

Dark patterns in Romanian online retail: manipulative design and its impact on consumer trust

Ionut Tanase,
Lucia Nicoleta Barbu,
Daniela Marinica,
Denisa-Roxana Botea-Muntean*

Abstract

Our study investigates dark patterns (manipulative user interface designs) in Romanian e-commerce and their impact on consumer experiences. Analysing survey data from 70 Romanian consumers who have encountered such patterns in websites, we examined the occurrences of specific manipulative tactics, their consequences on purchasing behavior, and attitudes toward potential regulation. Our findings reveal that price manipulation (77.1%) and artificial urgency techniques (75.7%) are the most commonly experienced patterns among affected consumers. Significantly, 61.4% of respondents reported making regretted purchases due to dark pattern influence, with frequency of exposure correlating with increased vulnerability. These practices generate substantial negative emotional responses, with approximately 70% of consumers feeling annoyed, manipulated, or distrustful. Nearly half (47.1%) abandoned online stores due to manipulative practices, challenging assumptions about dark patterns' business value. With a strong support for regulation (81.4%) shows the need for better protection from these abusing tactics. We conclude that using dark patterns damage business sustainability by affecting customer relationships, suggesting that transparent and honest design practices may offer a more viable long-term approach to e-commerce websites.

Keywords: Dark patterns; E-commerce; Consumer manipulation; User interface design; Digital ethics; Consumer protection

JEL Classification: M31, L81, D18

1. Introduction

Our paper examines the usage of dark patterns in Romanian e-commerce websites, deceptive user interface designs that manipulate consumers into making

* Ionut Tanase is PhD student at Bucharest University of Economic Studies, Bucharest. Email address: ionut.tanase@mk.ase.ro

Lucia Nicoleta Barbu is PhD student at Bucharest University of Economic Studies, Bucharest. Email address: lucia.barbu@mk.ase.ro

Daniela Marinică is PhD student at Bucharest University of Economic Studies, Bucharest. E-mail address: daniela.marinica@mk.ase.ro

Denisa-Roxana Botea-Muntean is PhD student at Bucharest University of Economic Studies, Bucharest. Email address: munteandenisa21@stud.ase.ro

unintended choices. We created a survey and we gathered data from 70 Romanian consumers who have encountered these manipulative practices, we investigate the prevalence of specific dark pattern types, their impact on consumer behavior, and attitudes toward potential regulation. We found that price manipulation and artificial urgency tactics are the most commonly experienced dark patterns among affected consumers, with over 60% reporting regretted purchases. We demonstrate that dark patterns generate significant negative emotional responses and often lead to service abandonment, challenging assumptions about their business value. The paper is structured to first explain the concept of dark patterns in user interfaces, establish a methodological framework for studying dark patterns in the Romanian context, then present detailed results regarding consumer experiences, followed by a discussion of implications for multiple stakeholders, and concluding with recommendations for creating a more transparent and trustworthy online market. Our research contributes to the growing body of literature on manipulative design practices by providing insights specific to the Romanian e-commerce and highlighting the tension between short-term conversion optimization and sustainable business-consumer relationships.

2. Hypothesis

2.1. Definition

Dark patterns refer to deceptive or manipulative design elements in user interfaces that intentionally steer users toward actions they might not otherwise take, typically benefiting the service at the user's expense (Narayanan et. al., 2020). The term was created by UX designer **Harry Brignull** in 2010, who defined dark patterns as *"tricks used in websites and apps that make you do things that you didn't mean to, like buying or signing up for something."* (NLIU Law Review, 2023). Unlike legitimate persuasive design, dark patterns cross an ethical line by misleading or pressuring users. For example, a site might hide the "skip" button in a sign-up flow or pre-select add-ons, exploiting the fact that many users skim content and do not read every detail.

These interface tricks are carefully crafted to increase conversions – e.g. getting users to purchase costly add-ons or divulge personal data – by exploiting cognitive biases or user habits. In effect, dark patterns trade off user trust and clarity for short-term gains. Over the past decade, dark patterns have proliferated across online services and especially in e-commerce, leading to growing awareness and research into their prevalence and effects. A 2019 Princeton study of 11,000 shopping websites found dark patterns on approximately 11% of sites, encompassing

15 distinct tactics used to mislead consumers (NLIU Law Review, 2023). This indicates that manipulative design practices are not isolated incidents but rather a widespread phenomenon in online retail. In summary, dark patterns are an umbrella term for various deceptive UX strategies originating from Brignull's early "darkpatterns.org" initiative (now *deceptive.design*), and they continue to manipulate user behavior on many e-commerce platforms today.

