

Dark Patterns awareness and its influence on consumer purchasing intentions in the Czech Republic

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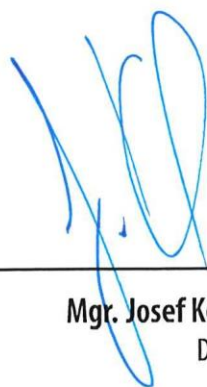
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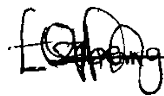
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ABSTRAKT

Cílem diplomové práce je prozkoumat povědomí o dark patterns a jejich vliv na nákupní chování spotřebitelů v České republice. Práce je rozdělena do čtyř částí: teoretické, metodické, analytické a návrhové. V teoretické části jsou provedena rešerše relevantní literatury s cílem vysvětlit všechny klíčové aspekty dark patterns pro plné pochopení výsledků výzkumu. Metodická část podrobněji vysvětluje nástroje, které byly pro výzkum použity, a také přístupy použité při sběru dat a analýze. Analytická část předkládá analýzu shromážděných údajů, za účelem dosažení cíle práce. V závěru, v projektové části je navržen plán projektu zaměřený na vytvoření kampaně na podporu a zvyšování povědomí o dark patterns v České republice.

Klíčová slova: Dark patterns, reference, časovač odpočítávání, zprávy o nízkých zásobách, záměry nákupu online

ABSTRACT

The aim of the thesis is to explore dark patterns awareness and its influence on consumer purchasing inclinations in the Czech Republic. The thesis is divided into four sections: theoretical, methodology, analytical, and project proposal. The theoretical part reviews the relevant literature to explain all the key aspects of dark patterns to fully understand the findings of the research. The methodology section gives a more detailed explanation of the tools that are used, as well as the approaches used in collecting data and analysis. The analytical part gives a thorough analysis of the data collected for this research to achieve the goal of the thesis. Finally, the project part proposes a project plan targeted at developing a call-to-action advocacy and awareness campaign of dark patterns in the Czech Republic.

Keywords: Dark Patterns, Testimonials, Countdown timers, Low stock messages, Online purchase intentions

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INTRODUCTION

Digital or online marketing is becoming an integral part of everyday life. As a result, many decisions are made online today. The primary objective of online marketing is to attract consumers and provide them with a means of interacting with businesses online. Maier (2019) asserts that, along with the rise of websites and mobile apps, there is also a rise in the number of persuasive strategies used to influence the actions of people online. Lupianez-Villanueva et al., (2022) state that in today's digital world, businesses are increasingly resorting to a wide variety of manipulative strategies to attract consumers into making choices that aren't always in their best interests. Online businesses generally employ deceptive strategies (commonly known as "dark patterns") to persuade consumers to buy items and subscriptions, stay on the website longer, or unknowingly consent to the collecting of their personal information (Bongard-Blanchy, et al., 2021)

Dark patterns are “*user interfaces that make it difficult for users to express their actual preferences or that manipulate users into taking actions that do not comport with their preferences or expectations*”.¹ Dark patterns utilise user interfaces to manipulate or trick consumers into making decisions that may not reflect their actual preferences (Chugh & Jain, 2021; Mathur et al., 2019; Voigt et al., (2021). In addition, dark patterns are commonly used as part of the user interface design of online stores, and they are built in websites, social media, and applications to exploit cognitive bias and mislead users (Kim et al., 2021).

It has become very common for online stores to try to get people to sign up for recurring subscriptions, buy more than they planned, or give them more information than usual (Mathur et al., 2019; Lahoti, 2019). According to Voigt et al., (2021), online shopping websites commonly employ these deceptive strategies to boost their potential clientele, sales, and brand awareness. Kim et al., (2021) argue that dark patterns have always existed and are not exclusive to online marketplaces. Also, they note that in an offline setting, deception manifests itself through misleading claims, dishonesty, and the exaggeration of a product's qualities and benefits. Even though dark patterns are usually successful, they clearly restrict user satisfaction (Voigt et al., 2021). However according to Mathur et al. (2019) and Lahoti (2019), misleading consumers into taking risky or undesirable actions can sometimes lead to significant economic

¹ Stigler Committee on Digital Platforms, Final Report, Stigler Committee, available at <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en>, last seen on 23/12/2020

loss. Business-to-customer methods like deceptive personalisation and dark patterns may damage consumer trust in digital marketplaces (Lupianez-Villanueva et al., 2022)

As a result of the growing number of electronic channels of communication, there is a greater likelihood than ever before that dark patterns will have a considerable impact on the purchase decisions of consumers. Many people are familiar with these digital marketing methods and have come across them before, as reported by Luguri, & Strahilevitz (2021), yet most consumers are not sure how to call them.

The Stigler Committee on Digital Platforms (2019) argues that utilising interfaces or promotions to help sell a product is not illegal, but doing so in a highly manipulative manner might be, since these corporations actively manipulate consumers into purchasing things and services they ultimately do not want. Dark patterns are widely used by traders of all sizes, not just on the largest platforms, as stated by Lupianez-Villanueva et al., (2022). Thus, the term "dark pattern" is well-known to several experts in the field. Yet, there have been few studies on this subject, and more academic study is needed to bring it to the attention of the public (Cara, 2019). Considering this, the thesis is aimed at investigating dark patterns awareness and its impact on consumer purchase intentions specifically in the Czech Republic.

The thesis aims to shed additional insight on dark patterns awareness among consumers in the Czech Republic. Yet, this thesis will analyse how dark patterns influence consumers' online purchasing decisions. In this thesis, three categories of dark patterns will be examined: scarcity, urgency, and social proof. The results obtained from this thesis will provide valuable information for future research and significantly contribute to the body of knowledge regarding dark patterns. Lastly, based on theoretical and analysis of data, a dark patterns awareness plan will be launched in the Czech Republic to raise awareness of dark patterns.

I - THEORETICAL PART

THEORETICAL BACKGROUND

This section presents the theoretical concepts related to this thesis. The chapter will review relevant literature to deeply understand the findings and explain all the core aspects of dark patterns. Additionally, more focus will be made on the definitions and clarifications of key concepts, categories of dark patterns, legal framework and among others.

1. General understanding of Dark Patterns

According to the OECD (2021), research and investigations show that "dark patterns" are becoming more prevalent online. Though, it has been applied in a range of internet commercial practises, Mathur et al., (2021) denote that there is not yet an established or accepted definition of the term. OECD (2022) further remarks that, it is difficult to come up with a description of "dark patterns" that is generally recognised since there are so many various types of behaviours that are referred to as such and varying opinions on which behaviours should be categorised as dark patterns. Harry Brignull, who is well recognised for his commitment to raising awareness of unethical user experience, first used the term "dark patterns" in 2010 (Mathur et al., 2021; Ekroth & Sandqvist, 2020).²Brignull (2018) described 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."* Brignull's study initiated an era of academic research on dark patterns.

Law (2016) defines dark patterns are components on a website that intentionally utilise deceptive strategies to benefit the website owner at the expense of the user. Mathur et al., (2021) also add that dark patterns are user interface techniques that promote an online business by influencing users to make decisions they would not have made otherwise.

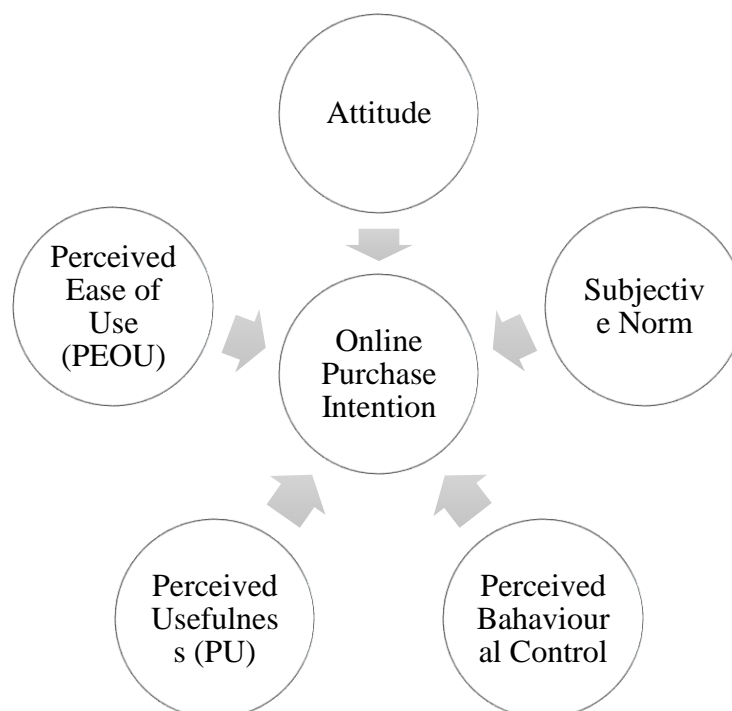
The OECD (2022) offers the following working definition to help regulators and policymakers across jurisdictions address such practises: *"Dark commercial patterns are business practices employing elements of digital choice architecture, in online user interfaces, that subvert or impair consumer autonomy, decision-making or choice. They often deceive, coerce or manipulate consumers and are likely to cause direct or indirect consumer detriment in various ways, though it may be difficult or impossible to measure such detriment in many instances.* However, most definitions of "dark patterns," include terms like "steer," "influence," "deceive," "coerce," and "manipulate" to get people to do something that isn't in their best interests.

² Harry Brignull. 2018. Dark Patterns. <https://darkpatterns.org/>.

2. Online Purchase Intentions

The internet has now become a platform that enables people of all ages to seek for information and interact socially with one another. The widespread usage of the internet today has made it possible for consumers and sellers to conduct transactions online. Online stores frequently describe products in text and high-resolution photos, giving consumers more information than in physical stores (Ahmad et.al., 2022). As online shopping has grown so popular, most researchers are now interested in analysing consumers' intentions of making purchases online. According to Pavlou (2003 as cited in Peña-García, 2020) the term "online purchase intention" refers to the degree to which a consumer is willing to make a purchase of a good or service from an online marketplace. This, however, fits into the general definition of purchase intentions described by Spears & Singh (2004) as peoples' deliberate choice to attempt to purchase a certain brand. Dodd & Supa (2011) further state that the concept of purchase intention is psychological in nature and is widely employed in behavioural research. The process of a consumer making a purchase decision is complicated, and it is typically connected to the consumer's behaviour, perceptions, and attitudes (Akbariyeh et al, 2015). Furthermore, they believe that factors such as price or perceived quality and value might alter consumers' intention of making a purchase. Kotler & Armstrong (2010) suggest six steps before buying a product: awareness, knowledge, interest, preference, persuasion, and purchase. Day (1969) as cited by Meskaran et al., (2013) establish that intentional measures are more successful than behavioural measures in changing consumers' attitudes because they may buy because of limitations rather than preference. Moreover, Hibbeln et al., (2017) contend that negative emotions experienced when browsing might also have a negative effect on purchasing intentions or loyalty. Meskaran et al. (2013) summarise online purchase intention based on three basic theories: Technology Acceptance Model (TRA), Theory of Planned Behaviour (TPB), and Theory of Reasoned Action (TAM) (see Figure 1)

Figure 1: Influencing factors on online purchase intention based on three main theories (TRA, TPB and TAM)



Source: Adapted from Meskaran, F., Ismail, Z., & Shanmugam, B. (2013). Online purchase intention: Effects of trust and security perception. Australian journal of basic and applied sciences, 7(6), 307-315.

From Figure 1, Attitudes, according to Fazio (1995), are a memory interaction between a given item and a summary evaluation of this item. As the evaluation can be based on personal judgment, the outcome may either be positive or negative (Eagly & Chaiken, 1993). Ajzen (1985) posits that an individual's attitude towards a behaviour serves as a direct predictor of whether that individual would engage in that behaviour. Furthermore, subjective norms, which can be understood as the individual's perception of social pressure to engage in a specific behaviour, and perceived behavioural control, which refers to the individual's perception of the ease with which they can engage in a behaviour, are two additional important factors that affect online purchase intention. In addition, an individual's actual conduct is heavily influenced by the individual's own behavioural purpose and perceived behavioural control (Di Virgilio & Antonelli, 2018). According to Chen et al., (2020), perceived ease of use is an individual's belief in a product's capability to be easy to use and Perceived usefulness is the degree to which a person feels that using a given system would enhance his or her performance (Davis et al., 1989 as cited by Di Virgilio & Antonelli, 2018). Compared to perceived ease of use, perceived usefulness has a far greater influence on consumer attitudes towards their purchase intentions

(Di Pietro et al. 2013) In general, these factors are used to gain awareness into the connections between consumers' attitudes and their intentions during the online purchase process (Meskaran et al., 2013)

3. Dark Patterns

3.1 Dark Patterns in Online Shopping

Dark patterns come in a variety of forms and sizes. Consumers may encounter dark patterns in a wide variety of online settings, such as when deciding whether to disclose personal information (Bösch et al., 2016) or to accept cookies (Nordberg et al., 2020), while using services and applications like games (Zagal et al., 2013) or content feeds that aim to capture and extend consumer attention and time spent, and in e-commerce (Luguri & Strahilevitz, 2021), including the various stages of consumers' purchasing process. Dark patterns can start with the advertising of a product or service and continue through the whole consumer purchasing process, including sign-up, purchase, and cancellation (Centre for Information Technology Policy (CITP), 2022). Internet platforms and traders continuously feed data into machine learning algorithms to develop and optimize prompts that benefit them but may harm consumers (Lupianez-Villanueva et al., 2022). CITP (2022) identified two categories of dark patterns that impact consumers' choice architecture. In the first category are interfaces that change the choices that consumers have. The second category is made up of interfaces that modify the information that consumers can see. Dark patterns are effective because they exploit the cognitive and behavioural shortcuts (heuristics and biases) that consumers use when making decisions, irrespective of the interface in which they occur (OECD, 2022).

Considering the broader definition of dark patterns, the following sections will first categorise dark patterns in online shopping into a taxonomy table. Following that, each dark pattern will be further examined by category and the underlying psychological impact it exploits.

3.2. Taxonomy table

Given the growing variety of examples of dark patterns, much of the early academic work on them focused on collecting examples and classifying them through taxonomies (Luguri and Strahilevitz, 2021; Bösch et al., 2016; Gray et al., 2018; Mathur et al., 2019). The table below provides a non-exhaustive list of categories that have emerged from the literature and are mostly related to dark patterns found on websites and mobile apps³

³ Mathur et al., (2019) however defines the following terms as follows:

1. Anchoring Effect: The tendency for people to make decisions based on the first piece of information they get.
2. Bandwagon Effect: People's tendency to value or believe in something more strongly just because other people do.
3. Default Effect: The tendency for consumers to accept default selections.

Table 1: Taxonomy of dark patterns with their description, definition, and cognitive biases they exploit.

Category	Type	Description	Cognitive Bias	Source
Urgency	Countdown Timers	Indicates a deadline for a deal or discount, counting down until that deadline is reached.	Scarcity bias	Mathur et al. (2019)
	Limited-time Messages	Indicates there is limited time left for a deal or discount, without specifying the deadline.	Scarcity bias	Mathur et al. (2019)
Sneaking	Sneak into Basket	Adding additional items to the online shopping cart without consent.	Default effect	Brignull n.d.; Gray et al. (2018)
	Hidden costs	Introducing additional costs, often later in the checkout process.	Sunk fallacy. cognitive bias	Brignull n.d.; Gray et al. (2018); Mathur et al. (2019)
	Hidden subscription/ Forced Continuity	A follow-up on a free trial, charging credit cards without any warnings to the users.	Default effect	Brignull n.d.; Gray et al. (2018); Mathur et al. (2019)
Scarcity	Low stock Messages	Signals to the user about limited product quantities.	Scarcity bias	Mathur et al. (2019)
	High-demand Messages	Signals to the user that a product is in high demand, implying the likelihood of selling out.	Scarcity bias	Mathur et al. (2019)
Social Proof	Activity Messages	Attention-grabbing messages that appears on product pages indicating other user-activities	Bandwagon effect	Mathur et al. (2019)
	Testimonials	Statements from other consumers regarding a product, which may be misleading or false	Bandwagon effect	Mathur et al. (2019)
Obstruction	Hard to cancel	Making it easy to sign up for a service but hard to cancel	Restrictive effect	Brignull, n.d.; Mathur et al. (2019)
Misdirection	Trick questions	Intentional or obvious ambiguity (e.g. double negatives)	Default and framing effect	Mathur et al. (2019)
	Pressured Selling	High-pressure tactics that steer users into purchasing a more expensive variant of a product.	Anchoring, Default effect, and Scarcity bias	Mathur et al. (2019)
	Toying with Emotion/Con firm shaming	Any language, style, color, or other elements to evoke emotion, to persuade the user into a particular action.	Emotion bias	Gray et al. (2018)

Source: Adopted from Tiemessen, J. H. (2022). *The Time is Ticking: The Effect of Deceptive Countdown Timers on Consumers' Buying Behaviour and Experience.*

4. Framing Effect: The tendency of people to pick various alternatives with the same information but presented differently.
5. Scarcity Bias: Users' tendency to place a higher value on scarce items.
6. Sunk Cost Fallacy: A user's propensity to continue an action since they have already spent time or other resources. Users tend to persist even if their action has the potential to worsen their situation.

3.3. Categories and types of Dark Patterns

This section provides an in-depth explanation, along with examples, for all the Dark patterns categories and types that are outlined in Table 1.

3.3.1 Urgency

By exploiting the scarcity bias that consumers have, dark patterns from this category help speed up the decision-making process for users (Aggarwal & Vaidyanathan, 2015). Urgency dark patterns make use of the phenomenon known as the scarcity bias in which the value of a product rises as a direct result of the limited availability of that product. The underlying idea is that if there is a limited time remaining for a sale or offer, it becomes more desired. Also, Mathur et al., (2019) report that urgency dark patterns create a strong "fear of missing out." In addition, they stated that when combined with 'Social Proof' and 'Scarcity' dark patterns, these dark patterns maximise the "fear of missing out." effect. Mathur et al., (2019) identified two different kinds of urgency dark patterns: Countdown timers and Limited time messages.

Countdown timers

The "Countdown Timer" is a dark pattern that shows when a special offer ends. It does this by showing how many days are left until the end of the offer. Figure 2 shows a countdown timer on Aliexpress.

