Deceptive Patterns in Japan's Digital Landscape: Insights from User Experience

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Abstract. This study delves into the recognition and impact of deceptive patterns in Japan's digital environment, exploring how these manipulative design tactics influence user behavior and trust. Focusing on a Japanese context, the study investigates the role of demographic and psychological factors in detecting deceptive patterns and assesses their emotional and behavioral consequences on users. Findings reveal that higher awareness of deceptive patterns paradoxically does not enhance users' ability to identify or resist them. Instead, it indicates that knowledge alone is insufficient against such manipulative designs, highlighting a critical need for actionable understanding and strategies to combat these practices.

Keywords: Deceptive Patterns, User Behavior, Digital Ethics

1 Introduction

In the evolving realm of digital technology and human-computer interaction, the emergence of deceptive patterns, or dark patterns, has garnered widespread scrutiny. Coined by UX designer and cognitive scientist Harry Brignull in 2010, these design tactics are cleverly crafted by companies to sway user actions [2]. One example is a pre-ticked consent box that nudges users into unintended subscriptions. Such strategies are widespread across digital platforms, with evidence from studies in the U.S. [15] and the U.K. [21] highlighting their significant influence on consumer decisions.

While considerable attention has been paid to deceptive digital practices globally, there remains a critical need to explore these patterns within the context of Japan's unique digital culture [14]. Hence, this study seeks to address these two research questions:

RQ1: How do demographic and psychological factors influence Japanese users' recognition of deceptive patterns?

RQ2: How do these manipulative designs affect users' emotional responses, trust in digital platforms, and subsequent behavior?

By addressing these queries, the research endeavors to deepen our understanding of the influence of deceptive patterns on the user experience within Japan's unique digital ecosystem, ultimately informing the principles of digital ethics and user-focused design.

2 Literature Review

The term “deceptive patterns,” first coined by Harry Brignull in 2010, has sparked important conversations about the ethics of digital design. Gray et al. were among the first to categorize these questionable practices, identifying five main types [11]. Since then, further research, including Mathur et al.’s identification of 15 dark patterns on 53,000 product pages [16] and Gray et al.’s ontology of 65 dark patterns [10], has provided a deeper understanding of the classifications of such design tactics.

Governments and organizations worldwide are taking steps to protect consumers from these practices. The European Data Protection Board issued guidelines in 2022 [7], the U.S. Federal Trade Commission released policies in 2021 [8], and India set out consumer guidelines in 2023 [17]. While Japan lacks specific regulations for dark patterns, recent revisions to its Specified Commercial Transactions Law [3] and a ban on stealth marketing in 2023 [4], signal a move towards future regulation.

The conversation around deceptive patterns extends to their implications in the business sector and their impact on consumers. Narayanan et al. pointed out their widespread use in various business sectors, where they were employed to subtly influence user actions to boost sales and gather data [18]. This raises questions about where to draw the line between effective marketing and ethical practice.

From a consumer perspective, the initial concerns were raised by BJ Fogg regarding the exploitation of vulnerabilities through persuasive technologies [9]. Building on this, Di Geronimo et al. [6] and Bongard-Blanchy et al. [1] explored how demographic factors affect the detection of deceptive patterns and introduced the concept of “dark pattern blindness,” suggesting that repeated exposure to these manipulative strategies has made them seem like a normal part of online interfaces, leading to a decreased ability to identify when one is being subtly coerced or misled by design.

The existing literature on deceptive patterns highlights a growing concern over the ethical implications of digital design practices. While international initiatives are underway to address deceptive patterns, Japan represents a distinct digital landscape still unexplored in this context. This study aims to uncover how such patterns affect Japanese users, shedding light on the cultural nuances that shape interactions and trust in digital platforms.

3 Method

Our study employed a mixed-method approach, combining experimental design with demographic and psychological analyses, structured as follows:

1. Demographic Data Collection: We began by gathering participants’ demographic information, focusing on age, gender, and internet usage habits, to understand the diverse backgrounds of our sample.
2. Experimental Design: Utilizing a between-participants design, participants were exposed to eight different user interfaces—four featuring deceptive patterns (DPs) as identified by Brignull [2], such as Preselection, Confirmshaming, Hidden Cost, and

Fake Urgency, and four serving as controls without DP. The task involved identifying manipulative elements within those interfaces, with their accuracy scored. Additionally, participants rated the perceived manipulativeness of each interface on a 1-5 Likert scale.