2.2. Classification of dark patterns

Researchers have proposed taxonomies to classify dark patterns by their characteristics. Gray et al. (2018) identified five broad categories: *Nagging* (repeated intrusions or requests), *Obstruction* (making a process more difficult than necessary), *Sneaking* (hiding or adding things without user awareness), *Interface Interference* (manipulating the look or sequence of UI elements to influence choices), and *Forced Action* (requiring an unwanted action to access something) (Ghica & Gabor, 2024). Subsequent work and industry examples have expanded on these categories. In e-commerce contexts, several specific dark pattern types are particularly common such as:

- **False Urgency** – Creating a false time pressure to rush the user. For instance, fake countdown timers or flashing "Sale ends in 5 minutes!" banners push users to purchase quickly, even if the deadline simply resets afterwards. Similarly, messages about "Only 2 left in stock!" can be used even when inventory is not actually scarce. This tactic leverages fear of missing out to short-circuit rational deliberation. (European Commission, 2023)
- **Sneaking/Hidden Costs** – Concealing information or sneakily adding items. An example is *drip pricing*, where additional fees (taxes, shipping, insurance) only appear at checkout, or automatically adding extra products/ warranties to the cart without clear consent (Ghica & Gabor, 2024). Users may proceed under the impression of a lower price, only to encounter surprise charges at the final step.
- **Confirmshaming** – Guilt-tripping the user for declining an offer. This pattern presents an opt-out choice with shame-inducing phrasing. For example, a newsletter popup might have a bright "Yes, sign me up" button alongside a dimmer "No, I prefer to pay full price" link. The latter response is worded to make the user feel foolish for not accepting a discount.

Figure 1: Example of a confirmshaming dark pattern in an e-commerce signup pop-up. The offer promises 20% off for subscribing, while the decline option reads “Nah, I like paying full price,” shaming users who opt out. Such language uses social pressure and emotion (here, self-deprecation) to nudge users into compliance. Confirmshaming appears frequently in retail email sign-ups and subscription offers, coercing users by implying they are making an irrational choice by saying no.

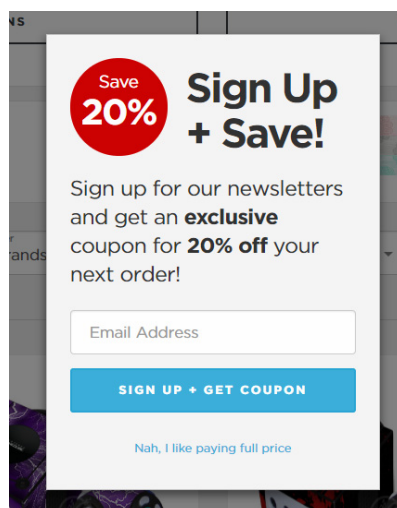


Figure 1: Example of a confirmshaming

This exemplifies how copywriting can be used as a dark pattern alongside visual design. Many other dark patterns exist (e.g. *Bait-and-Switch*, *Disguised Ads*, *Trick Questions*, etc.), but the key types above are frequently observed on shopping websites. Notably, these deceptive patterns are often combined. A single checkout flow might employ multiple dark patterns – for example, an overlay that uses false urgency (“Deal ends soon!”), social proof (“500 people viewing now”), and sneaky pre-ticked add-ons – all at once.

Such classifications help researchers and regulators systematically identify dark patterns. By naming and exemplifying them (as Brignull’s Dark Patterns library originally did), we can better recognize these tactics in the wild.