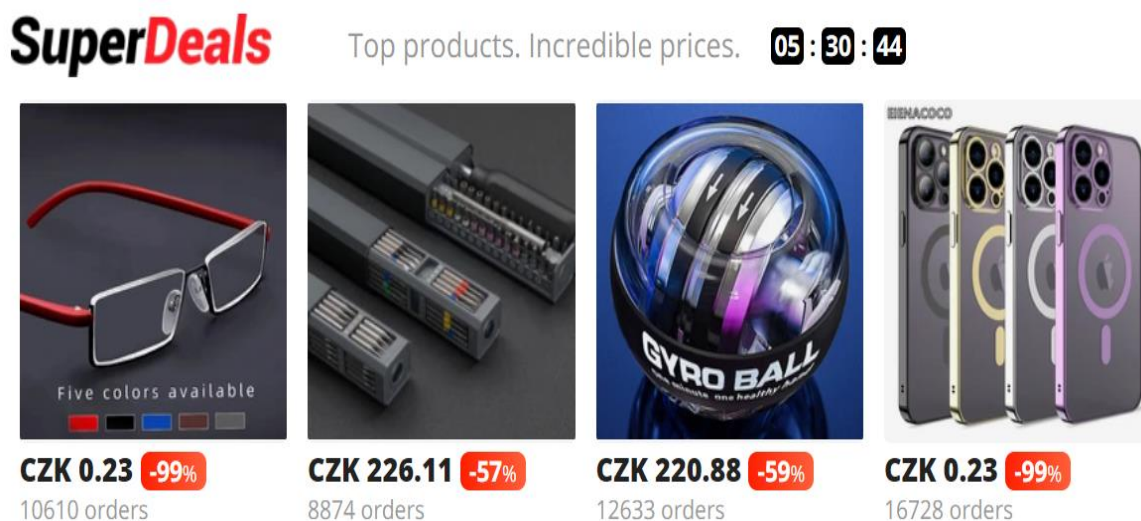


Figure 2 - Countdown timer on aliexpress.com showing 'SuperDeals' that expire after the timer expires. (Source- AliExpress.com n.d.)

Countdown timers can either be "regular" (as shown above) or "deceptive" (Mathur et al., 2019). The deceptive countdown timer shows a deadline for a special deal but does not expire. Throughout the rest of our thesis, more focus will be on deceptive countdown timers, which is

considered a dark pattern. According to Tiemessen (2022), a regular countdown timer might help a potential buyer choose a product.

Limited Time messages

"Limited-time Messages" are urgency dark patterns which have no deadline, unlike "Countdown timers," this dark pattern indicates static urgency messages. Limited time messages are prevalent in most websites. Luguri & Strahilevitz, (2021) posit that this dark pattern is known for playing with feelings of consumers and hiding information. Two types of limited time messages are shown in Figures 3 and 4, with an example of the offer deadline shown in Figure 4.

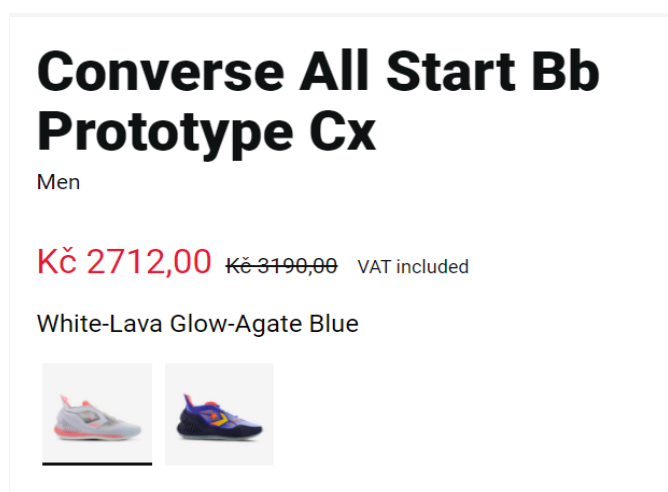


Figure 3 – Limited time message on [footlocker.cz](https://www.footlocker.cz) showing a discount with no indication of when the offer will expire. (Source- [footlocker.cz](https://www.footlocker.cz), n.d.)



Figure 4: Limited time message on [wrobu.cz](https://www.wrobu.cz) showing a discount with an indication of when the offer will expire. (Source- [wrobu.cz](https://www.wrobu.cz), n.d.)



3.3.2 Sneaking

This category of dark pattern conceals, disguises, or delays user-relevant information. Users may likely modify their decision if they realized this. This category has three dark patterns: Sneak into Basket, Hidden Charges, and Hidden Subscriptions.

Sneak into basket

The term "sneak into basket" or expanding shopping cart describes the practice of putting additional items to an online shopper's cart without their knowledge (Cara,2020). An additional year of warranty, insurance, or a gift card are all typical examples. Users could be unaware of the reality that these dark patterns increase the total price. Sneak into basket exploits the 'default effect' cognitive bias. According to the Interactive Design Foundation (n.d), the European Commission illegalized this design pattern under the consumer rights regulation, and often, this dark pattern has been replaced by suggestions of products that a customer might be interested in. Figure 5 shows an example captured on sportsdirect.com by Babich (2019). He further indicates that Sports Direct used to automatically add a Value Magazine and a "free" big mug to every online order for an extra £1. Petr (2022) cites Alza, the largest Czech e-commerce website, as an example of using this dark pattern in 2018. Once the customer added a power bank to his cart, the website automatically added a charger. According to Alza.cz, consumers may require these additional purchases since they cannot use the purchased items without them.

The screenshot shows the Sports Direct website interface. At the top, there is a navigation bar with categories: Mens, Ladies, Kids, Football Shirts, Accessories, Sports, Brands, and Clearance. Below the navigation bar are three promotional banners for socks: 'PACK OF 10 CLASSIC SOCKS 10 PAIRS' for £4.00, 'PACK OF 10 TRAINER SOCKS 10 PAIRS' for £3.49, and 'PACK OF 12 SOCKS 12 PAIRS' for £3.49. Below the banners is the 'My Bag' section. It contains a table with the following items:

Product details	Quantity	Unit price	Total
 adidas Duramo Elite Ladies Running Shoes Colour Blk/Wh/SalPnk Size 5 (38)	<input type="text" value="1"/> - +	£19.00	£19.00
 SportsDirect Fantastic Value Magazine and Free Giant Mug (Go to Your Basket to remove) Colour - Size N	<input type="text" value="1"/> - +	£1.00	£1.00

Below the table, there is a 'Clear bag' link and an 'Update bag' button. The sub total is £20.00. At the bottom, there are 'Continue shopping' and 'Secure checkout' buttons.

Figure 5: Sneaking into basket on Sportsdirect.com (Source-Babich, 2019)

Hidden cost

This dark pattern adds additional expenses, generally at the end of the purchase process (Gray et al., 2018). Additional service fees, taxes and handling fees are typical instances of this kind of dark pattern. This dark pattern exploits the sunk fallacy cognitive bias and hides information from the customer to make an informed decision. Figures 6 and 7 show an example of a hidden cost dark pattern.

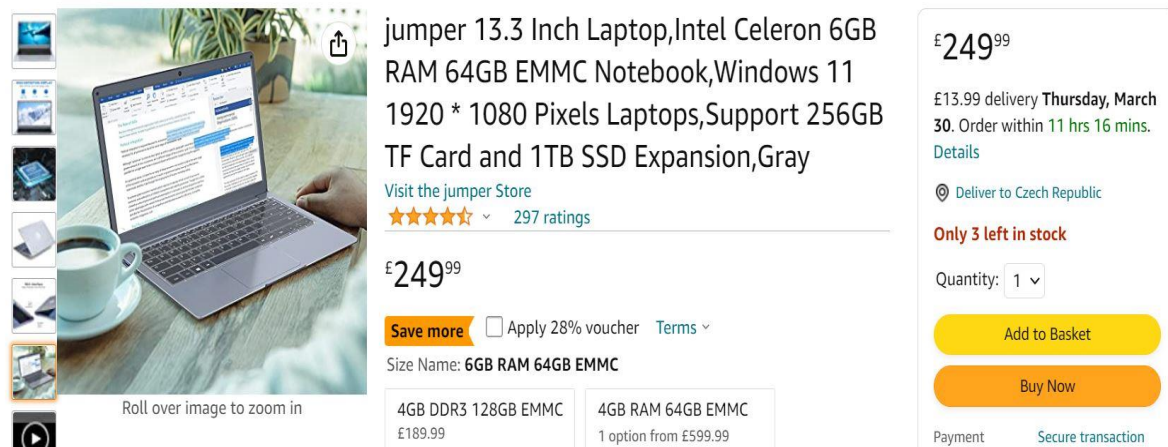


Figure 6: Hidden cost prior to adding item to cart (Source-Amazon.uk, n.d)

Order Summary	
Items:	EUR 286,08
Postage & Packing:	EUR 16,01
Import Fees Deposit:	EUR 63,44
Exchange rate guarantee fee: <input type="checkbox"/>	EUR 7,77
Order Total:	EUR 373,30

Figure 7: Summary of all Hidden cost during the checkout process (Source-Amazon.uk, n.d)

Hidden subscription/ forced continuity

Hidden Subscription/Forced Continuity is a dark pattern that commonly follows a free trial and charges consumers payment cards without any notification (Brignull, n.d.; Gray et al.,2018; Mathur et al.,2019). Moreover, most of these hidden subscriptions are difficult to cancel, but

signing up for these subscriptions is a lot simpler than cancelling them. Hidden Subscription and Forced Continuity use the default effect to benefit sellers at the expense of consumers who do not cancel their subscriptions, according to Mathur et al., (2019). According to Vinney (2021), this strategy is utilised by streaming platforms like Netflix, Hulu, and DisneyPlus, but it is also typical of other services that provide free trials. An example is cited by Petr (2022) when Alza.cz used a Hidden Subscription in 2016. Alza offered 30 free VIP days. If consumers did not cancel their membership after 30 days, Alza presumed they wanted to keep paying the charge.

3.3.3 Scarcity

In an increasingly competitive online market, firms use numerous persuasive methods to keep consumers on their commercial websites and encourage transactions (Friedrich & Figl, 2018). The use of scarcity signals' is a well-known and widely used persuasion technique (Jang et al., 2015). In general, scarcity cues refer to the indication of a product's limited availability. Scarcity signals work because people tend to think that something that is scarce has a higher value and desirability than something that is readily in abundance (Gierl & Huettl, 2010). Mathur et al., (2019) observed two scarcity-related dark patterns: Low stock messages and high-demand messages.

Low stock messages

Users are made aware of the limited quantity of a product by the 'Low-stock Message' dark pattern. As a result, consumers are urged to act more quickly than they would under normal circumstances to avoid missing out on the opportunity to purchase the product (Petr,2022). Low-stock messages are sometimes put into two groups: "regular" and "deceptive." Regular low-stock messages are accurate and show how much stock is left. Conversely, deceptive low-stock messages are random or permanent low-stock messages, a behaviour that is mostly classified as a dark pattern. This deceptive tactic exploits the scarcity bias of consumers by increasing the value of things just because they are in scarce supply. The Figure 8 below shows low stock messages on Lekarna.cz website.

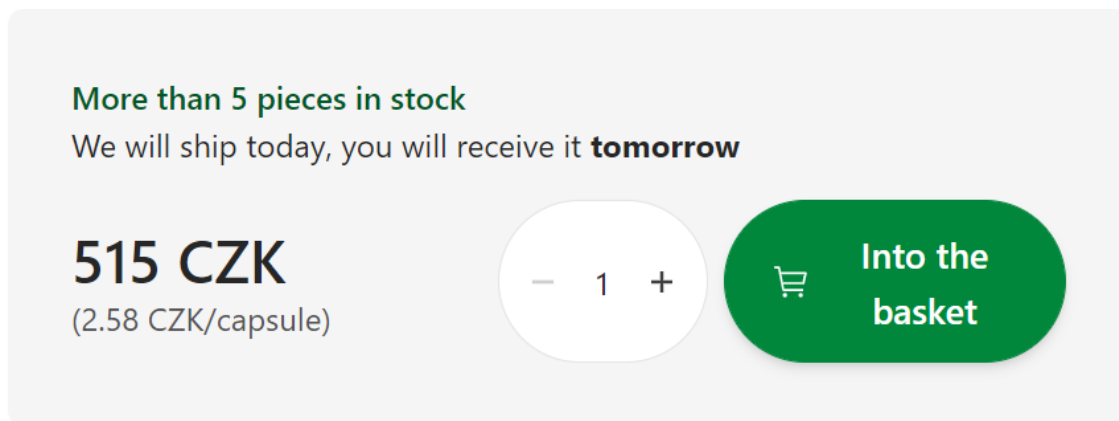


Figure 8: low stock messages on Lekarna.cz (Source- Lekarna.cz, n.d).

High demand messages

High-demand messages are a dark pattern that alerts the user that a product is in high demand, indicating that there is a high likelihood that the product will be sold out (Mathur et al., 2019). By employing this dark pattern, sellers have the intention of speeding up the purchase decisions of consumers who are still uncertain (Tiemessen, 2022). Again, high-demand messages can be legitimate or deceptive, with deceptive high-demand messages continuously displaying the signal of high demand irrespective of the goods featured on the website (See Figure 9)

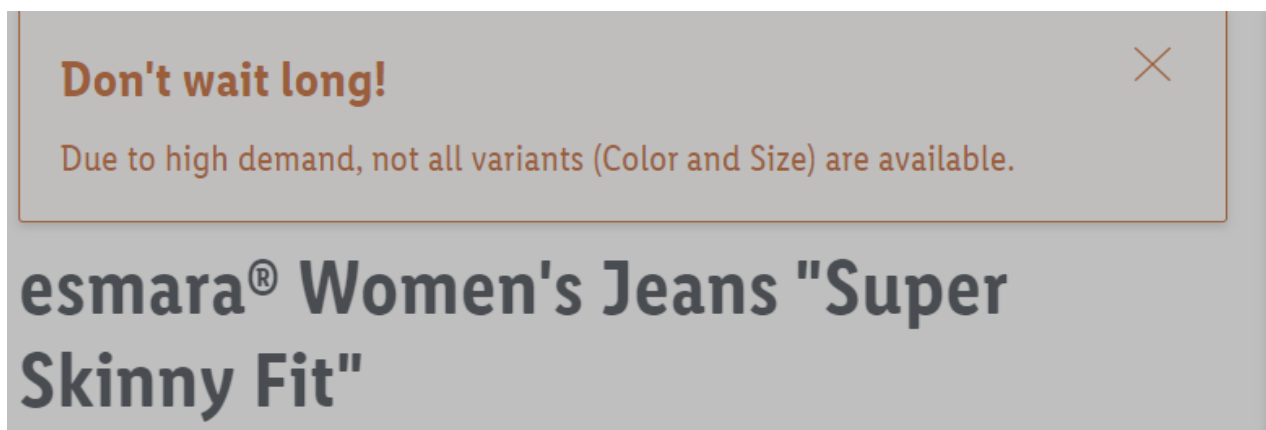


Figure 9: High Demand messages on Lidl.cz (Source- Lidl.cz, n.d).

3.3.4 Social Proof

Social Proof are dark patterns in which users assess their actions by observing the action of others (Mathur et al., 2019). According to Nodder (2013), this phenomenon, often known as the "bandwagon effect," is a form of social influence. This is seen as a subjective norm in which the presence of others impacts peoples' purchase intentions. Activity notifications/messages and testimonials are two examples of dark patterns that make use of social proofing.

Activity notifications/Messages

The dark pattern "Activity Notifications" is an information that may be found on product pages indicating the activity of other users. The message can be expressed in a variety of ways. It might be several users viewing the same product, a few sold items, or messages showing recent purchases of other users. Mathur et al., (2019) note that certain websites falsely advertise these activities. Instead of providing genuine information, many websites employ a misleading random number. This number also changes over time, making it more difficult to identify them as misleading (See Figure 10).

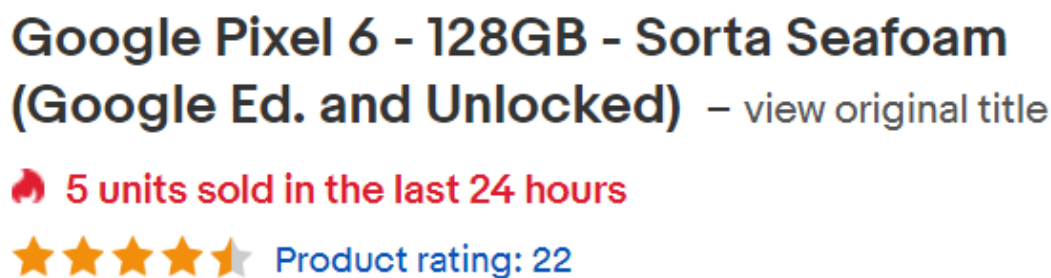


Figure 10: Activity Notifications/Messages on eBay (Source- ebay, n.d).

Testimonials

This form of dark pattern relates to the usage of testimonials from consumers whose origin is not specified clearly and not well sourced. The result of these kinds of testimonials is that users make decisions based on false information and mistakenly believe that an item is of high quality (Petr, 2022). Consumers searching for opinions on a product, for instance, may find testimonials particularly beneficial if they are based on real experiences with the product in question (Tiemessen,2022). Testimonials of uncertain origin can hasten user decision-making by exploiting the bandwagon effect cognitive bias. In 2022, all EU member states were subjected to a new directive requiring all online retailers to disclose how they ensure the legitimacy of their testimonials (European Commission, 2022). According to Leiser & Yang (2022), individuals can purchase or produce testimonials for their website in the same way that they can buy "likes" for their facebook pages, which implies that testimonials can sometimes be deceptive. They further claim that testimonials can be valuable, but it is difficult to ascertain whether they were left by genuine consumers (See Figure 11)

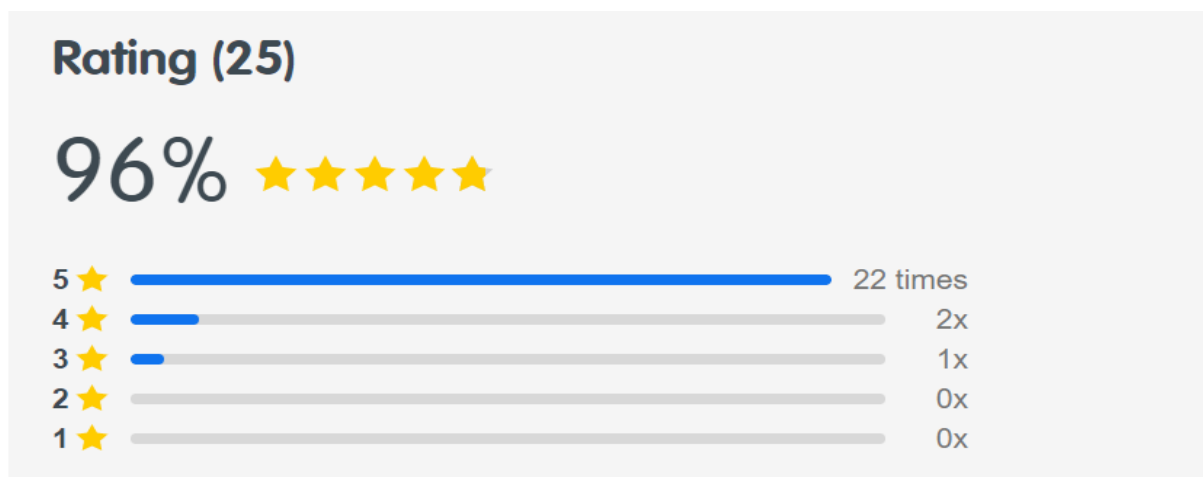


Figure 11-Ratings on mall.cz without a clearly defined source (Source- mall.cz, n.d).