3. Awareness and Experience with DPs: Initially, we assessed participants' awareness of DPs without providing a definition to ensure unbiased responses. After gauging their initial awareness, we introduced the concept of DPs. This was followed by inquiries into their experiences with DPs, including the frequency and contexts of encounters, and concluded with an examination of the emotional and behavioral impacts of DPs on participants, such as trust in companies using DPs and the likelihood of continued website engagement.
4. Psychological Assessment: The Ten Item Personality Inventory Japanese version (TIPI-J) by Oshio et al. [19], which is based on the original TIPI model by Gosling et al. [13], was employed to assess the Big Five personality traits. We also included questions on susceptibility to deception, adapted from materials by the Japanese Consumer Affairs Agency [5]—which would be classified as a gullibility tendency.

Data collection was facilitated through Qualtrics, which was chosen for its comprehensive survey administration features. Participant recruitment was conducted via Yahoo! Crowdsourcing to ensure a wide demographic reach within Japan. The survey was designed for completion within approximately 15 minutes to balance detailed data collection with participant convenience. Statistical analyses were be conducted using MATLAB (MathWorks) for its advanced numerical analysis capabilities.

4 Results

In our analysis of 353 valid responses, after excluding 24 due to duplication or incompleteness, we observed a diverse age distribution among participants, with the 45-54 age group being the most represented at 34.84% (n = 123). The majority of respondents were male (70.25%, n = 248), nearly half held a Bachelor's degree (49.29%, n = 174), and over half were employed full-time (54.39%, n = 192). A high level of technology proficiency was reported, with 61.47% (n = 217) considering themselves intermediate users, and the vast majority (98.02%, n = 346) using the internet daily, predominantly via smartphones (51.84%, n = 183).

The Big Five Personality Traits assessed through the TIPI-J score revealed mean values for Openness to Experience (3.79, SD = 1.33), Conscientiousness (3.79, SD = 1.33), Emotional Stability (3.94, SD = 1.31), Agreeableness (4.67, SD = 1.17), and Extraversion (3.48, SD = 1.26). Alongside, we measured gullibility tendencies adapted from the Japanese Consumer Affairs Agency, revealing varied susceptibility among participants to deceptive practices. Notably, a portion showed a predisposition towards influence by external endorsements: 13.60% were swayed by media-highlighted products, 13.03% by celebrity endorsements, and 19.83% by expert advice, underscoring the nuanced impact of these factors on vulnerability to deceptive patterns.

Influence of Demographic and Psychological Factors on Japanese Users' Recognition of Deceptive Patterns (RQ1). The dark pattern recognition scores, derived from participants' evaluations, quantified their ability to identify deceptive elements within user interfaces. Participants' score distributions is depicted in Figure 4.1. In evaluating the detection of deceptive patterns, we also applied Signal Detection Theory [12], which provided measures for sensitivity and bias. Sensitivity refers to the accuracy with which participants could distinguish between deceptive and non-deceptive interfaces (figure 4.2), while bias denotes the tendency to either overestimate or underestimate the frequency of deceptive patterns (figure 4.3).

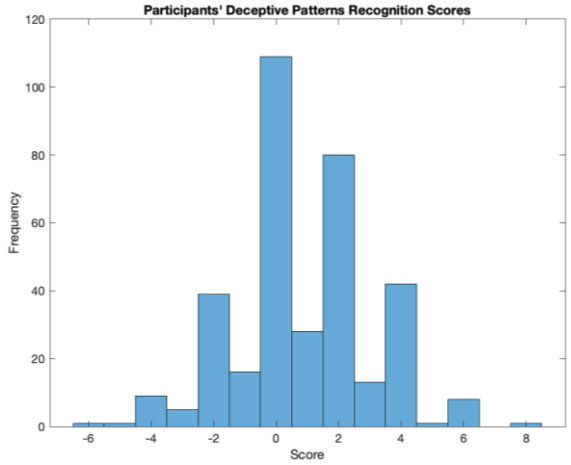

Fig. 4. 1.

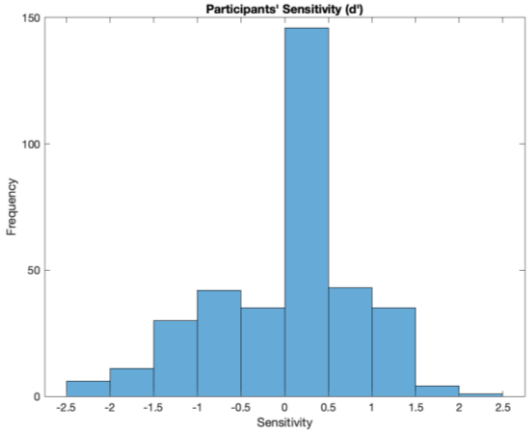

Fig. 4.2.