2.3. Impact on e-commerce

Dark patterns can indeed deliver short-term boosts in user metrics, such as higher sign-up rates, more items in carts, extra revenue from slipped-in fees, which is why some e-commerce operators resort to them. By manipulating consumers into purchases or consents they might not otherwise choose, dark patterns can artificially inflate conversion rates and average order values. For instance, a false urgency timer may spur indecisive shoppers to complete a purchase “before the deal expires,” thereby reducing cart abandonment in the immediate term. Similarly, pre-ticked add-ons will yield additional sales from those who fail to opt out. In the aggregate, these tactics can create an uptick in a site’s performance numbers. However, numerous studies and industry surveys indicate that the **long-term effects on consumer trust and business sustainability are overwhelmingly negative.**

Dark patterns often lead to consumer **regret and dissatisfaction**. A customer who was tricked into a costly warranty or a subscription they didn’t intend will

likely feel deceived once they notice the charge. This can result in refund requests, product returns, or costly customer support cases to undo the unintended transactions. More significantly, users who feel manipulated tend not to remain loyal customers. An international survey by Dovetail in 2023 (covering e-commerce and social media users) found that **nearly 56% of respondents had lost trust in a website or platform because of manipulative design patterns**, and **43% of online shoppers said they stopped buying from an online retailer after encountering dark patterns** (Williams, 2023)

2.4. Ethical and Legal Implications

The use of dark patterns raises serious **ethical concerns and legal questions**. At an ethical level, dark patterns violate principles of transparency, respect for user autonomy, and informed consent. They are designed to *benefit the business at the expense of the user*, often leading users to make choices against their own interests (such as spending more money or surrendering privacy). This erodes the fundamental trust between consumers and online services (Williams, 2023). When users eventually realize they were misled or coerced, for example, discovering an unwanted subscription or hidden fee, it can breed resentment and diminish their trust in the brand and in e-commerce generally. Dark patterns also disproportionately affect less experienced or more vulnerable users, who may be less aware of these tricks or less confident in navigating convoluted interfaces. From an ethical standpoint, many argue that employing such manipulative designs is **unprofessional and exploitative**, akin to tricking customers rather than serving them. Professional codes in design and software engineering emphasize honesty and user welfare, which dark patterns directly contravene (Mathur et. al., 2019).

Data protection and privacy law also come into play, since many dark patterns aim to obtain user consent for data sharing. The EU's **General Data Protection Regulation (GDPR)** requires that consent be informed, freely given, specific, and unambiguous. Interfaces that "nudge" users into consenting through dark patterns (for example, a confusing cookie banner that makes the "Accept All" button obvious but hides the opt-out) are considered invalid under GDPR. Recently, new legislation explicitly targets dark patterns. The **Digital Services Act (DSA)**, which came into force in 2024 across the EU, contains a provision (Article 25) that *bans online platforms from deploying dark patterns* that materially distort or impair users' ability to make free and informed decisions (European Commission, 2023). This means large e-commerce marketplaces and online platforms operating in the EU must refrain from deceptive interface designs or face regulatory penalties. The upcoming **Digital Markets Act (DMA)** similarly expects higher standards of user-friendly design from big "gatekeeper" firms, and the proposed EU AI Act would prohibit certain dark pattern-like manipulations in AI systems (Cooper, D. et al., 2023)

2. Methodology

This study employed a quantitative research design using a structured survey to investigate Romanian consumers' experiences with and perceptions of dark patterns in e-commerce environments. The research was designed to capture both the prevalence of specific dark pattern types and consumers' emotional and behavioral responses to these manipulative design practices. The survey instrument was developed based on established dark pattern taxonomies from the literature, particularly drawing on classifications by Gray et al. (2018) and examples documented by Brignull. The questionnaire consisted of six closed-ended questions focused on:

1. Types of dark patterns encountered
2. Frequency of dark pattern encounters
3. Purchase regret resulting from dark patterns
4. Emotional responses to dark patterns
5. Discontinuation of service use due to dark patterns
6. Attitudes toward potential regulation

The survey was intentionally kept brief to maximize completion rates while still capturing essential data points on consumer experiences and attitudes. The questionnaire was administered in English, which is widely understood among Romanian online consumers.

Participants were recruited through a combination of convenience and purposive sampling techniques. The survey was distributed through various online channels including social media platforms, consumer forums, and e-commerce-related groups. Inclusion criteria required participants to be Romanian residents aged 18 or older who had made at least one online purchase in the past year and who had encountered at least one dark pattern during their online shopping experiences. This selective sampling approach was intentionally employed to focus exclusively on consumers with direct experience of manipulative design practices. No demographic data was collected to keep the survey brief and focused on the research questions.

Data collection took place over a two-week period in February 2025. The survey was administered electronically using a secure web-based survey platform. Participants were informed about the purpose of the research and assured of the anonymity of their responses. A total of 70 valid responses were collected from consumers who had encountered at least one dark pattern. It is important to note that this sample represents only those consumers who have experienced dark patterns, not the entire population of Romanian online shoppers.