3.3.5 Obstruction

This refers to the practise of making certain acts more difficult to carry out than other types of actions. This impedes a task flow as making an encounter more challenging than it necessarily must be with the intention of discouraging a certain behaviour. Frequently, obstruction emerges as a significant obstacle to a particular task that the user intends to do. One of the main sub types under this category is hard to cancel or Brignull's Roach Motel.

Hard to Cancel/ Roach Motel

This describes a situation that is simple to enter but difficult to quit. For instance, signing up for a membership to a service that requires payment once yearly is typically a lot less complicated as opposed to cancelling the subscription. A common pattern of this interactions, according to Mathur et al., (2021) and Gray et al., (2018) is when a user is required to contact a phone number to cancel their account, where they will be further pressured to keep their account (See Figure 12).

MY ACCOUNT » PURCHASE HISTORY » CANCEL

Cancel My Subscription

Are you sure you want to cancel?

Remember, once you cancel you'll lose unlimited access to the world's most influential reporting, opinion and commentary in journalism today.

[Go Back To My Account »](#)

Still want to cancel?

We're sorry to see you go.

To cancel your subscription quickly and easily, please call Customer Care at 877-698-5635

Hours of Operation:
 Monday — Friday: 7:30 a.m. ET through 9:00 p.m. ET
 Saturday and Sunday: 7:30 a.m. ET through 5:00 p.m. ET

Common Questions

What is the subscription refund policy?
 If you are on the monthly payment plan, we will stop charging your account starting next month. If you are on the annual payment plan, you will receive a prorated refund.
[See cancellation policy »](#)

What happens to my account?
 You will continue to have unlimited access for any remaining time on your pre-paid billing cycle. Thereafter, you can access NYTimes.com as a visitor and read limited articles each month for free. To receive unlimited articles each month you will need to re-subscribe.

What if I want to renew my subscription?
 No problem! You can renew your digital subscription at any time to get full access to NYTimes.com on the Web and on mobile devices.
[Learn more about subscriptions »](#)

Figure 12 Hard to cancel (Source- <https://www.theawl.com/2016/05/are-you-afraid-of-the-dark-patterns/>).

3.3.6 Misdirection

Misdirection is the dark pattern that causes the user to focus on one item to divert attention to another (Cara, 2019). The distraction comes from either an extra fee or information that helps the company however does not benefit the user. Misdirection might be about sales or data collection. Examples of dark patterns in this category are trick questions, pressured selling and toying with emotion/confirm shaming.

Trick questions

This pattern uses ambiguous language to influence user decisions. Users sometimes report several trick questions, such as double negative questions that confuse the reader or contradictory opt-out questions (Lupianez-Villanueva et al., 2022). Mathur et al., (2019) state that most websites pursue this by employing misleading double negatives (e.g., 'Uncheck the box if you prefer not to get email updates') or negatives to change expected actions, such as ticking a box to opt out (e.g., 'We would want to send you emails, if you don't want email, uncheck the box). Trick Questions make use of the default and framing effect cognitive biases of users, who are more likely to accept a choice they naively think is in line with their preferences (Mathur et.al., 2019). From the example below by Brignull (n.d), ticking the first one indicates "opt out," and ticking the second one implies "opt in." (See Figure 13)

Please enter your details to reserve your item(s)

Title :

First name * :

Last name * :

Email * :

Phone number * :

Please do not send me details of products and offers from Currys.co.uk

Please send me details of products and offers from third party organisations recommended by Currys.co.uk

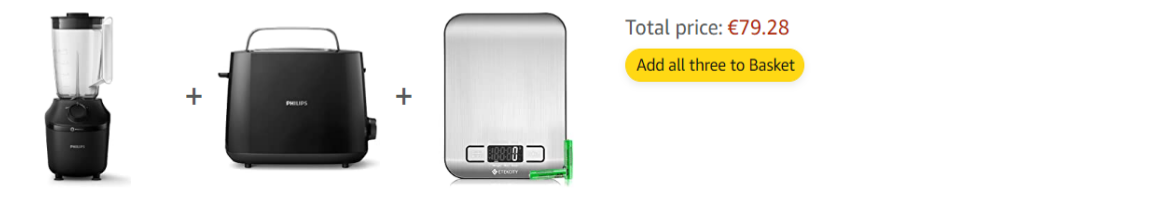
Reserve items

Figure 13; Trick Question example. (Source- Brignull, n,d)

Pressured Selling

In "Pressured selling," users are encouraged to purchase product bundles, related items (cross selling), or a more expensive version (upselling) of the product (Nevala, 2020; Mathur et al., 2019). The pressured selling dark pattern uses cognitive biases such the default effect, anchoring effect, and scarcity bias to influence user purchases (See Figure 14 & 15)

Frequently bought together



Total price: €79.28
Add all three to Basket

i Some of these items are dispatched sooner than the others. [Show details](#)

- This item:** Philips Standmixer und Smoothie Maker – 450W, 1.9-Liter-Behälter, Rezepte-App, 1 Geschwindigkeitsstuf... €39.64
- Philips Toaster - 2 Toast Slots, 8 Levels, Bun Attachment, Defrost Function, Lift Function, Automatic Shut-Off, Black ... €27.44
- ETEKCITY kitchen scales, digital electronic scales, 5 kg, with large LCD display, ultra thin stainless steel kitchen scale... €12.20

Figure 14 Example of pressured selling in bundles (Amazon.de, n.d)

Products related to this item

Sponsored ⓘ



The image shows a screenshot of an Amazon.de product page for blenders. It features three sponsored product listings. Each listing includes a product image, a title, a brief description, a star rating with the number of reviews, and the price with a Prime logo. A left arrow button is visible on the far left.

Product Name	Price	Rating	Reviews
WMF Kult Mix & Go Mini Smoothie Maker, Shake Mixer, Blender Electric, 300 Watt, Tri...	€40.57	★★★★★	26,458
Philips Domestic Appliances Standmixer und Smoothie Maker – 600W, 2-Liter-Becher,...	€62.01	★★★★★	3,199
CCN Blender 500 W Energy Smoothie Maker with 1.5 L Heat-Resistant Glass Container, ...	€59.99	★★★★★	7

Figure 15 Example of pressured selling for related product (Amazon.de, n.d)

3.3.7 Confirm Shaming

Confirm shaming is a form of dark pattern that uses both words and emotion to dissuade people from choosing a particular option. Confirm shaming is particularly common in pop-up dialogues that ask visitors for their email addresses in return for a discount. The website presents declining the offer as a shameful choice. "No thanks, I like paying full price," "No thanks, I hate saving money," and "No thanks, I hate fun & games" are a few examples of this framing. Lupianez-Villanueva et al., (2022) argue that this emotional manipulation (confirm shaming) generally deceives a large proportion of consumers into purchasing a product contradictory with their stated preferences. (See Figure 16).

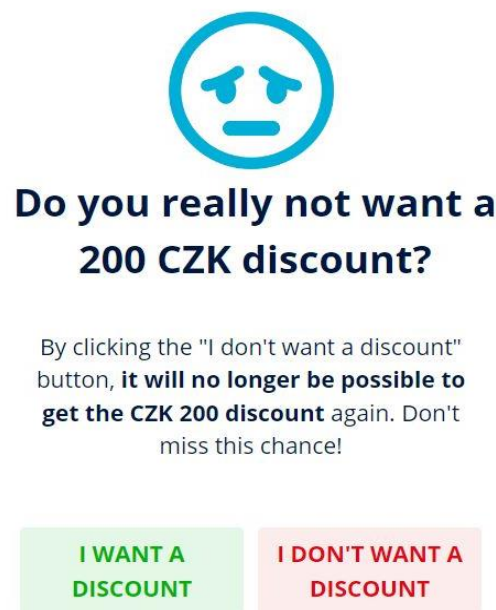


Figure 16 Example of confirm shaming on Dartart.cz (Datart.cz, n.d)

In general, in the Czech Republic, the prevalence of dark patterns has been captured in by Petr (2022). He found a total of 1,419 dark patterns across 1,081 web shops out of a total of 10,000 web shops. This indicated that 10.81% of all web shops have at least one occurrence of dark pattern. Table 2 shows the instances of dark pattern divided into categories in the Czech Republic.

Table 2: Dark Pattern divided into categories in the Czech Republic.

Categories	Type	Count
Urgency	Countdown Timers	23
	Limited-time Messages	17
Sneaking	Sneak into Basket	2
	Hidden Cost	0
	Hidden subscription/ Forced Continuity	0
Scarcity	Low stock Messages	38
	High- demand Messages	19

Social Proof	Activity Messages	223
	Testimonials	19
Obstruction	Hard to cancel	6
Misdirection	Trick questions	68
	Pressured Selling	924
	Toying with Emotion/Confirm shaming	0

Source: Petr, H. (2022). *Detekce temných vzorů v českých internetových obchodech* (Master's thesis, České vysoké učení technické v Praze. Vypočetní a informační centrum.).

3.4 Reasons why businesses use dark patterns.

Since its inception, e-commerce sites have employed persuasion to keep consumers on their sites and make as many purchases as possible (Haywood, 2006). Thus, it is not surprising that the distinction between a digital nudge and dark patterns is frequently difficult to draw. This poses the more challenging question of what is ethically right or wrong in various situations. The number of issues related to internet ethics is increasing in tandem with the widespread adoption of the internet. Companies use dark patterns to mislead people, which is a major ethical issue online (Ekroth & Sandqvist, 2020). Given all these ethical issues associated with purchasing goods online, it's crucial to understand why businesses employ dark patterns.

One simple explanation for this phenomenon, according to Runge et al., (2022), is that businesses believe that keeping consumers from leaving would increase the likelihood that they will re-engage in the future. Another argument is that even if consumers cease using their services often, firms may still benefit from them. According to the Stigler Committee on Digital Platforms (2019), online companies are only concerned with increasing engagement through "dark patterns," and as a result, they continually promote user interfaces that lead to product addiction. Dark patterns have one or more end-goals in common, such as persuading consumers to buy more of or keep buying a good or service that they would otherwise not buy or buy in smaller quantities, to spend more money or time than desired on a purchase or service, or to provide more personal information than desired, all with the aim of boosting business revenue (OECD Committee on Consumer Policy ,2022).

Given the degree of competition, firms may at times be incentivized to use them, particularly if there is no clear legal restriction to doing so (OECD,2022). Vinney (2021) continues by saying that by using dark patterns, companies may quickly achieve their goal without spending

time on developing a user-friendly solution. Dark patterns are successful regardless of how they show up in an interface because they exploit consumers' cognitive shortcuts (heuristics and biases) in their decision-making processes (Collin, 2022). When consumers are faced with dark patterns, they are tricked, misled, or coerced into adopting something they would not have selected if they were making a free and informed decision (Center for Information Technology Policy, 2022). The consequences of dark patterns on an individual can range from a slight annoyance to frustration, to being tricked or deceived.

Dark patterns limit consumer autonomy by preventing consumers from making informed decisions (OECD,2022). Some dark patterns may adversely affect consumers in other ways, such as financial loss (via drip pricing and subscription traps), in terms of privacy, psychologically (through wasted energy or attention and emotional discomfort), and in terms of time loss (OECD,2022) and even giving away personal data, obsessive and addicted behaviour (Mathur et al. 2019). Dark patterns can also harm consumers collectively by lowering their trust in online businesses (Craig, 2022; OECD, 2022). Even these dark patterns seem to work in the short term, once a user knows about them, they hurt the brand's reputation (Cara,2020). However, the OECD (2022) contends that more study is required to properly direct policy and enforcement actions because there is frequently a lack of concrete proof of consumer harm from dark patterns.

3.5 Dark patterns in the light of the EU Consumer Regulations

Dark patterns may be "unethical," but it's unclear if they are unlawful. (Luguri & Strahilevitz, 2021). Businesses in the European Union (EU) are subject to several EU laws and regulations, which safeguard EU citizens and people all over the globe who get online services from the EU. The General Data Protection Regulation (GDPR), which focuses on the data and privacy protection of the European Union, is one of the most popular regulations (Krzysztofek,2018). Although the GDPR does not directly prohibit dark patterns, they violate its fundamental principles (Graßl et al., 2021). The General Data Protection Regulation (GDPR) of the European Union has several rules that can be implemented to target organisations that make use of dark patterns (Nevala,2020). Under GDPR, organisations are required to treat personal data in a manner that is 1) transparent, 2) fair, and 3) for reasons that are explicit and legitimate. Cookies are one of the most frequent ways for a website to acquire personal information. GDPR compels websites to obtain express consent from users before collecting data.

Another EU legislative framework that is concerned with dark patterns is the Unfair Commercial Practices Directive (UCPD), which defines and controls unfair business-to-consumer commercial practices in the digital environment in the EU regulatory framework. This framework is augmented by EU laws on consumer protection, privacy and data protection, advertising and commercial communication, and competition (Lupianez-Villanueva et al., 2022). A recent online review by the EU indicated that around 40% of online shopping sites use deceptive practices to take advantage of consumers' vulnerabilities or trick them (European Union, 2022). They found that 42 websites used fake countdown timers with deadlines to buy specific products; 54 websites used visual design or language to steer consumers towards subscriptions, more expensive products, or delivery options; and 70 websites hid important information from consumers. This included shipping costs, product content, and cheaper options. 23 websites disguised information to trick users into subscribing; 102 of the websites examined included applications, 27 of which used at least one of the three dark pattern categories. BEUC (2022) believes that EU consumer legislation already has some potential to address these situations, but it is currently not effectively enforced. Furthermore, EU law must be revised to address these unfair practises and guarantee that consumers are not adversely affected by deceptive user interfaces and data personalization.

4 Research Methodology

This section provides a more in-depth description of the research methodologies that were used for the thesis, as well as the approaches that were utilised in the data collection and analysis.

4.1 Main Goal

The concept of "dark patterns" has become a major cause for concern for consumers, researchers, and policy makers. In general, the thesis' primary goal is to broaden the understanding and awareness of dark patterns and its influence on consumers' purchasing intentions in the Czech Republic. In achieving this overarching goal, the following objectives would be considered:

- ✓ To ascertain the level of consumer awareness of Dark patterns in the Czech Republic
- ✓ To determine the extent to which dark patterns affect consumers' purchase intentions.
- ✓ To understand what consumers, think and feel in general about dark patterns?

4.2 Research Questions

In line with the main goal and specific objectives of the thesis, the following questions will be analysed:

RQ1: What is the level of consumers' awareness of Dark patterns in the Czech Republic?

RQ2: How do dark patterns affect consumers' purchase intentions?

RQ3: What do consumers think and feel in general about dark patterns?

4.3 Research Design Formulation

A research design, as defined by De Vaus (2008), is a plan for addressing research questions through the integration of a study's various elements. The research design serves as the logical structure for conducting a study and enables researchers to gather evidence to address the research questions. (Dixon-Woods et al., 2004). This thesis used the survey research design combined with quantitative research methodologies. The survey research approach was chosen because it helps to describe and explore a population's opinions, behaviour, and characteristics (Singleton & Straits, 2009; Tanny, 2018).

Regarding the data obtained for this thesis, both primary and secondary data were collected. The thesis collected primary data through an online questionnaire targeting online shoppers within the age range of 18-55+ years, residing in the Czech Republic. According to Statista (2023), about 70.7 percent of internet users in the Czech Republic engaged in online purchases

in 2022. The secondary data used in this thesis was obtained from previous studies conducted by different people on dark patterns and online purchasing intentions. Secondary data gives additional viewpoint on the thesis and reduces data gathering time since some of the information might be readily available.

4.4 Sampling Techniques

Convenience sampling, which is a form of non-probability sampling, was selected as a way of identifying the sample for this research. The convenience sampling was adopted because respondents are readily accessible to participate and provide the needed information for the thesis (Carter & Seifert, 2013) and permits the collection of data from many participants in a very short space (Nazir & Tian, 2022).

4.5 Data Collection Methods & Analysis

Due to the nature of the thesis, the data was collected through an online questionnaire using Microsoft forms. Online questionnaires save time because respondents may complete them without the researcher's personal involvement- mainly self-administered. Respondents are also more likely to share the truth because their anonymity and confidentiality is highly assured. Even though the study was carried out in English, a Czech translation of the questionnaire was also done to collect the opinions of respondents who do not speak English.

The set of questionnaires had three sections. Section 1 consisted of respondents' online shopping experience. Section 2 dealt with Dark Patterns experience and Online Purchase Intentions. Section 3 captured the demographic characteristics of respondents such as age, gender, and educational level. The types of questions used are multiple choices, likert scale, and open-ended questions. Some questions employed a 5-point likert scale to assess respondents' agreement with statements ranging from "strongly disagree" and "strongly agree."

A total of 223 participants responded to the online questionnaire. The data was collected from 27.02.2023 to 27.03.2023. Only 222 of the 223 questionnaires were considered valid because one respondent indicated that they do not purchase online, making them ineligible for the thesis. The survey was conducted through the posting of a paid advertisement on Facebook and sharing the link on various Facebook and WhatsApp groups. Analyses, both descriptive and exploratory, were performed on the data with SPSS (Statistical Package for the Social Sciences).

4.6 Delimitations

The main goal of the thesis is to broaden the understanding and awareness of dark patterns and its influence on consumers purchasing intentions in the Czech Republic. The limitations of the thesis are explained below:

As stated in the previous chapter, it has always been difficult to determine what is regarded as dark pattern or not. It has always been dependent on the expert's subjective judgement. Given these nuances, the result of the thesis is expected to have implications for academia and practice. For academia, the thesis intends to extend the current body of knowledge, which is yet to explain the relationship between dark patterns and consumers' purchase intentions. However, the literature identifies numerous dark patterns, but this thesis emphasizes on only three: countdown timers, testimonials, and low stock messages. In this regard, it is anticipated that the results can only be generalised for the observed dark patterns in this thesis, as other dark patterns may have different effects on consumers' purchase intentions in the Czech Republic.

Furthermore, Edwards (2022) establishes that there are about 6 million online shoppers in the Czech Republic. However, because of time limitations, only 223 individuals completed the online surveys within a one-month timeframe. Therefore, it can be presumed that more diverse responses would have been collected if time had not been a factor, and the results may not be representative of all online shoppers in the Czech Republic.

II. ANALYTICAL PART

5.0 Research Results, Findings and Analysis

The results and analysis of the 222 responses collected for this thesis are presented in this section. All results are derived from the output of version 29 of IBM SPSS Statistics. This chapter includes (i) descriptive characteristics of respondents, ii) Online purchasing experience and (iii) analysis of the research questions.

5.1 Descriptive Analysis

5.1.1 Demographic Profiles

Out of the 223 questionnaires gathered, 222 were considered suitable for the thesis. The demographic information of the participants is presented as follows:

Table 3: Demographic Characteristics of Respondents

Characteristics	Category	Number	%
Gender	Female	92	41.4
	Male	124	55.9
	Other	3	1.4
	Prefer not to say	3	1.4
Age	18-24	34	15.3
	25-34	93	41.8
	35-44	68	30.6
	45-54	18	8.1
	55 and above	10	4.1
Education	Without Education	1	0.5
	High School	48	21.6
	Bachelor's Degree	97	43.7
	Master's Degree	62	27.9
	Ph. D	15	6.3

Source: Own research, 2023

Table 3 shows the analysis of the general characteristics of the respondents who took part in this research. The thesis had a total of 222 responses, with 41.4 % being females, 55.9 % being males, 1.4% being other gender and 1.4% preferred not to say their gender. Although the Czech

Statistical Office (2021) reports that most internet shoppers are females (69.1%), our research found that most of our respondents were males (55.9%).