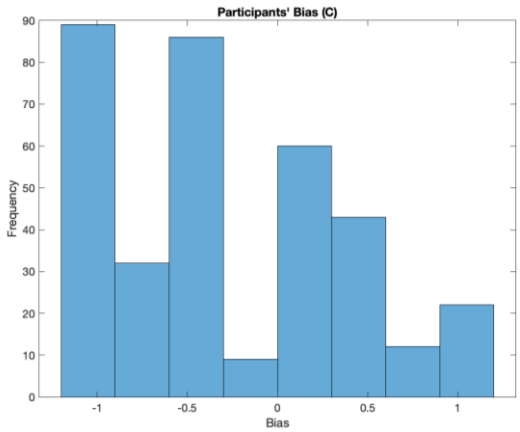

Fig.4.3.

As illustrated in Table 4.1, which encompasses the results with statistical significance ($p < 0.05$), our regression analysis unveiled key insights: Increased awareness of deceptive patterns negatively influenced recognition scores ($\beta = -0.34$, $p = 0.002$), suggesting that a higher consciousness of dark patterns does not necessarily enhance the ability to detect them. Moreover, participants who reported more frequent internet usage displayed a surprising increase in sensitivity ($\beta = 0.72$, $p = 0.019$), indicating that regular engagement with digital content could sharpen the ability to spot deceptive designs.

Conversely, the tendency to report deceptive patterns—bias—was found to vary with age, with older participants displaying greater bias ($\beta = 0.25$, $p = 0.003$). The inclination to trust celebrity endorsements (Tendency 2, $\beta = -0.74$, $p = 0.029$) and to be influenced by media-featured products (Tendency 1, $\beta = -0.24$, $p = 0.009$) were also significant factors, adversely affecting the accurate reporting of deceptive patterns. An interaction between age groups and extraversion further nuanced the understanding of bias ($\beta = -0.06$, $p = 0.010$), adding layers of complexity to how demographic and psychological factors interplay in the recognition of online deception.

Table 4.1. Significant Factors Influencing Recognition, Sensitivity, and Bias towards Deceptive Patterns

Metrics	Predictor	Coefficient	SE	t-Stat	p-value
Recognition Scores	Awareness	-0.34	0.11	-3.11	0.002
	Tendency 2	-0.74	0.34	-2.19	0.029
Sensitivity (d')	Awareness	-0.11	0.04	-2.79	0.006
	Internet Usage	0.72	0.31	2.36	0.019
Bias (C)	Age Groups	0.25	0.08	3.00	0.003
	Awareness	-0.09	0.03	-3.05	0.003
	Tendency 1	-0.24	0.09	-2.62	0.009
	Age Groups * Extraversion	-0.06	0.02	-2.60	0.010

Note: Tendency 2 is "I am tempted to buy products recommended by my favorite celebrities." Tendency 1 is "I am tempted to try a product that has been featured in the mass media."

Impact of Manipulative Designs on Emotional Responses, Trust, and Behavior in Digital Platform Users (RQ2). The participants reported encountering deceptive patterns with varying frequency, as depicted in Figure 4.4: *7.93% 'Very Often', 30.31% 'Somewhat Frequent', 43.91% 'Rare', and 17.85% 'Never'.*

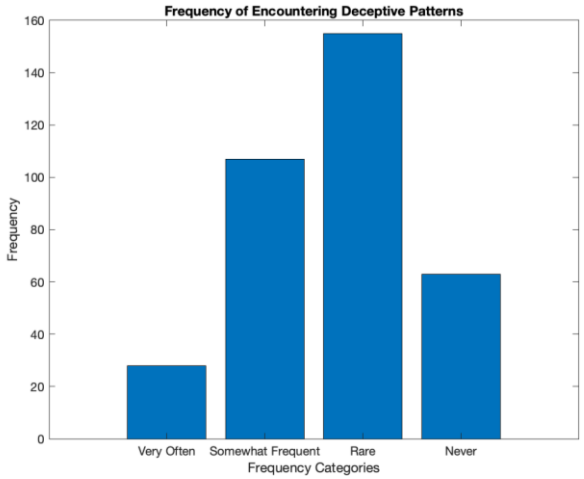

Fig. 4.4.

The locations of these encounters varied, with *'Subscription services' (20.80%), 'E-commerce sites' (13.82%), and 'Email marketing or promotional emails' (12.78%)* being the most common, as shown in Figure 4.5.