Survey responses were analyzed using descriptive statistics to identify patterns in consumer experiences and perceptions. For multiple-choice questions allowing multiple selections, each option was treated as a separate variable for frequency analysis. Cross-tabulations were performed to explore relationships

between frequency of dark pattern encounters, emotional responses, and attitudes toward regulation. The results were synthesized to provide a comprehensive understanding of dark pattern experiences among Romanian consumers who have encountered these practices. It is important to emphasize that the findings cannot be generalized to all Romanian online shoppers, as the study specifically targeted those with dark pattern experiences.

3. Results

It is important to note that all 70 respondents in this study have encountered at least one type of dark pattern during their online shopping experiences, we have filtered them from a broader database to focus only on the consumers that actually were aware of the existence of a dark pattern. Therefore, the results presented below represent the experiences and perspectives of Romanian consumers who have been exposed to dark patterns, rather than the general online shopping population.

3.1 Prevalence of Dark Pattern Types Among Affected Consumers

Table 1 presents the frequency of each dark pattern type encountered by respondents who have experienced at least one dark pattern. Among these affected consumers, additional fees appearing only at checkout emerged as the most commonly experienced dark pattern (77.1%), followed closely by countdown timers creating false urgency (75.7%) and messages about limited stock (72.9%).

Table 1: Types of Dark Patterns Encountered by Romanian Consumers

Dark Pattern Type	Number of Respondents	Percentage
Additional fees or costs appearing only at checkout	54	77.1%
Countdown timers creating urgency	53	75.7%
Messages about limited stock	51	72.9%
Difficulty finding how to unsubscribe or cancel a service	47	67.1%
Misleading language that tricks you into accepting something	41	58.6%
Pre-selected add-ons or extras in your cart	39	55.7%
Guilt-inducing language when declining offers	35	50.0%

The data indicates that price manipulation (additional fees) and urgency creation (countdown timers, limited stock messages) are the most prevalent dark patterns encountered by Romanian consumers who have experienced dark patterns, while confirmshaming techniques (guilt-inducing language) are relatively less common but still experienced by half of all respondents in this study.

3.2 Frequency of Dark Pattern Encounters

The frequency with which respondents encounter dark patterns is presented in Table 2. The majority of respondents (68.6%) reported encountering dark patterns either occasionally or frequently during their online shopping experiences.

Table 2: Frequency of Dark Pattern Encounters

Frequency	Number of Respondents	Percentage
Very frequently (almost every time I shop online)	15	21.4%
Frequently (most times I shop online)	18	25.7%
Occasionally (sometimes when I shop online)	30	42.9%
Rarely (only a few times)	7	10.0%
Total	70	100.0%

The results show that among Romanian consumers who have encountered dark patterns, nearly half (47.1%) encounter these practices frequently or very frequently, suggesting that for affected consumers, dark patterns are a recurring element of their e-commerce experience.

3.3 Purchase Regret Due to Dark Patterns

Table 3 shows the extent to which dark patterns have led to regretted purchases among respondents.

Table 3: Purchases Regretted Due to Dark Patterns

Experience with Regretted Purchases	Number of Respondents	Percentage
Yes, multiple times	13	18.6%
Yes, once or twice	30	42.9%
No, I've recognized the tactics and avoided unwanted purchases	27	38.6%
Total	70	100.0%

A majority of respondents (61.4%) reported having made at least one regretted purchase due to dark pattern tactics, indicating the effectiveness of these manipulative techniques in influencing consumer behavior against their better judgment.

3.4 Emotional Responses to Dark Patterns

Table 4 presents respondents' emotional reactions when encountering dark patterns during online shopping.

Table 4: Emotional Responses to Dark Patterns

Emotional Response	Number of Respondents	Percentage
Annoyed	52	74.3%
Manipulated	49	70.0%
Distrustful of the company	47	67.1%
Indifferent, it's normal business practice	20	28.6%
Understanding, they need to make sales	19	27.1%

The data reveals predominantly negative emotional responses to dark patterns, with feelings of annoyance, manipulation, and distrust being reported by more than two-thirds of respondents. Only a minority expressed indifference or understanding toward these practices.