Again, the findings indicate that 15.3% of respondents are in the 18-24 age range, 41.8% between 25-34 age range, 30.6% within 35-44 age range, 8.1% are in the 45-54 age range, and 4.1% are 55 and older. It can be deduced that most respondents in this thesis were between the ages of 25-34. This result is confirmed by Statista (2023), which indicates that the most frequent internet shoppers in the Czech Republic are between the ages of 25-34.

Furthermore, Table 3 shows that most respondents have a bachelor's degree (43.7%), followed by master's (27.9%), high school (21.6%), Ph.D. (6.3%), and no formal education (0.5%).

5.1.2 Online Shopping Experience

According to the survey, all 222 respondents have ever purchased online. The research found that 23% of respondents very frequently shop online, 32% frequently shop online, 35% occasionally shop online, 6% rarely shop online, and 5% very rarely shop online (See Figure 17).

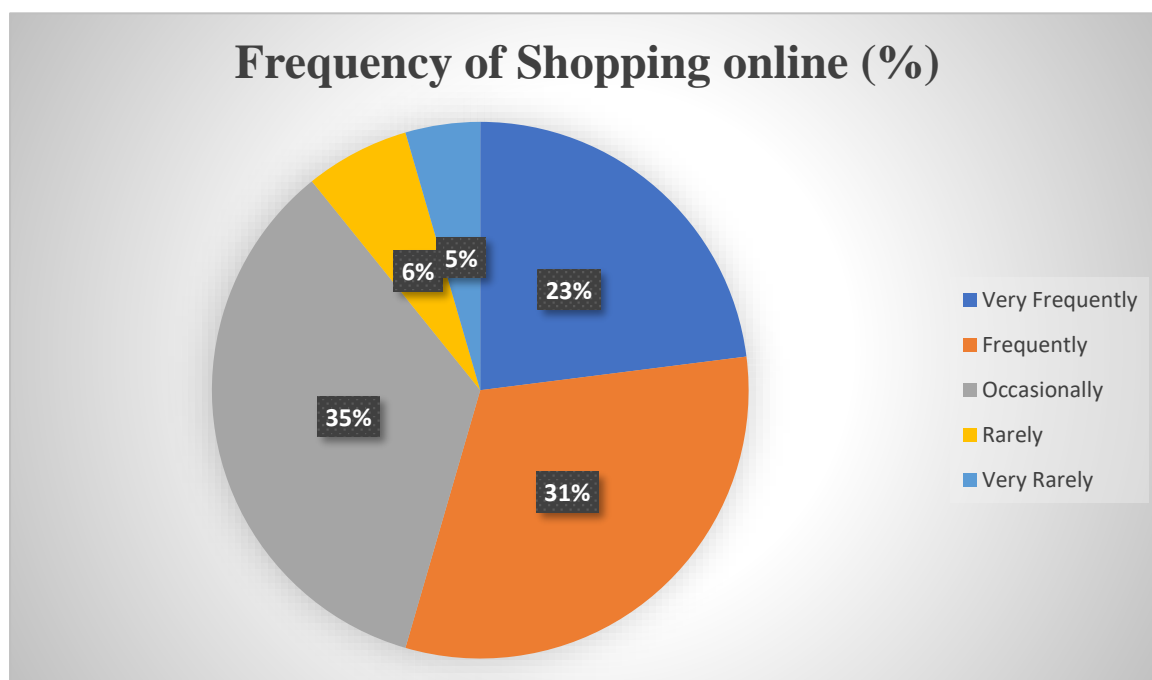


Figure 17: Frequency of Shopping online

Source: Own research, 2023

Furthermore, although the majority of respondents indicated that they shop occasionally, Figure 18 below shows that 63 people representing 28.4% shop online because of necessity, 33 people representing 14.9% shop because of discounts/ promotions, 16 people representing 7.2% shop because of referrals from friends and family, 57 people representing 25.7% shop because of convenience, 38 people representing 17.1% shop because they can find products shops don't have, 11 people representing 5% shop because they can get wider range of choices and 4 people showing 1.8% shop online because of other reasons.



Figure 18: Main Motivation for shopping online

Source: Own research, 2023

Though figure 17 shows the several reasons people shop online, Jusoh and Ling (2012) argue that online shopping of tangible items offer challenges when compared to conventional brick-and-mortar retail store purchase. Consumers must rely on mediated images of goods bought online because they cannot directly examine them. Again, respondents were asked to select the three (3) most frequently purchased items online. From Figure 19, 16.2% of the 666 items purchased online by the respondents were Consumer electronics, 14.6% were Clothing,

Footwear, and Accessories, 14.6% were Books, Movies, Music, and Games, 10.9 were Health, Personal Care, and Beauty, 13% were Food and Beverage, 7% were Furniture and Décor, and 16.7% were Travel (airline tickets, hotels, and car rentals), and 2.3 % bought other items.

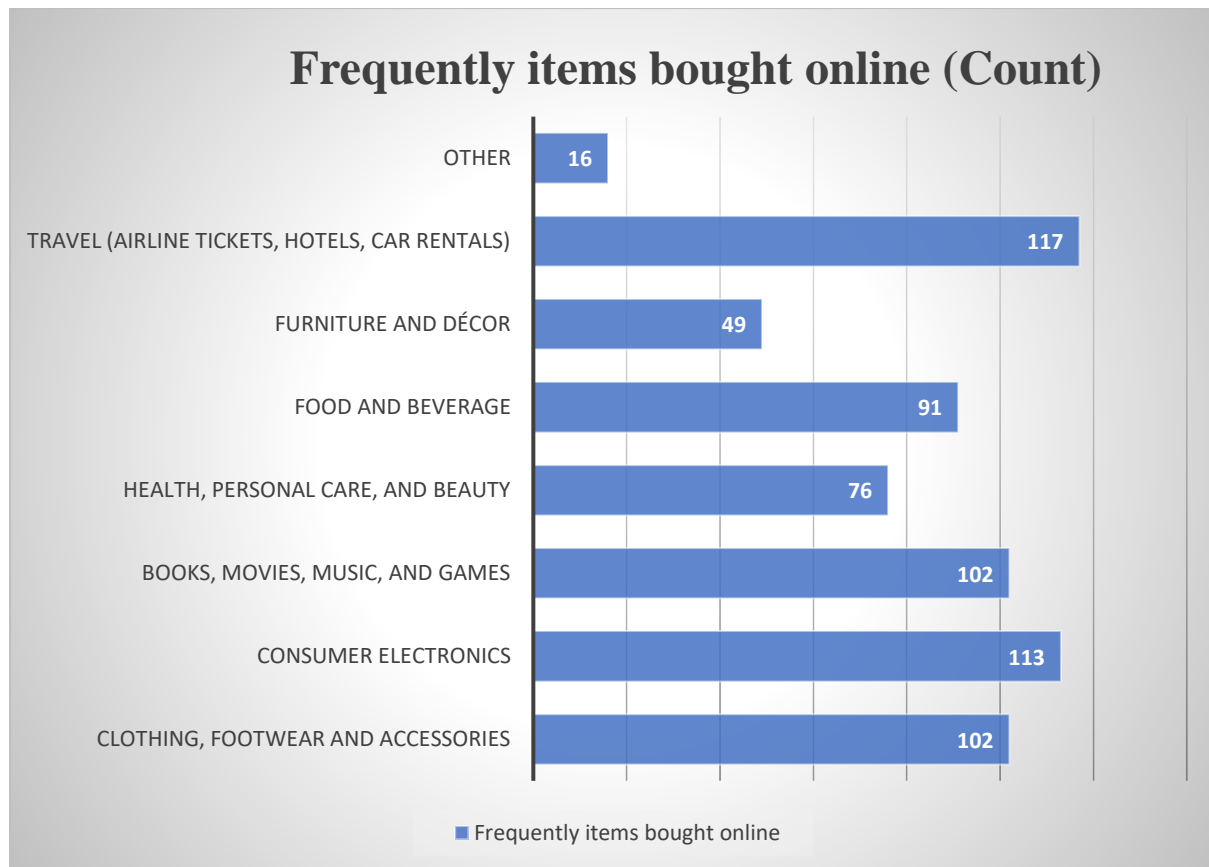


Figure 19: Frequently Items bought online.

Source: Own research, 2023

5.2. Analysis of Dark Patterns and Online purchase intentions

5.2.1 Deceptive Countdown Timers

Most of the time, this dark pattern looks like a clock counting down to the end of a deadline/offer period. This however invokes a sense of untrue feelings and immediacy (Petr, 2022). In the thesis, respondents were asked whether they have encountered countdown timers in their shopping experience before.

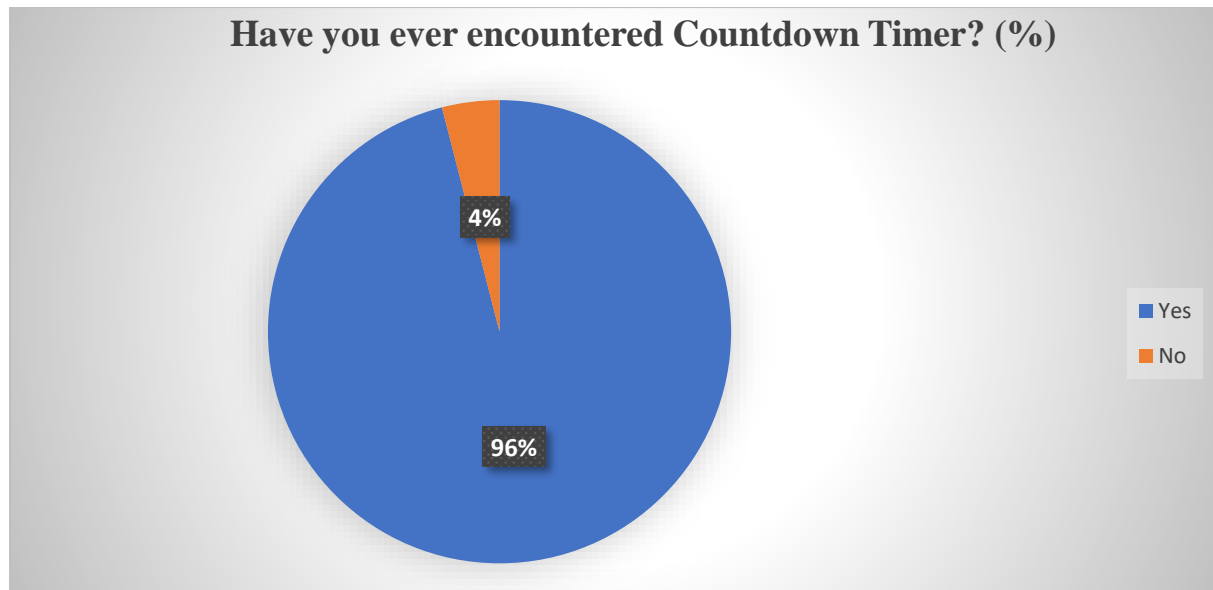


Figure 20- Have you ever encountered Countdown Timer before?

Source: Own research,2023

According to Figure 20, 209 respondents (96%) have encountered countdown timers, compared to 13 respondents (4%) who have not. Out of a total of 222 respondents, 39 (17%) indicated that countdown timers are very likely to influence them to make an online purchase, 65 (29%) reported somewhat likely, 57 (26%) indicated somewhat unlikely, and 62 (28%) clearly stated that countdown timers are very unlikely to influence them to make an online purchase (See figure 21)

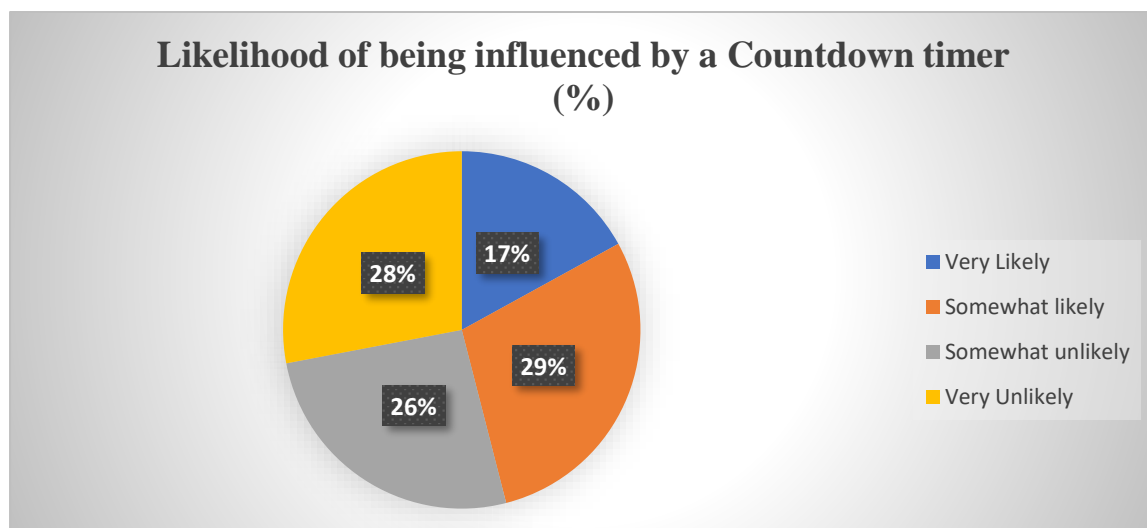


Figure 21 Likelihood of being influenced by a countdown timer (%)

Source: own research,2023

Additionally, the 103 respondents who responded, "*Very likely*" and "*Somewhat likely*" on how countdown timers could influence their purchase intentions further demonstrated their agreement to the following questions:

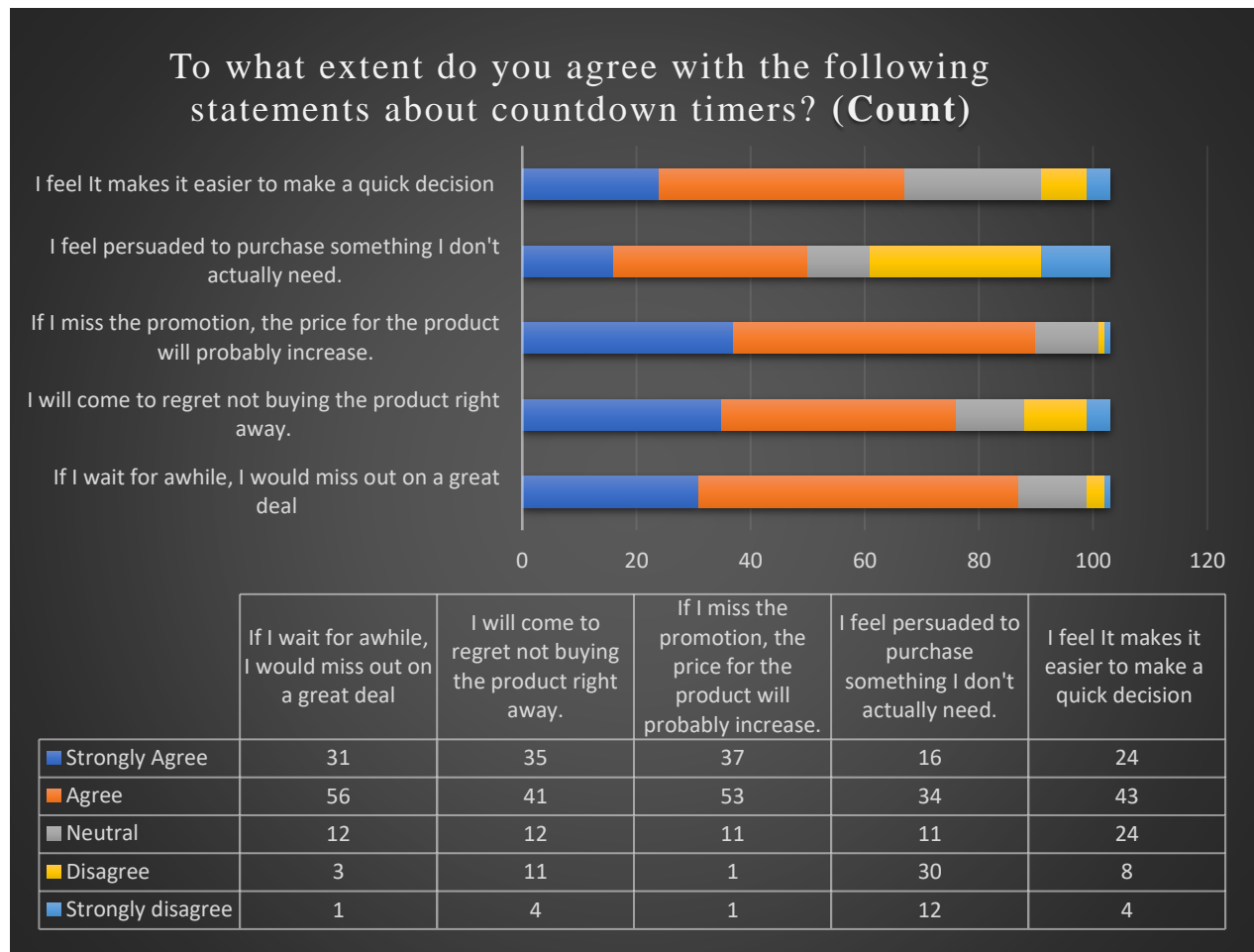


Figure 22- To what extent do you agree with the following statements about countdown timers?

Source: Own research,2023

From Figure 22, 31 respondents (30%) strongly agreed with the statement "*If I wait for a while, I will miss out on a great deal*" when it comes to countdown timers, majority of 56 respondents (54%) agreed, 12 respondents (12%) indicated neutral, 3 respondents (3) % disagreed and 1 respondent (1%) strongly disagreed. Also, Regarding the statement "*I will come to regret not buying the product right away*", 35 respondents (34%) strongly agreed with this statement, 41 respondents (40%) agreed, 12 respondents (11%) stayed neutral, 11 respondents (11%) disagreed, and 4 respondents (4%) strongly disagreed. Again, 37 respondents (36%) strongly agreed to the statement "*If I miss the promotion, the price for the product will probably increase*", 53 respondents (51%) agreed, 11 respondents (11%) stayed neutral, 1 respondent

(1%) disagreed and 1 respondent (1%) strongly disagreed. Furthermore, the statement **“I feel persuaded to purchase something I don't need”** had 16 respondents (15%) indicating strongly agreed, 34 respondents (33%) agreed, 11 respondents (11%) staying Neutral, 30 respondents (29%) disagreed, and 12 respondents (12%) strongly disagreed. Lastly, regarding the statement **“I feel it makes it easier to make a quick decision”**, 24 respondents (23%) strongly agreed with this statement, 43 respondents (42%) agreed, 24 respondents (23%) stayed neural, 8 respondents (8%) disagreed, and 4 respondents (4%) strongly disagreed.

