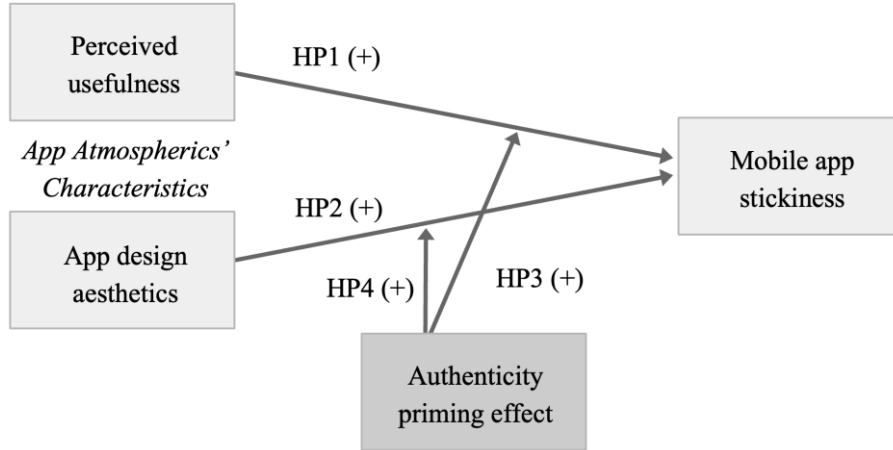
As a result, this study examines two primary factors influencing user stickiness in sustainable fashion apps: perceived usefulness and app design aesthetics. Perceived usefulness, derived from the Technology Acceptance Model (Davis, 1989), refers to the degree to which users believe using an app will enhance their performance. In the context of mobile apps, this translates to how much users find the app beneficial for their tasks. Prior research indicates that perceived usefulness significantly influences user satisfaction and loyalty toward mobile applications (Venkatesh et al., 2003; Al-Shamaileh & Sutcliffe, 2023). For instance, Kim, Park, and Oh (2015) found that the perceived usefulness of mobile health apps significantly predicted continued usage intentions.

App design aesthetics, on the other hand, refers to a mobile application's visual appeal and overall user interface design. Previous research has highlighted the importance of design aesthetics in shaping user perceptions and behaviors (Cyr et al., 2006; Wang et al., 2011). A well-designed app attracts users and enhances their overall experience, leading to higher satisfaction and an increased likelihood of continued use (Sonderegger & Sauer, 2010; Martínez & McAndrews, 2021). In sustainable fashion apps, design aesthetics can convey the brand's commitment to sustainability (Chang et al., 2014; Rohm & Swaminathan, 2004). Additionally, we introduce an authenticity priming, where users are primed to the concept of sustainable brand authenticity in sustainable fashion. Priming is a psychological mechanism where exposure to certain stimuli influences subsequent responses and behaviors (Mandel & Johnson, 2002; Minton et al., 2017; Segal, 1966). According to semantic priming theory, exposure to a prime activates related concepts in memory, making them more accessible and influential in subsequent tasks (Collins & Loftus, 1975; Meyer & Schvaneveldt, 1971). The priming message emphasized the importance of brands' authentic commitment to sustainability, highlighting key aspects such as eco-friendly materials, ethical production practices, and transparency. In consumer behavior, priming can significantly shape perceptions, attitudes, and actions by activating specific concepts or associations in memory (Higgins et al., 1985). Specific priming techniques can be categorized based on an individual's attitude, affective, cognitive, and behavioral dimensions (Klauer & Musch, 2002; McNamara, 2005). As summarized in Figure 1, where the research model is illustrated, this study hypothesizes that authenticity priming enhances the effects of perceived usefulness and design aesthetics on app stickiness.

Methodology

Our research employed a quantitative approach to investigate the relationships between perceived usefulness, app design aesthetics, authenticity priming, and mobile app stickiness. Data was collected from 408 potential users of sustainable fashion apps, Good on You and Renoon. Participants were divided into two groups: one received a priming about sustainable brand authenticity before app exploration, while the other did not. The survey measured perceived usefulness, app design aesthetics, and app stickiness.

Figure 1. Research model



The quantitative phase involved a survey conducted in three phases: exploration, choice task, and questionnaire administration. Participants downloaded and explored either Good on You or Renoon, imagined selecting a sustainable sweater, and then completed a survey on their experience. The survey included measures for perceived usefulness (Akdim et al., 2022), app design aesthetics (Hsieh et al., 2021), and mobile app stickiness (Martínez & McAndrews, 2021). The moderating variable in this study was authenticity priming, introduced through a pre-exposure message emphasizing the importance of authenticity in a sustainable fashion. Control variables were included for potential confounding factors, such as app usage behavior, demographics, and decision-making processes. These variables encompassed metrics such as minutes navigating the app, app shopping frequency, age, gender, education level, and the time required to choose within the app.

Coefficients for latent factors have been estimated via the CLC Estimator (Marzi et al., 2023), thus aligning to congeneric approaches. The subsequent statistical analysis is performed via STATA 17.0. Models were constructed incrementally, starting with a baseline model that included only control variables and gradually incorporated the independent variables and moderators.

Results

Regression analysis revealed that perceived usefulness and app design aesthetics significantly enhance mobile app stickiness. The authenticity priming effect strengthened the relationship between app design aesthetics and stickiness but did not significantly impact the relationship between perceived usefulness and stickiness.

The descriptive statistics and correlation matrix showed significant relationships among the key variables. No significant multicollinearity issues were detected (see Aiken et al., 1991), as all variance inflation factors (VIF) scores were below the recommended threshold of 10 (Gujarati, 2003). The results supported Hypotheses 1 and 2, indicating that perceived usefulness and app design aesthetics positively affect mobile app stickiness. However, Hypothesis 3 was not supported, as the interaction between perceived usefulness and authenticity priming was not significant. Hypothesis 4 was supported, showing that the interaction between app design aesthetics and authenticity priming significantly enhances app stickiness.