3.5 Discontinuation of Service Due to Dark Patterns

Table 5 shows whether respondents have stopped using online stores due to encountering dark patterns.

Table 5: Discontinued Use of Online Stores Due to Dark Patterns

Discontinued Use	Number of Respondents	Percentage
Yes	33	47.1%
No	27	38.6%
Not sure	10	14.3%
Total	70	100.0%

Nearly half of the respondents (47.1%) reported having stopped using at least one online store because of dark patterns, indicating significant business risk for e-commerce operators employing these tactics.

4.6 Attitudes Toward Regulation of Dark Patterns

Table 6 presents respondents' views on whether dark patterns should be regulated.

Table 6: Attitudes Toward Regulation of Dark Patterns

Attitude Toward Regulation	Number of Respondents	Percentage
Yes, they should be strictly regulated	31	44.3%
Yes, but only the most deceptive practices	26	37.1%
No, companies should be free to design their websites as they wish	11	15.7%
No opinion	2	2.9%
Total	70	100.0%

A strong majority of respondents (81.4%) favored some form of regulation for dark patterns, with 44.3% supporting strict regulation of all such practices and 37.1% favoring regulation only for the most deceptive tactics.

The results reveal several important insights about Romanian consumers' experiences with dark patterns:

1. Among consumers who have encountered dark patterns, price manipulation and artificial urgency are the most commonly experienced tactics in the Romanian e-commerce landscape.
2. The majority of affected consumers (61.4%) have made at least one regretted purchase due to dark pattern influence, with this likelihood increasing among those who encounter dark patterns more frequently.
3. Dark patterns evoke predominantly negative emotional responses among affected consumers, with feelings of annoyance (74.3%), manipulation (70.0%), and distrust (67.1%) being most common.
4. Nearly half of affected consumers (47.1%) have stopped using at least one online store due to dark patterns, indicating potential business costs of these practices.
5. There is strong support for regulation of dark patterns among Romanian consumers who have experienced these practices, with 81.4% favoring some form of regulatory intervention.

4. Discussion

Our findings show a significant impact of dark patterns on Romanian consumers who encounter them. Among affected consumers, price manipulation (hidden fees reported by 77.1%) and urgency creation techniques (countdown timers 75.7%, limited stock messages 72.9%) are particularly prevalent, mirroring international trends identified in previous research. These patterns transcend cultural boundaries, suggesting their widespread adoption as standard industry practice.

The most troubling result is that over 60% of consumers who experienced dark patterns made purchases they later regretted, demonstrating how these techniques effectively override rational decision-making. We observed a correlation between frequency of dark pattern exposure and likelihood of regretted purchases, suggesting a "wearing down" effect where repeated exposure diminishes consumer resistance over time.

The emotional impact is substantial, with approximately 70% of affected consumers reporting feelings of annoyance, manipulation, and distrust. Notably, nearly half (47.1%) abandoned at least one online store due to these practices, challenging the business assumption that dark patterns necessarily benefit bottom

lines. While they may increase short-term conversions, they appear to exact a heavy price in customer retention and trust. Consumer support for regulation is strong, with 81.4% favoring some form of intervention. Interestingly, those who reported feeling manipulated were more inclined to favor strict regulation, suggesting that subjective experiences drive regulatory preferences more strongly than mere exposure to specific tactics.

From this perspective, the implications are on multiple levels, such as:

For consumers, education about dark patterns appears valuable, as 38.6% reported successfully recognizing and avoiding unwanted purchases despite encountering these tactics. However, the high prevalence of regretted purchases even in our sample suggests individual vigilance alone provides insufficient protection against sophisticated psychological manipulation.

For businesses, our findings present a compelling case against dark patterns. The high rate of service discontinuation contradicts assumptions about their long-term profitability. Romanian e-commerce businesses might differentiate themselves by rejecting these practices and embracing transparent design as consumer awareness grows.

For regulators, the strong consumer support suggests initiatives to restrict dark patterns would likely receive public backing. The differentiated support we observed—44.3% favoring strict regulation and 37.1% supporting regulation only of the most deceptive practices—suggests a nuanced approach targeting the most harmful tactics might achieve broader consensus.

Several limitations should be noted. Our study exclusively sampled consumers who had encountered at least one dark pattern, meaning we cannot determine overall prevalence among Romanian online shoppers. Self-reporting biases, lack of demographic analysis, and the study's cross-sectional design also limit our ability to establish causal relationships or generalize across different consumer segments.