Also, from Figure 23 below, 119 respondents indicated that it is **“Somewhat Unlikely”** or **“Very Unlikely”** for countdown timers to influence their purchase intentions. 34 respondents (29%) stated that they will purchase the product if they need it, regardless of the price or promotion deadline, 29 respondents (24%) confirmed that sometimes prices do not change even after the deadline, 17 respondents (14%) stated that they will consider other factors before making a purchase, 31 respondents (29%) stated that they prefer not to be persuaded if purchasing a product online, and 8 respondents (7%) indicated other reasons such as they will go to other websites when they see a countdown timer or reload the page or delete their browser data to reset the timer, making it deceptive.



Figure 23- What are some reasons you might not be influenced by a countdown timer.

Source: Own research,2023

Finally, from a total of 222 respondents, Figure 24 shows that 100 respondents (45%) indicated that they have never been influenced by a countdown timer before, 90 respondents (41%) declared ever been influenced before and 32 respondents (14%) reported maybe they have ever been influenced before or not. One respondent shared their experience on a countdown timer. *“I remember 2 days to Valentine's Day; I saw a countdown timer on a discount for Guess watches on a website. To me it was a good deal. Seeing that it might be sold out immediately I bought the watch. So, after Valentine's Day, I went back to the website and realized the prices did not change even after the count timer expired”*.

Another respondent also shared their experience on a countdown timer: *“I had an experience when the price of product advertised online was more expensive than the same item at the store. That was how I realised that not all these messages are real”*.

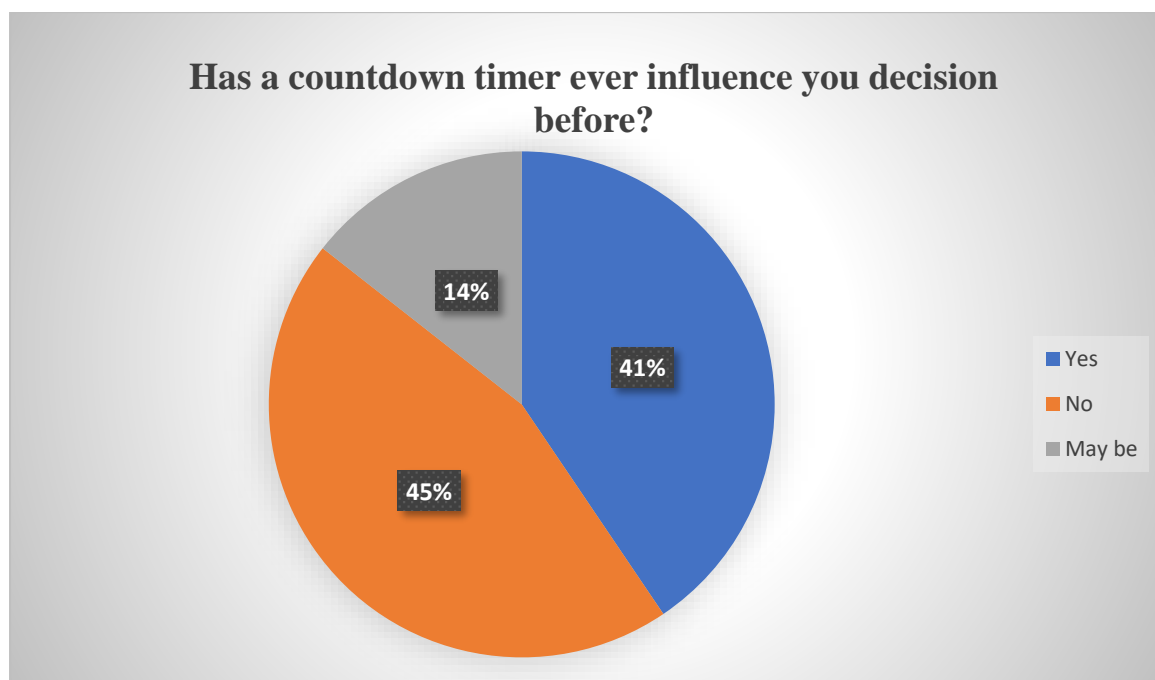


Figure 24- Has a countdown timer ever influence you decision before?

Source: Source: Own research,2023

Considering everything that has been discussed, it can be inferred that countdown timers have a lower potential to influence the choices of most of the respondents. This could be because these individuals have already been tricked by this dark pattern in the past and are therefore less likely to do so in the future because they are now more informed. This confirms Cara (2019) assertion that dark patterns seem to work in the short term, once the user is aware of

them. In terms of online purchasing behaviour, these respondents will most likely consider quality, value, knowledge, need, and other factors before making an online purchase.

However, respondents who are likely to be influenced or have experienced countdown timers indicated the feelings of urgency (time pressure), regret, and fear of missing out (FOMO) as key reasons pushing them to make a purchase online. According to Mathur et al., (2019), these urgency dark patterns take advantage of the scarcity bias, in which the value of a product rises as due to its scarcity. Thus, Tiemessen (2022) affirms that if a sale or deal has a limited time remaining, the sale or deal becomes more attractive than it would otherwise be to consumers.

5.2.2 Social Proof- Testimonials

Testimonials are frequently used to influence a user's choices by displaying the opinions of earlier consumers; however, their original sources are not always made clear. According to Mathur et al., (2019), there is a higher incidence of dark patterns related to social proof, such as testimonials, on e-commerce websites in comparison to other types of dark patterns. In this thesis, respondents were asked about the experience with online testimonials. Details are shown in Figure 25.



Figure 25- Have you ever come across Testimonials Online before?

Source: Own research, 2023

As depicted in Figure 25, 209 respondents (94%), reported having been exposed to Online Testimonials, 13 respondents (6%) indicated otherwise. Among the 222 participants who

responded, 66 respondents (17%) indicated online testimonials are very likely to influence them to make an online purchase, 115 (60%) reported somewhat likely, 3 (2%) indicated somewhat unlikely, and 8 (4%) clearly stated that online testimonials are very unlikely to influence them to make an online purchase (See Figure 26). Given that majority of the respondents are likely to be influenced by online testimonials confirms Spillinger & Parush's (2011) assertion that online testimonials can increase consumers' trust in a website and, consequently, their likelihood to make a purchase.

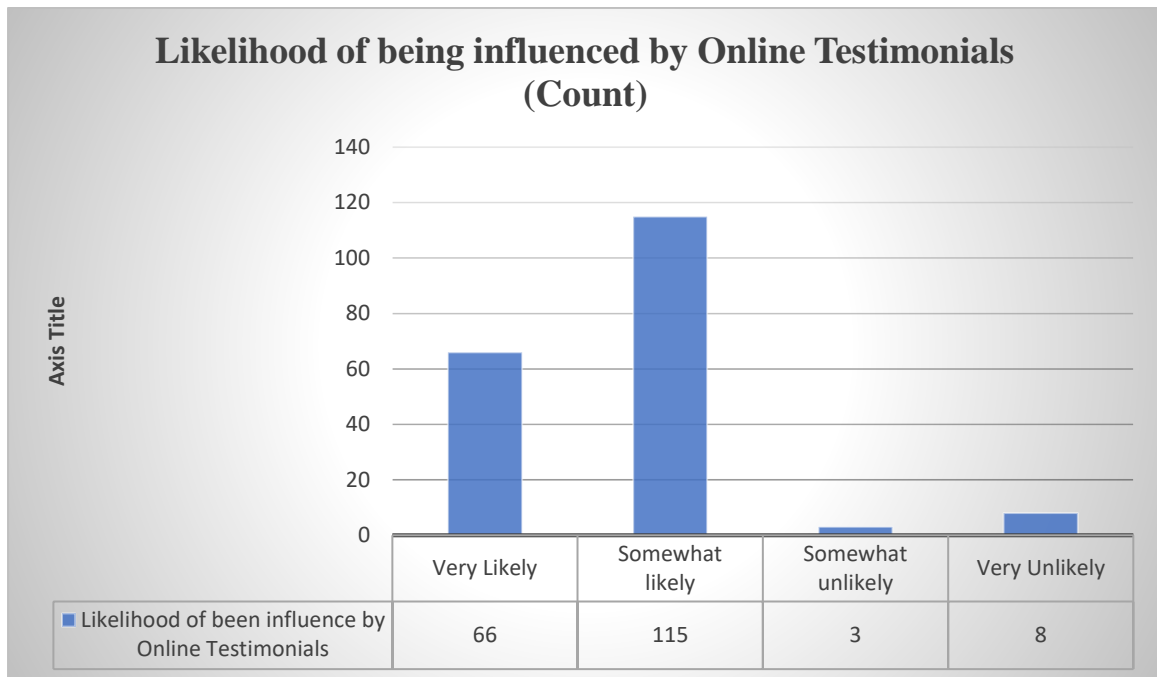


Figure 26- Likelihood of been influenced by Online Testimonials?

Source: Own research,2023

In addition, referring from Figure 26 above , the 181 respondents who responded, "**Very likely**" or "**Somewhat likely**" about the influence of online testimonials on their purchase intentions showed their agreement to the following statements : From Figure 27 below, 65 respondents (36%) strongly agreed with the statement “**Provides useful advice from people who have used the service or product.**” when it comes to online testimonials, 103 respondents (57%) agreed, 11 respondents (6%) indicated neutral, 2 respondents (1)% disagreed and no respondent (0%) strongly disagreed. Also, regarding the statement “**Makes it easier to decide**”, 45 respondents (25%) strongly agreed with this statement, 110 respondents (61%) agreed, 19 respondents (10%) stayed neural,6 respondents (3%) disagreed, and 1 respondent (1%) strongly disagreed. Again, 52 respondents (29%) strongly agreed to the statement “**Gives an idea about the product quality**”, 108 respondents (60%) agreed, 15 respondents (8%) stayed neural, 6

respondents (3%) disagreed, and no respondent (0%) strongly disagreed. Furthermore, the statement ‘*Builds my trust for the Product/Service*’ had 54 respondents (30%) indicating strongly agreed, 90 respondents (50%), 29 respondents (16%) staying Neutral, 4 respondents (2%) disagreed, and 2 respondents (2%) strongly disagreed.

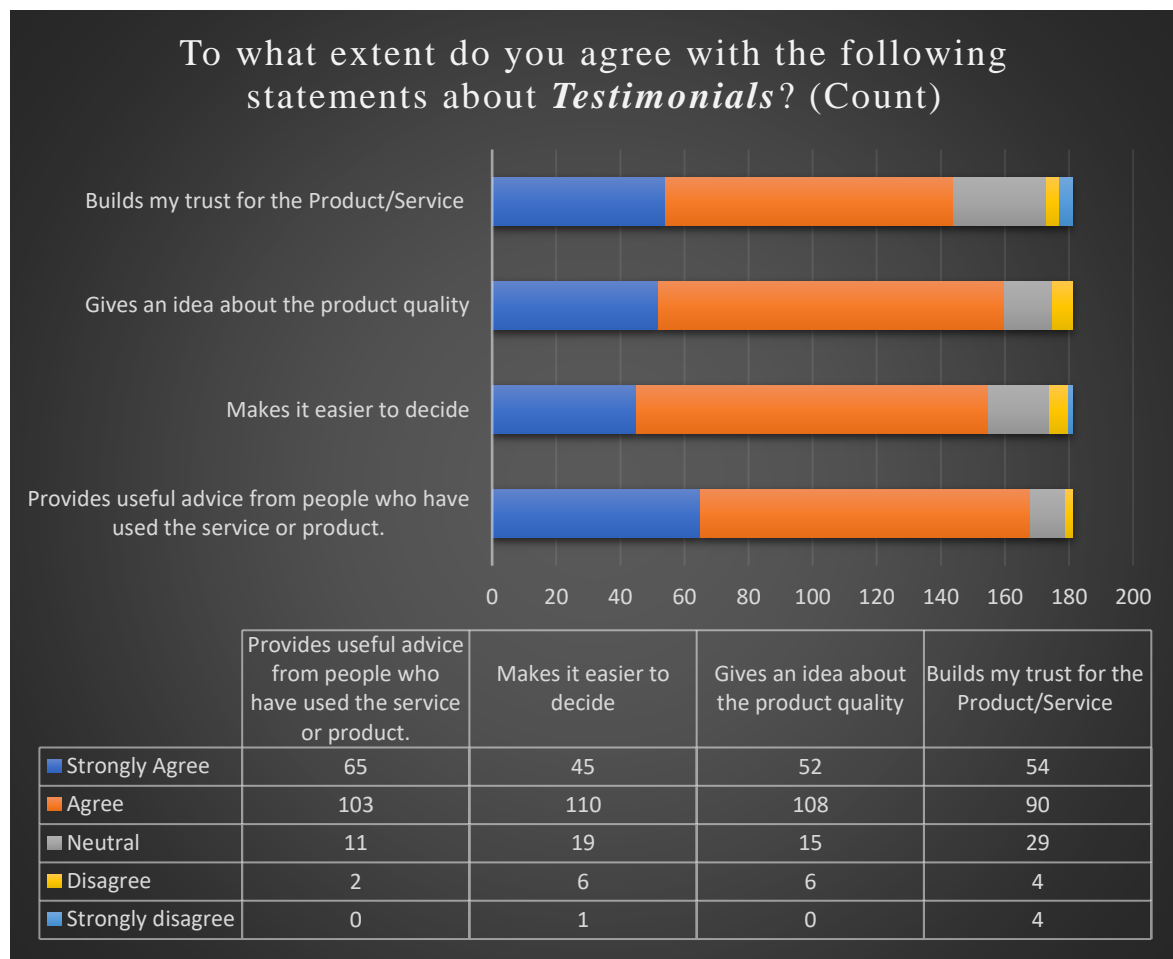


Figure 27- To what extent do you agree with the following statements about Testimonials?

Source: Own research, 2023

Furthermore, analysing the responses from the participant who indicated that Online testimonials are ‘*Somewhat unlikely*’ or ‘*Very unlikely*’ to influence their purchasing intentions revealed that 17 respondents (42%) stated that they feel sometimes these testimonials are not real, 14 respondents (34%) confirmed that they will consider other factors before making a purchase, 10 respondents (24%) stated that they will purchase the product if they need it, regardless of other consumers' activities (See Figure 28)

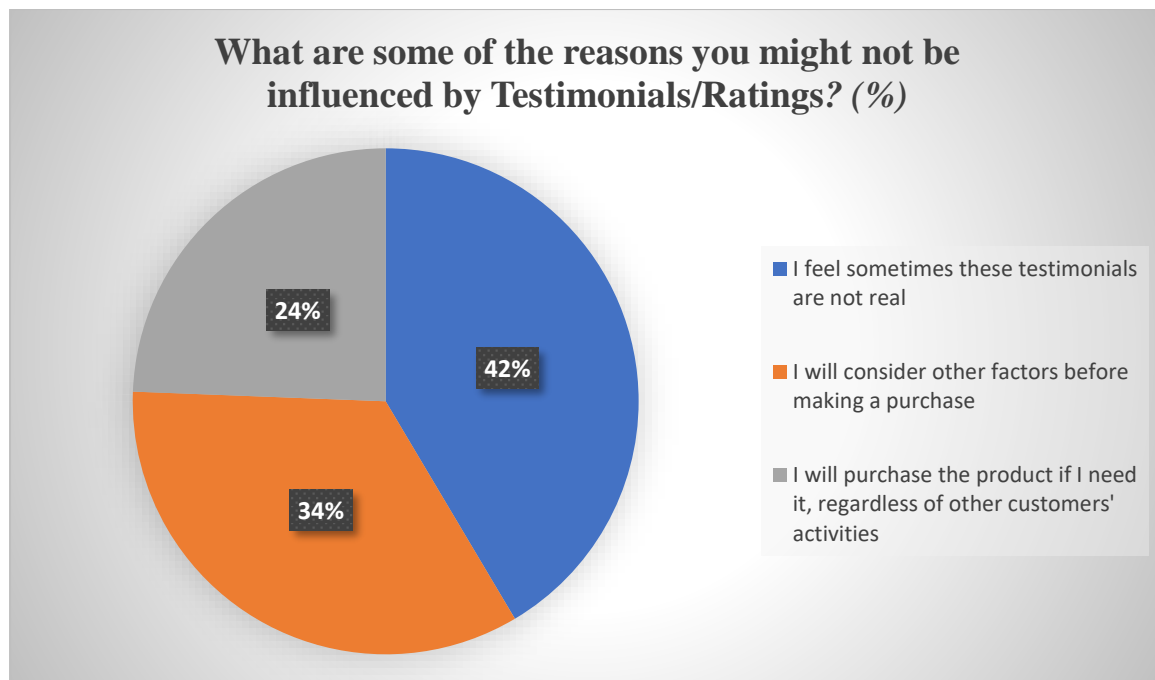


Figure 28- What are some of the reasons you might not be influenced by Testimonials/Ratings?
Source: Own research,2023

Finally, from a total of 222 respondents, Figure 29 below shows that 178 respondents (80.2%) indicated that they have been influenced by an online testimonial before, 21 respondents (9.5%) declared never been influenced before and 23 respondents (10.4%) reported maybe they have been influenced before or not. One respondent shared their experience with an Online testimonial. ***“Reviews are often fake. Even with the true reviews, there are risks and consumers should be critical of the positive ones”.***

Another participant also indicated: ***“I have been the main victim with this kind of what you labelled *dark patterns specifically with offers of huge discounts and legit testimonials. Last week I ordered shoes, they sent wrong brand and size of shoes, the contact email they mentioned for complaints is not reachable and the address to return is not reachable as well. Seems to be fake address”.***

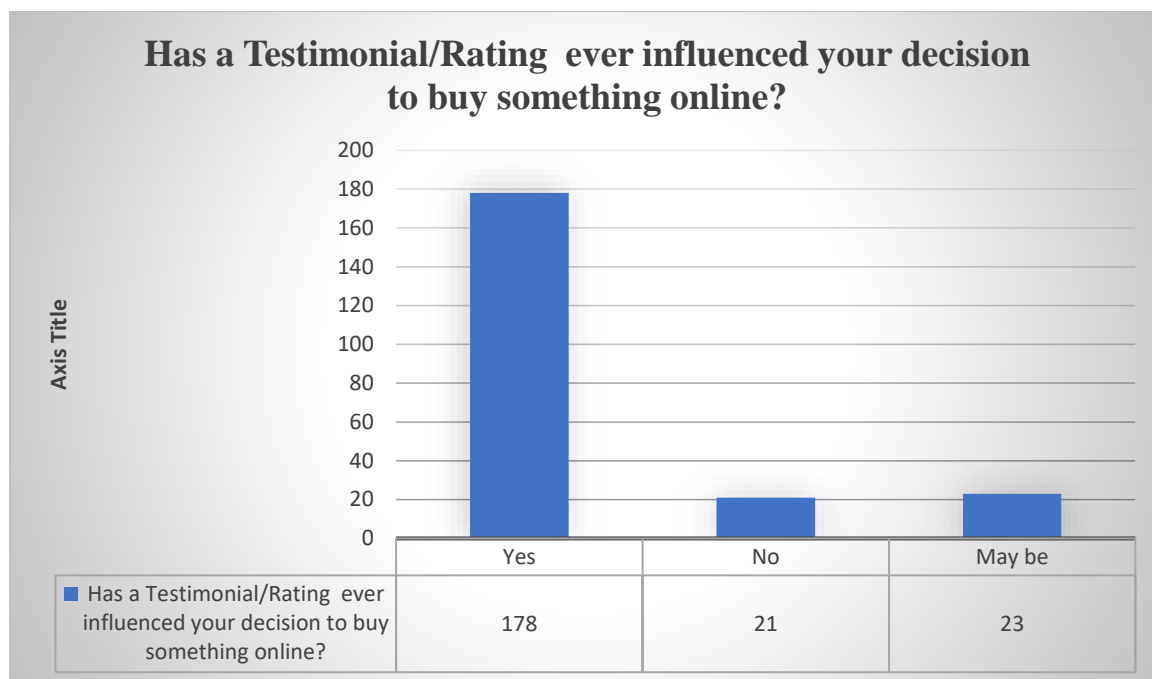


Figure 29- Has a Testimonial/Rating ever influenced your decision to buy something online?