Discussion and conclusions

This study found that perceived usefulness and app design aesthetics are vital for enhancing mobile app stickiness in the sustainable fashion sector.

Consistently with the relevance that primes play in influencing consumer behavior (Minton et al., 2017), the results of our study indicate that authenticity priming significantly enhances the relationship between app design aesthetics and mobile app stickiness. This finding is consistent with the principles of semantic priming, where exposure to a prime facilitates the processing of semantically related concepts (Meyer & Schvaneveldt, 1971). This cognitive activation made users more receptive to the app's design aesthetics, thereby increasing their engagement and likelihood of returning to the app. This activation can enhance the consumer's engagement with brands or products that align with these primed concepts. In mobile apps, semantic priming can influence how users perceive and interact with app features, particularly those related to design aesthetics and content relevance (Minton et al., 2017). In this case, the pre-exposure message about authenticity activated related concepts such as trust, ethical behavior, and sustainability in users' minds.

Furthermore, our study aligns with contextual priming, as the pre-exposure message sets a specific context for users, emphasizing the importance of authenticity in a sustainable fashion. This contextual frame guided users' expectations and interactions with the app, enhancing their overall experience. For instance, a priming message that underscores the importance of authenticity in sustainable fashion sets a contextual frame that can enhance the perceived value of brands adhering to these principles. This type of priming can be particularly effective in digital environments, where content and design elements shape the user experience. However, our results suggest that the primary mechanism at work is activating semantically related concepts, reinforcing the effectiveness of semantic priming in shaping consumer behavior (Minton et al., 2017). Building on the gained insights, future research could explore the long-term effects of priming and examine other moderating variables in different app contexts. Additionally, further studies could investigate the impact of different priming messages and their effectiveness in various market segments.

References

- Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: SAGE.
- Al-Shamaileh, O., & Sutcliffe, A. (2023). Why people choose Apps: An evaluation of the ecology and user experience of mobile applications. *International Journal of Human-Computer Studies*, 170, 102965.
- Akdim, K., Belanche, D., Casaló, L. V., & Flavián, C. (2022). The role of hedonic and utilitarian motives for the continued use of social mobile apps. *Journal of Retailing and Consumer Services*, 66, 102888.
- Chang, S.H., Chih, W.H., Liou, D.K., & Hwang, L.R. (2014). The influence of web aesthetics on customers' PAD. *Computers in Human Behavior*, 36, 168–178.
- Collins, A. M., & Loftus, E. F. (1975). A spreading-activation theory of semantic processing. *Psychological Review*, 82(6), 407–428.
- Cyr, D., Head, M., & Ivanov, A. (2006). Design aesthetics leading to m-loyalty in mobile commerce. *Information & Management*, 43(8), 950-963.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Gujarati, D. N. (2003). *Basic econometrics*. New York: McGraw-Hill
- Higgins, E. T., Bargh J.A., Lombardi W. (1985). Nature of priming effects on categorization. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 11(1): 59–69.
- Hsieh, S. H., Lee, C. T., & Tseng, T. H. (2021). Branded app atmospherics: Examining the effect of pleasure–arousal–dominance in brand relationship building. *Journal of Retailing and Consumer Services*, 60, 102482.
- Kim, J., Park, E., & Oh, S. (2015). A study on the adoption of health management applications focusing on perceived value and health condition. *Journal of the Korean Society for Quality Management*, 43(4), 675-691
- Klauer K.C., & Musch J. (2002). Affective priming: findings and theory. In Musch J, Klauer KC (eds). *The Psychology of Evaluation: Affective Processes in Cognition and Emotion*. Lawrence Erlbaum: Mahwah, NJ; 9–50.
- Mandel, N., & Johnson, E. J. (2002). When web pages influence choice: Effects of visual primes on experts and novices. *Journal of consumer research*, 29(2), 235-245.
- Martínez, B. M., & McAndrews, L. E. (2021). The influence of mobile application design features on users' stickiness intentions as mediated by emotional response. *International Journal of Retail & Distribution Management*, 49(11), 1497-1511.
- Marzi, G., Balzano, M., Edigi, L., & Magrini, A. (2023). CLC Estimator: A tool for latent construct estimation via congeneric approaches in survey research. *Multivariate Behavioral Research*.
- McNamara, T. P. (2005). *Semantic priming: Perspectives from memory and word recognition*. New York: Psychology Press.
- Meyer, D. E., & Schvaneveldt, R. W. (1971). Facilitation in recognizing pairs of words: evidence of a dependence between retrieval operations. *Journal of Experimental Psychology*, 90 (2), 227.
- Minton, E. A., Cornwell, T. B., & Kahle, L. R. (2017). A theoretical review of consumer priming: Prospective theory, retrospective theory, and the affective–behavioral–cognitive model. *Journal of Consumer Behaviour*, 16(4), 309-321.

- Rohm, A. J., & Swaminathan, V. (2004). A typology of online shoppers based on shopping motivations. *Journal of Business Research*, 57(7), 748–757.
- Segal, S. J. (1966). Priming compared to recall: Following multiple exposures and delay. *Psychological Reports*, 18(2), 615–620.
- Sonderegger, A., & Sauer, J. (2010). The influence of design aesthetics in usability testing: Effects on user performance and perceived usability. *Applied Ergonomics*, 41(3), 403–410.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Wang, Y. J., Minor, M. S., & Wei, J. (2011). Aesthetics and the online shopping environment: Understanding consumer responses. *Journal of Retailing*, 87(1), 46–58.