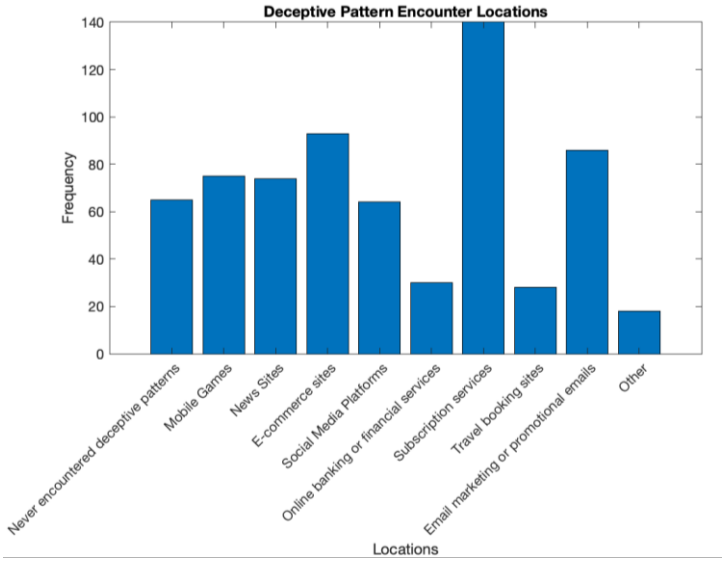

Fig. 4.5

The emotional responses to deceptive patterns (Figure 4.6) were predominantly negative, with *'Annoyed' (15.09%), 'Anxious' (14.15%), and 'Angry' (10.58%)* being the top emotions reported, indicating a significant emotional toll on users.

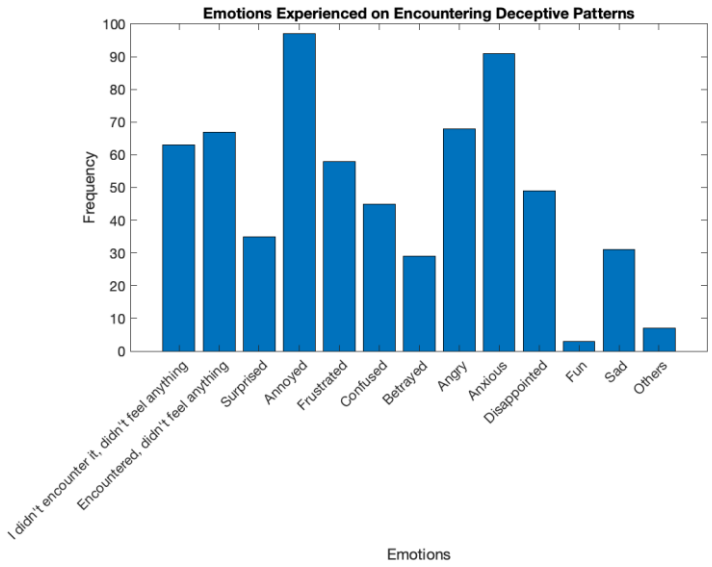

Fig. 4.6

This emotional impact translated into a considerable trust deficit towards digital platforms employing deceptive patterns, with *41.36% reporting a 'Decrease to some degree' in trust and 34.84% noting a 'Significantly lower' trust level*, as illustrated in Figure 4.7.

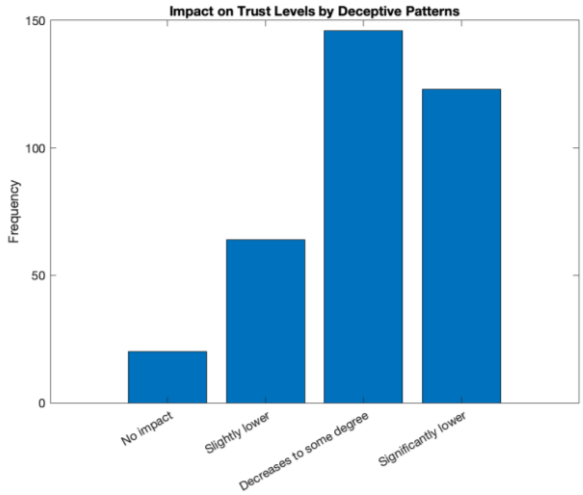

Fig. 4.7

Regarding the likelihood of discontinuing the use of digital services employing deceptive patterns (Figure 4.8), a significant portion of participants indicated *a high possibility (41.08%) or were very likely (17.56%) to stop using such services*.