Source: Own research, 2023

In general, it can be deduced that testimonials have a greater likelihood to impact the purchasing intentions of many of the participants. This, however, confirms that subjective norms significantly affect the online purchase intentions of consumers. Kim et al., (2013) state that every customer will have someone around them who will affect what they decide to buy online. This shows that outside factors ie testimonials can also have a direct or indirect effect on consumers' purchasing intentions (Ahmad et.al., 2022). Sandve and Øgaard (2014) indicate that subjective norms are often used as an initial stage in making decisions. According to Nor and Pearson (2008), there is a positive influence of subjective norms from friends, family, and colleagues as well as online testimonials when it comes to purchasing items online.

5.2.3 Low Stock Messages

This dark pattern shows limited quantities of a product, which may be misleading or false. In the thesis, respondents were asked whether they have observed low stock messages in their shopping experience before.

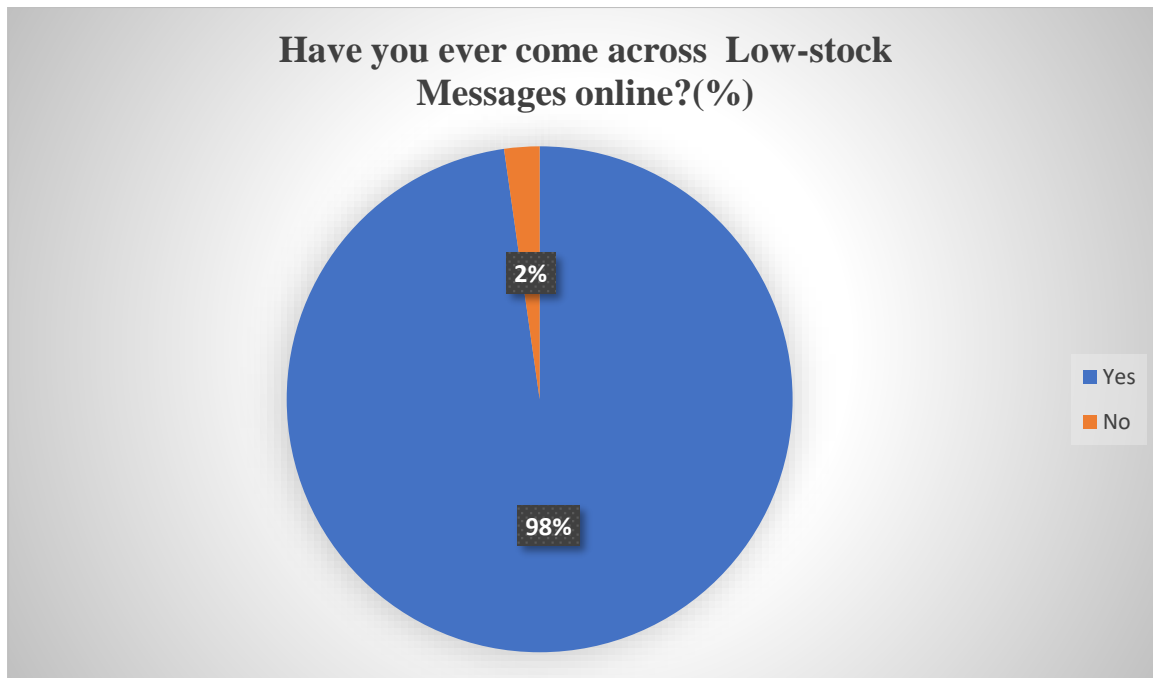


Figure 30 Have you ever come across Low-stock Messages online.

Source: Own research,2023

As represented in Figure 30, 217 respondents (98%) reported exposure to low stock messages, while 5 respondents (2%) indicated the opposite. Again, from Figure 31 below, 38 respondents (17%) indicated low stock messages are very likely to influence them to make an online purchase, 82 (37%) reported somewhat likely, 54 (24%) indicated somewhat unlikely, and 49 respondents (22%) clearly stated that low stock messages are very unlikely to influence them to make an online purchase.

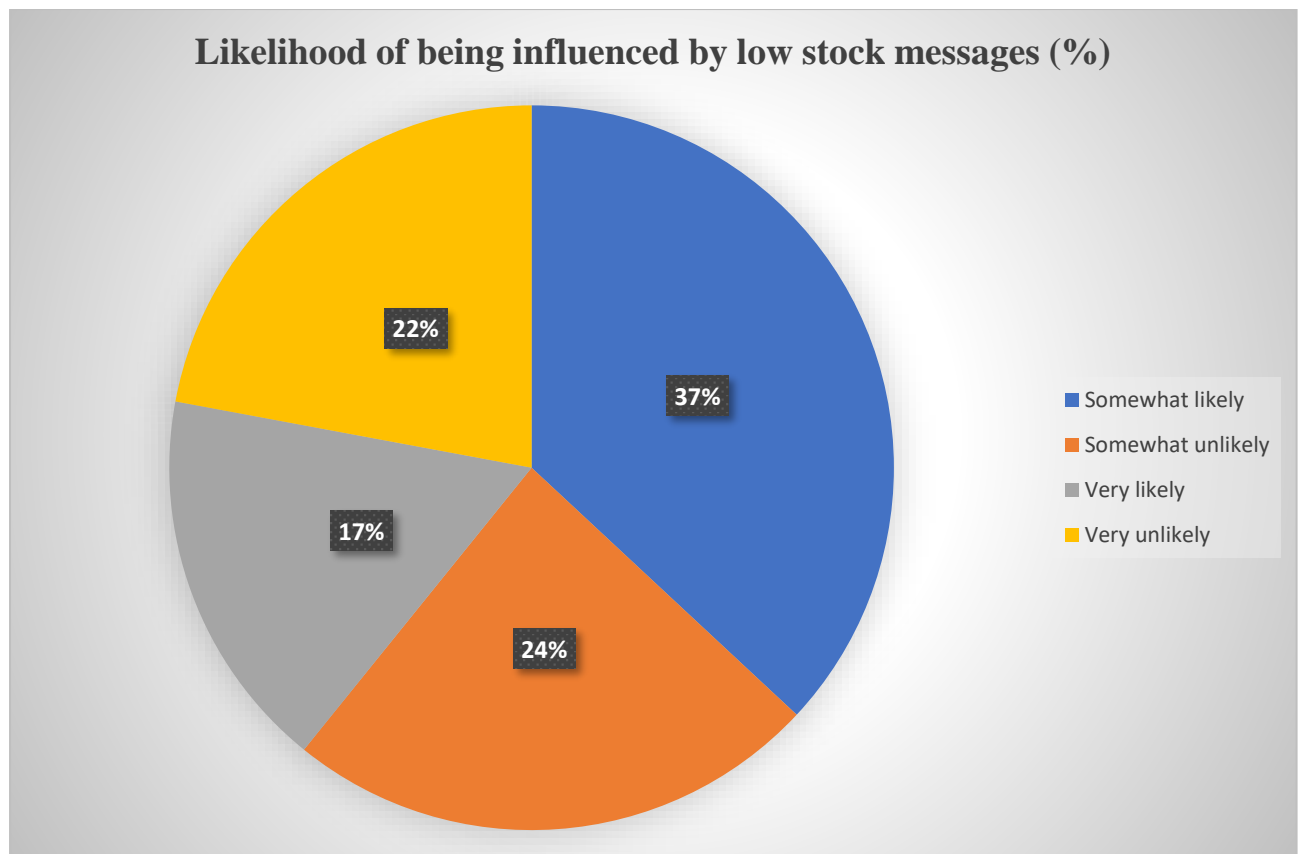


Figure 31 Likelihood of been influenced by low stock messages.

Source: Own research, 2023

Additionally, analysing the 120 respondents who responded, "**Very likely**" or "**Somewhat likely**" about the influence of low stock messages on their purchase intentions showed their agreement with the following statements.

As shown in Figure 32 below, 44 respondents (37%) strongly agreed with the statement "**If I wait for a while, the product might be sold out**", 63 respondents (52%) agreed, 12 respondents (10%) indicated neutral, 1 respondent (1%) disagreed and no respondent (0%) strongly disagreed. Also, concerning the statement "**I will regret not buying it instantly**", 27 respondents (23%) strongly agreed with this statement, 47 respondents (39%) agreed, 33 respondents (28%) stayed neutral, 9 respondents (7%) disagreed, and 4 respondent (3%) strongly disagreed. Again, 33 respondents (27%) strongly agreed to the statement "**The product might become scarce, and I will not know when it will be available.**", 60 respondents (50%) agreed, 20 respondents (17%) stayed neutral, 5 respondents (4%) disagreed, and 2 respondents (2%) strongly disagreed. Furthermore, the statement "**I feel pressured to purchase something I might not really like**" had 24 respondents (20%) indicating strongly agreed, 36 respondents (30%) agreed, 21 respondents (17%) staying Neutral, 26 respondents (22%)

disagreed, and 13 respondents (11%) strongly disagreed. Lastly, the statement *“Makes it easier to make a quick decision”* had 28 respondents (23%) indicating strongly agreed, 56 respondents (47%) agreed, 21 respondents (18%) staying Neutral, 11 respondents (9%) disagreed, and 4 respondents (3%) strongly disagreed.

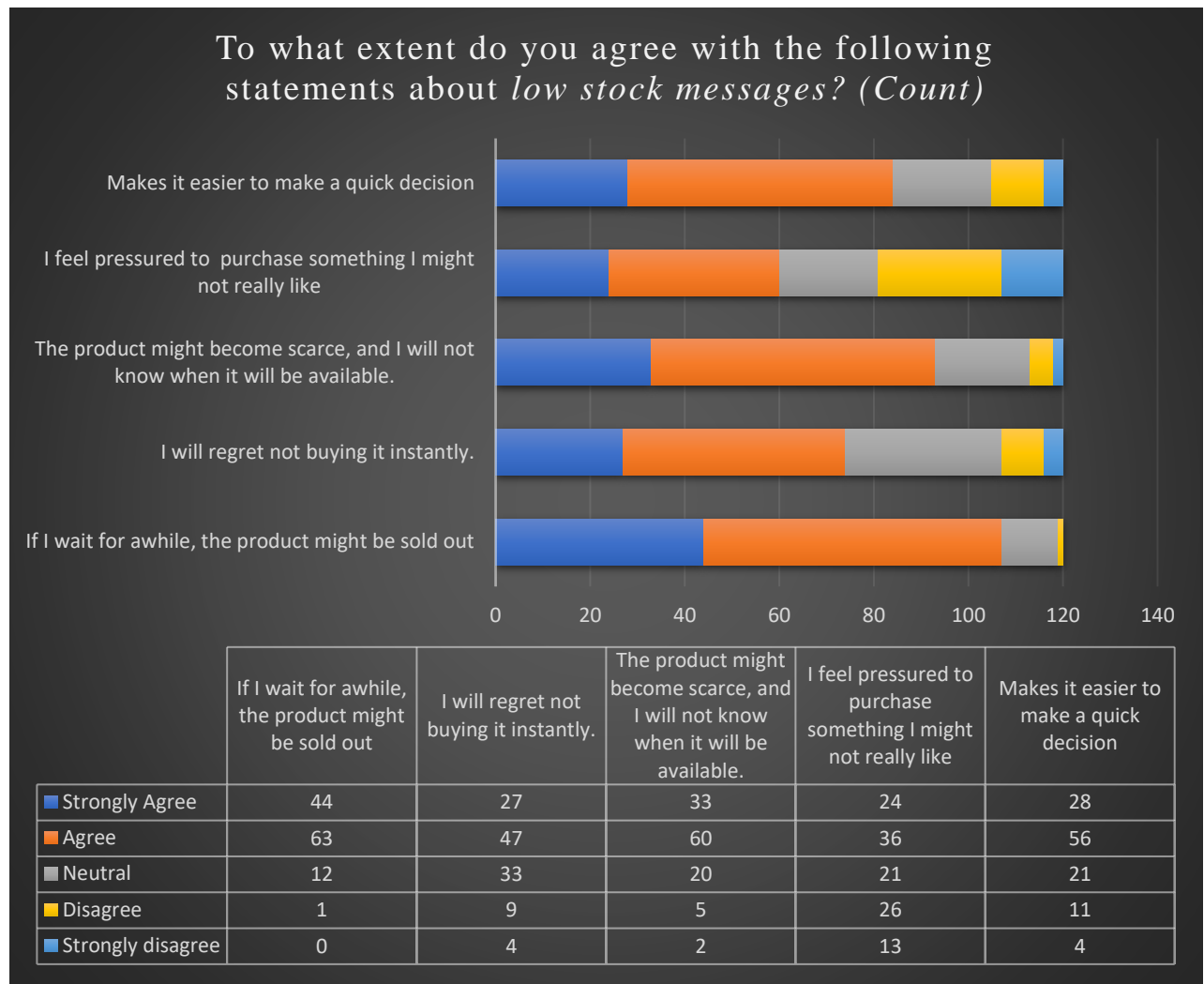


Figure 32 To what extent do you agree with the following statements about low stock messages.

Source: Own research, 2023

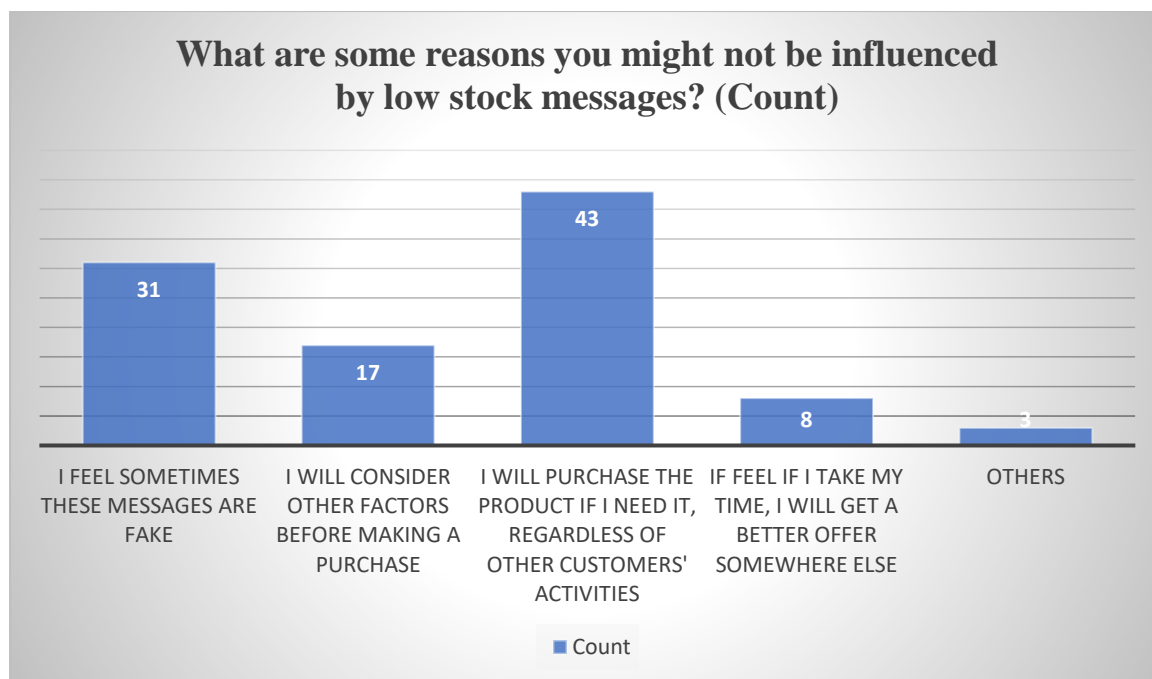


Figure 33 What are some reasons you might not be influenced by low stock messages?

Source: Own research, 2023

Furthermore, analysing the responses from the participant who indicated that low stock messages are “*Somewhat unlikely*” and “*very unlikely*” to influence their purchasing intentions shown that,

From Figure 33 above, 122 respondents indicated that it is a Somewhat unlikely or very Unlikely for low stock messages to influence their purchase intentions. 31 respondents (30%) stated that they feel sometimes these messages are fake, 17 respondents (17%) confirmed that they will consider other factors before making a purchase, 43 respondents (42%) stated that they will purchase the product if I need it, regardless of other consumers' activities, 8 respondents (8%) stated that they feel if they take their time, they will get a better offer somewhere else, and 5 respondents (3%) indicated other reasons.

Lastly, Finally, from a total of 222 respondents, it was observed that 106 respondents (48%) indicated that they have been influenced by low stock messages before, 92 respondents (41%) declared never been influenced before and 24 respondents (11%) reported maybe they have been influenced before or not by low stock messages (See figure 34).

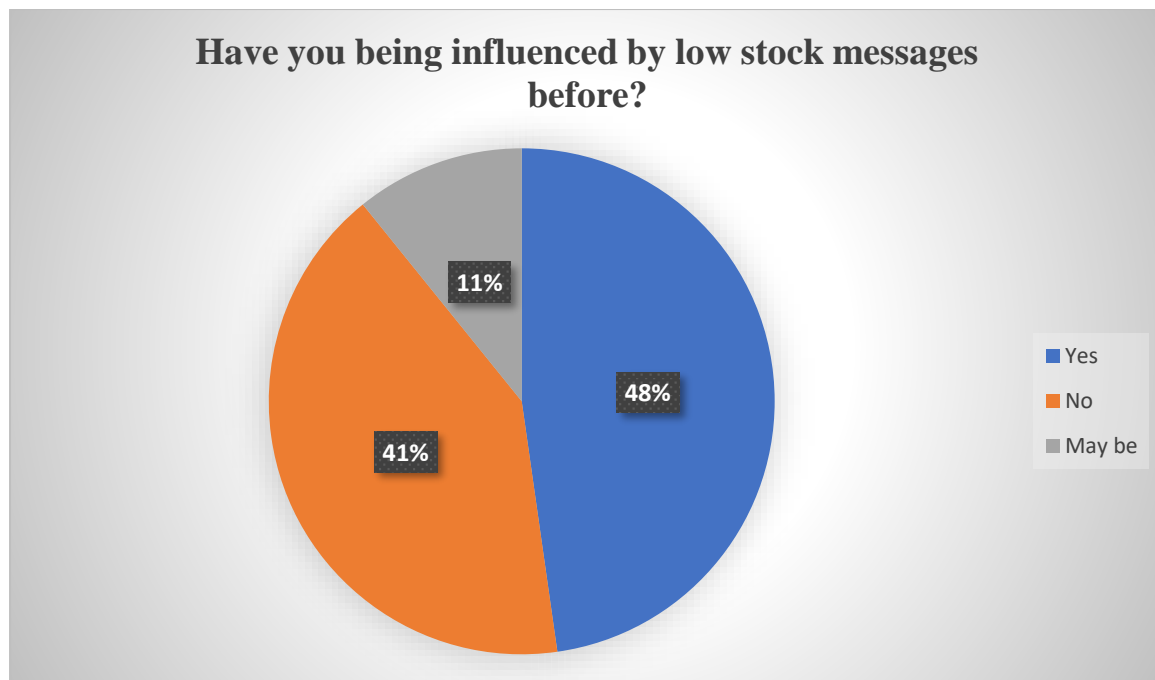


Figure 34 Have you being influenced by low stock messages before.