Future research should quantify economic costs of dark patterns, explore vulnerability factors across demographic groups, track longitudinal effects, compare patterns across European markets, and evaluate regulatory effectiveness. Experimental studies testing different dark patterns and countermeasures could provide stronger causal evidence and inform intervention strategies.

5. Conclusion

Our research into the usage of dark patterns in Romanian e-commerce websites shows a complex landscape where manipulative design practices can significantly impact consumer experiences and behaviors. Among those who have encountered dark patterns, price manipulation and artificial urgency techniques emerge as particularly prevalent tactics, with over 70% of respondents reporting

exposure to these strategies. The emotional toll of these practices is important, generating feelings of annoyance, manipulation, and distrust which ultimately damage the relationship between consumers and online retailers.

Probably, the most concerning is the finding is that 61.4% of affected consumers made purchases they later regretted due to dark pattern influence, demonstrating these tactics' effectiveness in overriding consumer agency. The correlation we observed between frequency of dark pattern exposure and likelihood of regretted purchases points to a potential cumulative vulnerability effect that warrants attention from both consumer protection advocates and business ethicists alike.

Our findings challenge the conventional business wisdom that dark patterns necessarily benefit retailers' bottom lines. With nearly half of affected consumers abandoning online stores due to manipulative practices, the short-term conversion gains these tactics might deliver appear to come at a significant cost to customer retention and trust. Forward-thinking businesses might therefore consider transparent interface design as a competitive advantage rather than a limitation.

There is also strong support for regulation among affected consumers (81.4%) indicates a clear mandate for policy intervention in this space. Romanian regulators could draw upon existing EU frameworks while developing targeted approaches that address the dark patterns most commonly encountered and most harmful to consumers in the local market.

Though our study focused specifically on consumers who have already encountered dark patterns, limiting generalizability, it nonetheless provides valuable insights into the experiences of those affected by these practices in the Romanian context. As e-commerce continues to grow in significance for Romania's economy, addressing dark patterns becomes increasingly important for ensuring a marketplace that respects consumer autonomy and fosters trust.

Future efforts should focus on developing multi-faceted approaches that combine regulatory oversight, business practice evolution, and consumer education. By working toward more transparent and ethical digital interfaces, stakeholders can help create an e-commerce environment that balances business objectives with genuine consumer interests, ultimately creating more sustainable value for all participants in Romania's digital marketplace.

References

- Brignull, H. (2010) *Dark Patterns* (Original darkpatterns.org website). Definition available at Deceptive Design: <https://www.deceptive.design/> (Accessed 2025-03-18).
- Gray, C. M., Kou, Y., Battles, B., Hoggatt, J., & Toombs, A. (2018) 'The dark (patterns) side of UX design', *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, Paper 534, 1–14. ACM.

- Mathur, A., Acar, G., Friedman, M., Lucherini, E., Mayer, J., Chetty, M., & Narayanan, A. (2019) 'Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites', *Proceedings of the ACM on Human-Computer Interaction (CSCW)*, 3, pp. 1–32.
- Narayanan, A., Mathur, A., Chetty, M., & Kshirsagar, M. (2020) 'Dark Patterns: Past, Present, and Future', *Communications of the ACM*, 63(9), pp. 42–47.
- Luguri, J. & Strahilevitz, L. (2021) 'Shining a Light on Dark Patterns', *Journal of Legal Analysis*, 13(1), pp. 43–109.
- Williams, S. (2023) 'Study highlights consumer distrust due to dark design patterns', *CMOtech UK*, 15 December 2023.
- European Commission (2023) 'Consumer protection: manipulative practices in the online environment identified in 148 of 399 virtual stores', Press Release IP/23/418, 20 January 2023. Brussels: European Commission.
- Bondoc & Asociatii (Ghica, A. & Gabor, A.) (2024) 'Brightening the path for understanding certain dark patterns', *Lexology* (Company & Commercial, Romania), 4 July 2024.
- NLIU Law Review (2023) 'Beyond the Click: Unveiling the Psychology of Dark Patterns', *NLIU Law Review Blog*, October 2023.
- Covington & Burling LLP (Cooper, D. et al.) (2023) 'The EU Stance on Dark Patterns', *Inside Privacy* blog, 31 January 2023.