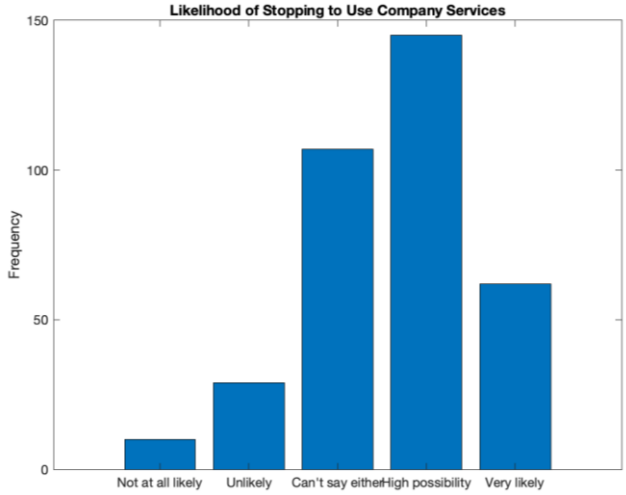

Fig. 4.8

Despite these negative sentiments, the reasons for continuing to use websites with deceptive patterns included *the need for necessary services (39.01%), familiarity and convenience (28.91%), and the absence of known alternatives (20.99%)*, as summarized in Figure 4.9.

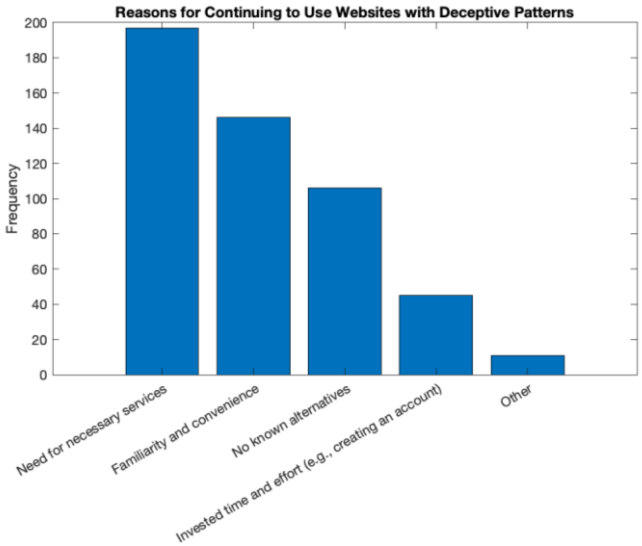

Fig. 4.9

These findings highlight the pervasive nature of deceptive patterns across digital platforms, their detrimental effect on user emotions and trust, and the complex decision-making process users undergo when contemplating the discontinuation of services that employ such manipulative designs.

5 Discussions

This research has unveiled that heightened awareness of dark patterns does not necessarily translate into better detection, a somewhat paradoxical discovery. The finding indicates that merely knowing about dark patterns is not sufficient to guard against them. Instead, it appears that increased familiarity with these tactics may lead to a form of complacency or overconfidence, thus reducing vigilance.

The results align with Bongard-Blanchy et al. [1], who posited that recognizing deceptive designs is not solely dependent on awareness. This suggests that current approaches to educate users about dark patterns might need to be revised to be more effective. Developing more interactive and engaging forms of education that simulate real-world scenarios could help individuals better identify and resist such patterns in practice.

In light of these findings, it becomes crucial to consider the specific context of the Japanese digital landscape. The strong emphasis Japanese consumers place on quality, sensitivity to social cues, and group dynamics [20], suggests that unethical digital practices could lead to a significant backlash, especially as understanding of deceptive patterns grows. This backdrop sets the stage for a broader discussion on the potential for regulatory measures to address deceptive patterns in Japan.

Building on these insights, future research should focus on creating transparent user engagement strategies that support user autonomy without compromising ethical standards. By integrating sustainable business practices with digital ethics, the goal is to foster a consumer-friendly digital environment that upholds ethical engagement and mutual respect.

6 Conclusion

The present study delved into the recognition and implications of deceptive patterns within Japan’s digital landscape, revealing that heightened awareness does not necessarily translate into an increased ability to detect deceptive designs. This underscores a disconnect between theoretical understanding and practical recognition skills, highlighting the need for education that goes beyond awareness to develop real-world discernment capabilities.

In a culture that highly values ethical practices, like that of Japan, these findings suggest that deceptive online tactics could prompt significant consumer pushback. This presents an opportunity for regulatory action to safeguard consumer interests, aligning with Japan's societal values of trust and community. Moving forward, the challenge lies in crafting initiatives that educate and enable users to navigate digital spaces critically,

enhancing transparency and reinforcing user autonomy. Our study contributes to a foundational understanding of the complex nature of dark patterns, setting the stage for the development of strategies that ensure digital environments are ethical and centered on user experience.

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