Source: Own research,2023

From the preceding, it can be inferred that most respondents are likely to be influenced by low stock messages. Low stock messages encourage consumers to make decision without proper deliberation. It also induces a sense of urgency, fear of missing out (FOMO), and scarcity, which convinces consumers that a product or service is desirable.

5.3 Level of Awareness of Dark Patterns in the Czech Republic

Awareness of dark patterns or how to spot dark patterns on websites has been a major issue of concern among researchers and regulators. According to OECD (2022), earlier research has documented the prevalence of specific dark patterns without necessarily using the term “dark pattern” In the light of this, this thesis also sought to find out the level of consumer awareness of dark patterns in the Czech Republic.

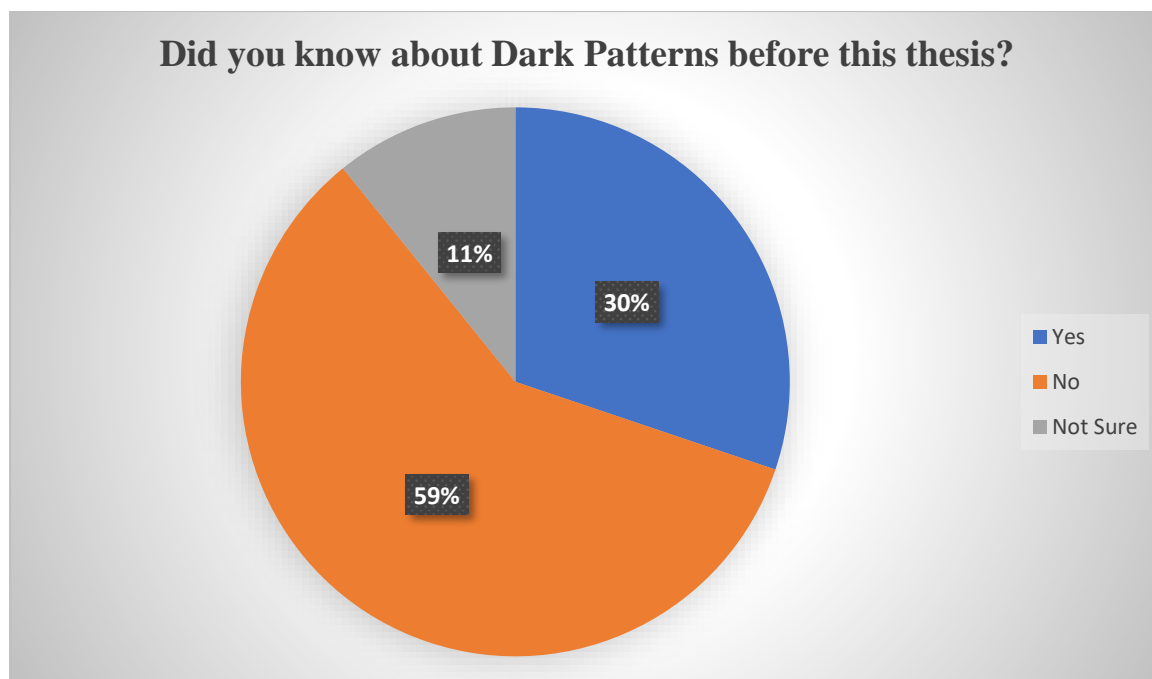


Figure 35 Did you know about Dark Patterns before this thesis?

Source: Own research, 2023

As shown in Figure 35, 131 respondents (59%) indicated they have not heard about dark patterns before this thesis. 67 respondents (30%) additionally declared that they knew about dark patterns prior to this thesis while 24 respondents (11%) were not sure whether they have heard about dark patterns prior to this thesis. Furthermore, some respondents attested to the fact they have been influenced by these dark patterns before but did not know the term to describe it. This is particularly true given that Luguri and Strahilevitz (2021) and the OECD (2022) have found that some consumers have experienced dark patterns before but did not know what to call them. Below are some responses from the participants:

“I’ve known they exist (especially on hotel booking sites) but didn’t know they had a name”.

“I have noticed these "sales techniques," but had not heard them called "dark patterns. “I am sometimes affected negatively by them, especially testimonials...if they don't seem genuine. I usually decided NOT to buy a product with a timer countdown. (I am affected by it, but negatively”

Subsequently, a cross-tabulation analysis was conducted to ascertain the degree of differences in awareness of dark patterns across demographic variables, such as age, gender, and level of education.

Table 4: Cross-Tabulation Analysis

Age									
		18-24	25-34	35-44	45-54	55 and above	Total	P value	Decision
Did you know about dark patterns before this thesis	No	14	55	48	10	4	131	0.065	Not Significant
	Not Sure	5	8	9	2	0	24		
	Yes	15	30	11	6	5	67		
Total		34	93	68	18	9	222		
Level of Education									
		Bachelor's Degree	High School	Master's Degree	Ph.D.	Without education	Total	P value	Decision
Did you know about dark patterns before this thesis	No	67	20	39	4	1	131	<0.001	Significant
	Not Sure	7	4	12	1	0	24		
	Yes	23	24	11	9	0	67		
Total		97	48	62	14	1	222		
Gender									
		Female	Male	other	Prefer not to say	Total		P value	Decision
Did you know about dark patterns before this thesis	No	59	71	1	0	131		0.001	Significant
	Not Sure	9	11	2	2	24			
	Yes	24	42	0	1	67			
Total		92	124	3	3	222			

Source: Own research, 2023

Table 4 reveals that although most respondents had never heard of dark patterns prior to this thesis, there were significant differences between education level, age, and gender. Using a Chi-square test with a significance level of 0.05, it was determined that there were no significant differences between dark pattern awareness and respondent's age ($p=0.065>0.05$). In addition, the thesis found statistically significant differences between respondents' awareness of dark patterns and their level of education ($p=<0.001<0.05$) and gender ($p=0.001<0.05$).

5.4 General Perception about Dark Patterns

In addition to the specific questions addressed in the thesis, another objective of the thesis was to determine how participants generally perceive deceptive countdown timers, false testimonials, low stock messages, and dark patterns in general. As in previous research (Bongard-Blanchy et al., 2021; Luguri & Strahilevitz, 2021), it was anticipated participants will have an unfavourable perception towards dark patterns in general. The results of this thesis were in line with the results of other studies (Bongard-Blanchy et al., 2021; Luguri & Strahilevitz, 2021) in which participants were asked about what they believe and how they feel about dark patterns.

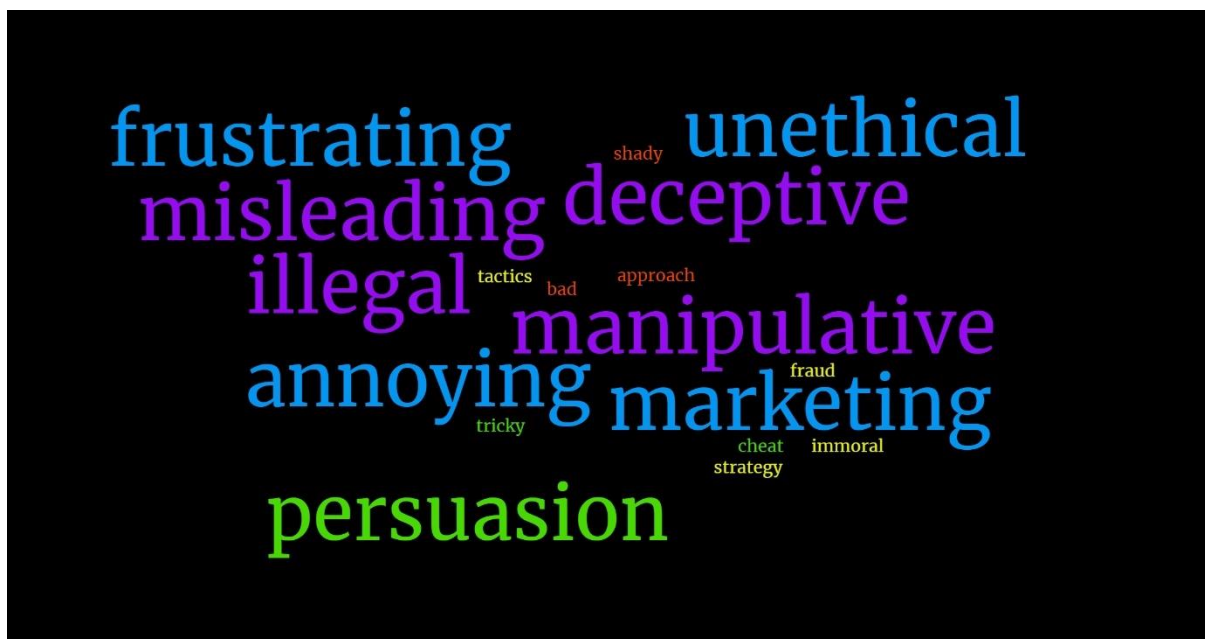


Figure 36- Word cloud showing consumers' perceptions about dark patterns.

Source: Own research, 2023

From figure 36, most of the respondents mentioned that dark patterns are *manipulative, cheat, illegal, deceptive, misleading, Unethical, tricky tactics, Immoral, Annoying Means to influence consumers decision.*

Some respondents said:

“They are unethical and deploy signals that deceive our receptors the same way a slot machine would. It is illegal in the Czech Republic to deploy such methods online as well as offline”.

“Unethical, possibly should be illegal”.

“Its same technique that is used, in brick stores although adapted for online space, i agree used on certain types of population they can result in better sales. But like every marketing technique it is usually using manipulation (targeting emotions) so people who are less resistant against manipulation are usually target audience”

“Marketing has always been manipulative, but it's slowly becoming common the digital environment and automation make it easy for some very insidious business practices to become the norm. this is, however, the natural result of free market capitalism. whoever is willing to do the sneakiest, most novel morally bankrupt things, sells the most product.”

“I find them worrying because they have a subconscious influence and may persuade people to buy things they don't need or can't afford, or from an unreliable source”.

However, it was also interesting to observe that, some of the participants do not mind about the use of dark patterns and see it as a simple marketing trick. Respondents' views are capture below:

“I think it is an advertising strategy”.

“Also, dark pattern is the least of my concern when buying online, granted it may influence buying decision”.

“I see it as a way of marketing and getting the customer attention and influence their buying decision.

“If they are consistent with the truth, they are fine”.

The findings confirm Lupianez-Villanueva et al., (2022) assertion that Consumers tend to tolerate and become accustomed to the existence of these unfair practises and see it as part of their usual digital experience.

5.5 Future Behaviour towards dark patterns

Finally, the thesis asked the respondents if they would act differently in the future if they experienced dark patterns. This question was posed to determine if thesis in a way help raised awareness about dark patterns and whether informing people about them might help avoiding dark patterns.

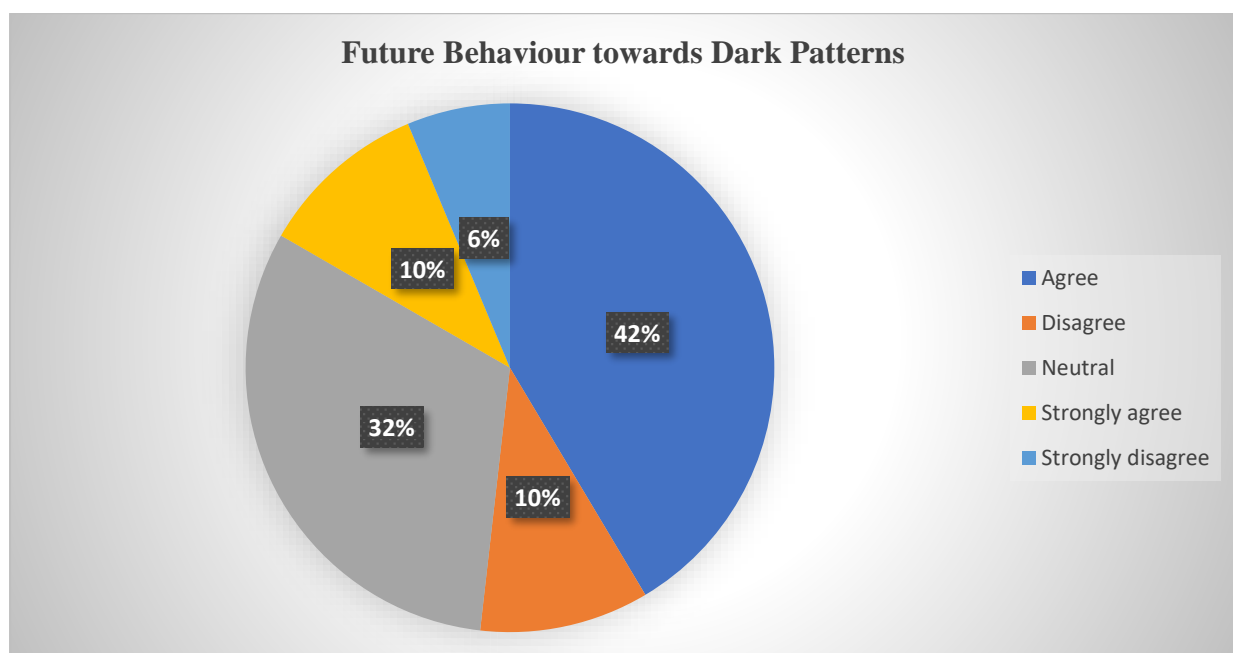


Figure 37 Future Behaviour towards Dark Patterns

Source: Own research, 2023

From Figure 37, 23 respondents (10%) strongly agreed that they would behave differently when re-encountering dark patterns compared to their earlier situation, 92 respondents (42%) agreed, 70 respondents (32) declared they will stay neutral, 23 respondents (10%) disagreed, and 14 respondents (6%) strongly disagreed. Given that most respondents indicated a willingness to change their behaviour in response to encountering dark patterns suggests that increasing awareness may be an effective means of promoting protective attitudes among consumers. Nonetheless as 32% of respondents were uncertain, it is plausible that raising awareness and understanding alone may not be enough to protect consumers from the effects

of dark patterns. As a result, additional measures should be taken in addition to raising consumer awareness.

5.6 ANSWERING THE RESEARCH QUESTIONS

RQ1: What is the level of awareness of dark patterns in the Czech Republic?

Based on this thesis, most respondents (59%), did not know about dark patterns prior to this thesis, compared to 30% who had heard about dark patterns before participating in this thesis. Furthermore, some respondents admitted to being affected by dark patterns in the past but did not know the term for it. This confirms Luguri and Strahilevitz (2021) and the OECD (2022), assertion that most people have been affected by dark patterns in the past but do not know what to call them. Furthermore, using a cross-tabulation analysis and the Chi-square test to show how the level of awareness of dark patterns varies among the demographic characteristics revealed no significant differences between dark pattern awareness and respondents' ages ($p=0.065>0.05$). However, there were statistically significant differences in respondents' awareness of dark patterns and the level of education ($p=0.001<0.05$) and gender ($p=0.001<0.05$).

RQ2: How do dark patterns affect consumers purchase intentions?

The thesis also investigated three distinct categories of dark patterns, specifically Urgency (Countdown timers), Social Proof (Testimonials), and Scarcity (Low stock Messages). Regarding Countdown timers, the thesis results indicate that most of the participants are unlikely to be influenced by the presence of such countdown timers online. The primary factor contributing to this phenomenon is that consumers' purchasing intentions are being driven by need rather than promotional incentives or price reductions. Several participants also mentioned that they consider various factors prior to engaging in an online purchase. On a different note, participants who indicated the likelihood of being influenced by a countdown timer mentioned time pressures, fear of missing out, and scarcity are some of the reasons for believing products marketed with countdown timers are more valuable and desirable.

Furthermore, most of respondents stated that they are likely to be influenced by testimonials. Most consumers believe that testimonials help in providing useful advice from people who have used the service or product (subjective norms), giving an idea about the product quality, and building trust in the product/service, which are the primary reasons why online testimonials will influence their purchase intentions. Some respondents think that fake testimonials are the primary reason why they might not be influenced by online testimonials.

Finally, most respondents stated that low stock messages are likely to impact their purchasing intentions. They claim that the scarcity bias linked with low stock messages causes them to

make quick choices without due thought. Furthermore, it creates a feeling of urgency and fear of missing out (FOMO), which persuades them that a product or service is desirable.

Generally, according to Mathur et al. (2019), e-commerce websites display a higher frequency of dark patterns that exploit urgency/scarcity (such as low-stock messages or countdown timers) and social proof (such as testimonials) compared to other types of dark patterns. However, different dark patterns affect consumer decisions differently. The findings of this thesis suggest that social proof (testimonials) and scarcity (low stock messages) are more likely to influence consumer purchasing intentions. This is confirmed by Drossos et al., (2019), who argue that the use of social proof and scarcity cues lead to an increase in conversion rates, purchase intentions, and impulse buying.

RQ3: What do consumers think and feel in general about dark patterns?

Most participants indicated that dark patterns are characterised by manipulative, deceptive, and misleading tactics that are considered unethical, illegal, and immoral. These tactics are perceived to influence consumer decision-making and are often viewed as annoying and tricky. The results of our thesis were in accordance with the findings of other studies by Bongard-Blanchy et al., (2021) and Luguri & Strahilevitz, (2021). However, it was also interesting to find out that some of the participants demonstrated an acceptance towards dark patterns and perceived them as a simple marketing trick. Overall, most of the respondents agreed that they would act differently in case they re-encounter dark patterns in the future.

6 RECOMMENDATIONS

Previous studies have shown that users are becoming more conscious of the manipulative and deceptive nature of many dark patterns, and as such based on the findings of the thesis the following recommendations are suggested:

There is a lack of consumer awareness regarding the use of dark patterns by businesses; however, once these have been recognized, consumers have a negative perception of these practises. This enforces the idea that educating consumers about potential risks associated with patterns can serve as the first step in the implementation of preventive measures. In the Czech Republic, this can be accomplished by practitioners, policy makers, and consumer protection agencies through awareness initiatives aimed at educating consumers on these practises.

Furthermore, consumers are being encouraged to use technical consumer tools and measures, which may assist in spotting dark patterns. Some of these precautions may include installing browser plugins or viewing websites in incognito mode. Although these techniques do not ensure the legitimacy of these dark patterns, they can aid in their detection. Overall, such tools and efforts can be helpful, but they should be viewed as supplementary to strong regulation and law enforcement measures.

Additionally, the UI/UX (user interface/user experience) design community and businesses should increase awareness regarding dark patterns and implement ethical design standards and best practises to protect the consumers' interests. Thus, it is recommended that designers and companies refrain from utilising such tactics as they have a negative effect on the shopping experience of consumers and brand reputation.

Finally, policymakers and consumer protection agencies play a significant part in preventing consumers from becoming victims to dark patterns. There is a presumption that companies that use dark patterns can gain unfair advantage over competitors that do not use them. These advantages can come in the form of obtaining more sales, personal data, or preventing consumers from selecting competitive companies. It is then the responsibility of policy makers and customer protection agencies to establish a code of conduct, ethics, and legislation that safeguard the activities of consumers who engage in online purchases and create a level playing field for all businesses. In addition to this, they should endeavour to enforce these regulations and shame companies that use these dark patterns. Furthermore, the relevant agencies can conduct an online sweep and surveillance exercise to find dark patterns used by vendors who sell their goods and services in the entire country.

7 AREAS FOR FURTHER RESEARCH

This thesis makes suggestions regarding possibilities for future research. This thesis focused on countdown timers, online testimonials, and low-stock messages, but there are several dark patterns whose effects are unknown. Future research can be conducted similarly to investigate the influence of other dark patterns on the purchasing intentions of consumers. Moreover, some respondents mentioned that dark patterns can have a negative effect on them. While some research has examined the effects of dark patterns on consumer decision-making, the true harm they cause consumers has received less attention. It would be informative to conduct research on the actual harm that dark patterns cause to online shoppers in the Czech Republic.

III. PROJECT

8.0 Introduction

This section presents the project, which is based on the findings of the thesis and the theoretical understanding of dark patterns. In this project, an advocacy and awareness campaign will be designed for consumers, as well as consumer protection agencies, to broaden their understanding and recognition of dark patterns.

8.1 Background of Project

There is an increasing concern that if dark patterns are not addressed early, they will cause substantial damage to consumers. It is assumed that these strategies are constantly changing, making it challenging to recognise them, much less overcome them. These practices, which are prevalent in online user experiences, steer, mislead, force, or manipulate consumers into making decisions that are not always in their best interests. Consumers make choices online daily, especially when buying an item or using a service, making them more susceptible to these tactics. Dark patterns are known to impede consumer decision making, cause financial loss, and particularly harm certain consumers, such as the less educated. In particular, the laws and regulations also do not offer effective protection for consumers. Given the growing need to fully address shady business patterns, it is critical to adopt counter-protective measures that safeguard the interests of consumers. Considering this, the aim of the initiative is to create the awareness and broaden the understanding of dark patterns among consumers and consumer protection agencies.

8.2 Project Goal and Objectives

8.2.1 Project Goal

Based on the context and rationale, the aim of this project is to create a call-to-action advocacy and awareness campaign that educates consumers, particularly online buyers, about dark patterns, and their effects in the Czech Republic.

8.2.2 Project Objectives

The objectives of this project include:

- ✓ To increase the public awareness particularly online buyers about dark patterns.
- ✓ To help build the capacity of the public on how to spot some of these dark patterns.
- ✓ To create a system of reporting and platform for discussing issues pertaining to dark patterns.

8.3 Project Scope

8.3.1 Target Group

Evidence suggests that dark patterns are more successful on mobile devices or smaller screens where content is less noticeable. Though the information effort is aimed at the public, a greater emphasis will be placed on individuals between the ages of 25 and 34. Furthermore, this group comprises the highest percentage of internet consumers, the majority of whom conduct their transactions via mobile phones and apps, making them more vulnerable to dark patterns.

8.3.2 Overarching Project Activity

This project's primary outcome will be the creation of a website. The key objective of the website will be to use interactive methods to educate consumers about dark patterns. This will cover a lot of information on how to shop online as well as advice on how to prevent the more common types of dark patterns. Furthermore, the website will serve as a significant forum for consumers to report potential dark patterns websites and engage with practitioners in the field.

8.4 Project Activities Plan

8.4.1 Requirements Gathering and Documentation

During this phase of the project, there will be the gathering of the project's requirements while outlining the needs of stakeholders to create detail plan to assist in meeting the project goals. This will entail discussions and consultations with stakeholders such as relevant businesses, consumer protection agencies, and professionals in the field to ensure that the project activities runs smoothly and that all the project's requirements and needs are met. During this period, volunteers will also be sought to assist in reviewing design ideas, gathering materials, reviewing layouts, and setting criteria for subordinate sites, and among other things.

8.4.2 Website Design

Preparation, planning, design, and development will all be part of the website creation process (See Figure 38). The preparation phase will set the foundation for the website's design. It will also capture essential parameters such as time, a review of the website's objective, money, and how the website will look and operate in the long run. Preliminary results will be used to approve the website design.

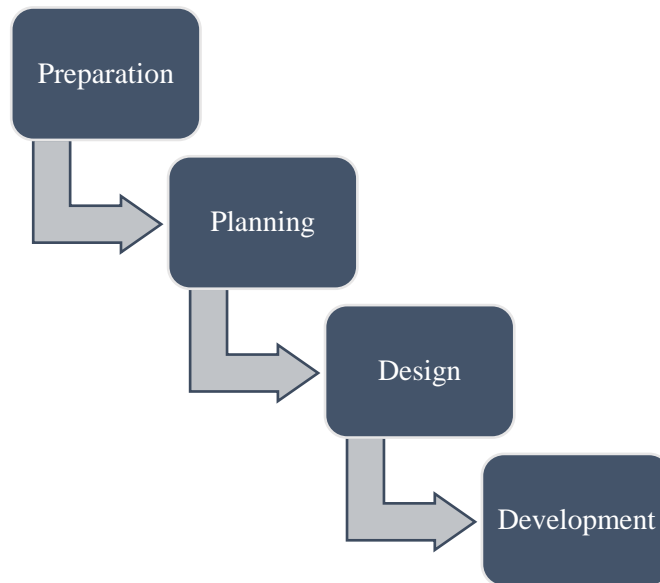


Figure 38- Website design stages

Source: Own research,2023

The planning stage will involve identifying the requirements, detailing a site outline, and collecting important assets such as images, written content, and databases. This will however give a structure to the website. Figure 39 shows the outline of the website.

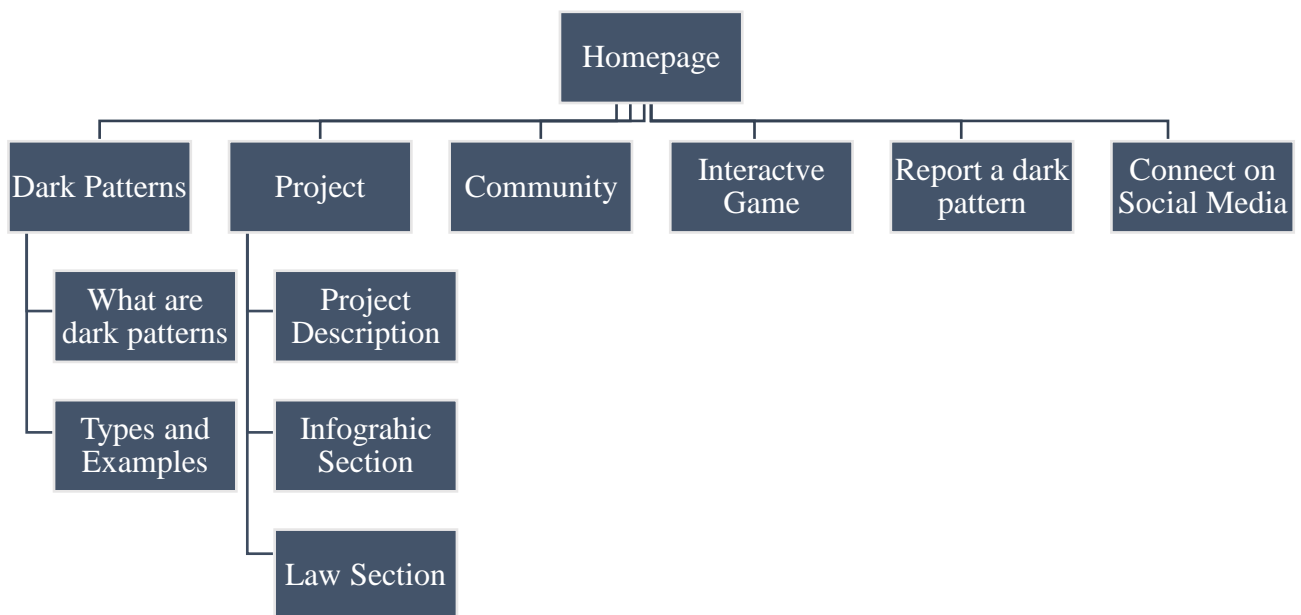


Figure 39 Site Map of website

Source: Own research,2023

The design phase will examine the specifics, ensuring that each component contributes to the project's goals. This will also provide a complete website (skeleton) and will seek final design direction approval from all partners. The website will be completed in the development stage. It will include evaluating each page template type for effectiveness, accessibility, and browser compatibility for all text and images, followed by the website's launch.

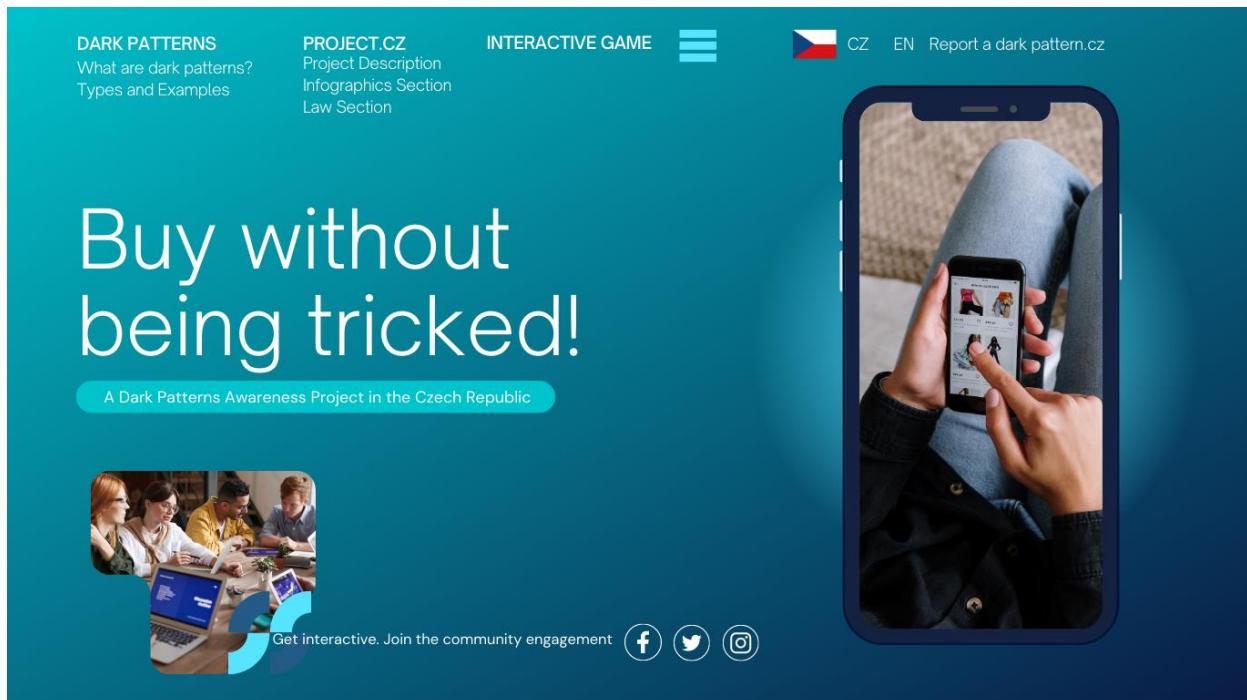


Figure 40: Sample functional website for the project

Source: Own research, 2023

8.4.3 Developing a marketing or communication strategy

Following the development and debut of the website, a communication or marketing strategy will be implemented to attract people to the site. Paid advertising and sponsored story ads on social media (Facebook, Twitter, Instagram, YouTube, and so on) will be among the strategies that will be utilized. In addition, an online community will be established for people who are enthusiastic about dark patterns and want to express themselves and weigh in on the topic. Incorporating this community will be a great way to start a discussion and increase traffic. Finally, there will be targeted online ads to raise awareness during special promotional and deal times such as Cyber Monday, Black Friday, Valentine's Day, and Christmas Eve etc.

8.4.4 Monitoring and Evaluation of Project

Some critical performance indicators will be measured to ensure that the project meets its goals. This will include indicators such as website traffic, time spent on the website, traffic from social media platforms, and click-through across sites. To accomplish this, software such as Google Analytics (to measure traffic) and heat mapping software (to measure the number of clicks on website pages) will be used. Also, since each step of the implementation process serves as an input to the following stage, project monitoring will be done throughout all the phases. This will increase effective and efficient output at each level of the implementation process. To determine the progress being made and provide the required insights, there will also be a mid- and end-project evaluations.

8.5 Project Schedule

The project's implementation will take a total of 7 months. The first two months will be devoted to collecting requirements and documentation. The month of August will be used for website preparations, followed by planning and design between the months of August and September. In October, the website will be developed, evaluated, and launched. The months of October, November, and December will be used to develop a marketing or advertising plan. Throughout the seven-month period, monitoring and evaluation will take place. The shaded regions (cells) represent the periods of operation in months for each related activity. (See Table 5)

Table 5 Project Schedule

Activity	Time (Months-2023)						
	June	July	August	September	October	November	December
Requirements Gathering and Documentation							
Preparations							
Planning							
Design							
Development and Testing / Launch							
Developing a marketing or communication strategy.							
Project Monitoring and Evaluation							

Source: Own Research, 2023

8.6 Cost Breakdown

The total expenditure of the project is estimated to be around 72,000 CZK. The breakdown of the cost is shown in Table 6. The biggest cost items (35% each) are the actual website design and developing a marketing or communication plan.

Table 6 Cost Breakdown of Project

Activity	Cost (CZK)	Percentage of Total Cost (%)
Requirements Gathering and Documentation	7,000	9
Website design	25,000	35
Testing and launching of Website	10,000	14
Developing a marketing or communication strategy.	25,000	35
Project Monitoring and Evaluation	5,000	7
Total	72,000	100

Source: Own research, 2023

8.7 Project Conclusion

As mentioned in previous chapters, there is some evidence that targeted initiatives to increase consumers' awareness of dark patterns could help in identifying and avoiding them. It is suggested that Customer Protection Agencies and Policymakers in the Czech Republic should make an effort to intensify initiatives targeted at drawing consumers' attention to these unethical online practices, as being done in countries such as Germany, Argentina, Poland, Switzerland, and others.

CONCLUSION

The thesis aimed at finding out the level of dark pattern awareness and its influence on the purchase intentions of consumers in the Czech Republic. Specifically, the following objectives were considered: To ascertain the level of consumer awareness of Dark patterns in the Czech Republic; To determine the extent to which dark patterns affect consumers' purchase intentions. To understand how consumers think and feel in general about dark patterns?

To achieve these objectives, this thesis used a survey research design combined with quantitative research methodologies and elicited responses from 223 respondents of which 222 were considered usable. Though there are lot of dark patterns, the thesis only considered 3 types of dark patterns namely: countdown timers, testimonials, and low stock messages.

The thesis established that most respondents (59%), did not know about dark patterns prior to this thesis, compared to 30% who had heard about dark patterns before participating in this thesis. Furthermore, some respondents admitted to being affected by dark patterns in the past but did not know the term for it. Considering the three (3) categories of dark patterns captured in this thesis also revealed that Testimonial and low stock messages are more likely to influence their online purchase intentions more than countdown timers. The thesis also found out that Dark patterns influence participants' purchase intentions through a variety of reasons, including urgency, scarcity biases, and fear of missing out (FOMO). Regarding the general notion about dark patterns most respondents indicated that dark patterns are manipulative, deceptive, and misleading tactics that are considered unethical, illegal, and immoral. Interestingly others thought of it a mere marketing trick.

Based on these findings, the thesis recommends that the public should be educated about dark patterns, how to recognize them, and the impact they have on individuals, Secondly, businesses and UI/UX (user interface/user experience) design community are encouraged to be transparent about their design practices and to avoid using dark patterns ie adopting ethical practises. Lastly, consumer protection agencies, policymakers should collaborate to lobby for changes in legislation and regulations that protect consumers from these manipulative practices.

Finally, the thesis proposed a project plan targeted at developing a call-to-action advocacy and awareness campaign in the Czech Republic using an interactive website that informs consumers, especially online consumers, about dark patterns, and their effects.

Based on the above analysis, it can be stated that the research questions were answered and the objectives of this thesis were fulfilled.

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LIST OF ABBREVIATIONS

CITP- Centre for Information Technology Policy.

FOMO- Fear of Missing Out.

OECD-Organisation for Economic Co-operation and Development.

TAM - Theory of Reasoned Action.

TPB - Theory of Planned Behaviour.

TRA- Technology Acceptance Model.

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APPENDICES

APPENDIX P I: ORIGINAL QUSTIONNAIRE

APPENDIX P II: TRANSLATION OF THE QUESTIONNAIRE IN CZECH

APPENDIX P I: ORIGINAL QUESTIONNAIRE

Dear Respondent

I am conducting research into "Dark patterns awareness and its influence on consumer purchasing intentions in the Czech Republic". Your participation in this study is greatly appreciated, and I would appreciate your candid answers to the following questions. This study is strictly for academic purposes, and any information provided will be utilised only for this kind of reason. Your participation will be kept strictly confidential and anonymous. The anticipated completion time is between 5 and 10 minutes. Thank you very much!

** Definition of Keyword: Dark patterns are carefully designed user interfaces used by websites and applications to entice consumers to make decisions they would not normally or intentionally make.*

A. ONLINE PURCHASING EXPERIENCE

1. Have you ever purchased something online?
 - a. Yes
 - b. No

2. How frequently do you make online purchases?
 - a. Very frequently
 - b. Frequently
 - c. Occasionally
 - d. Rarely
 - e. Very Rarely

3. What is your main motivation before buying a product online?
 - a. Need
 - b. Promotions/Discounts
 - c. Referrals/Recommendations
 - d. Convenience
 - e. Can find products stores don't have
 - f. Wide range of choices
 - g. Other

4. What do you typically purchase when you shop online? (You may select multiple options)
Please select 3 options.
 - a. Books, movies, music, and games
 - b. Clothing, Footwear, and accessories

- c. Health, personal care, and beauty
- d. Consumer electronics
- e. Food and beverage
- f. Furniture and décor
- g. Travel (airline tickets, hotels, car rentals)
- h. Other

B. DARK PATTERNS AND ONLINE PURCHASE INTENTIONS

** Definition of Keyword: Dark patterns are carefully designed user interfaces used by websites and applications to entice consumers to make decisions they would not normally or intentionally make.*

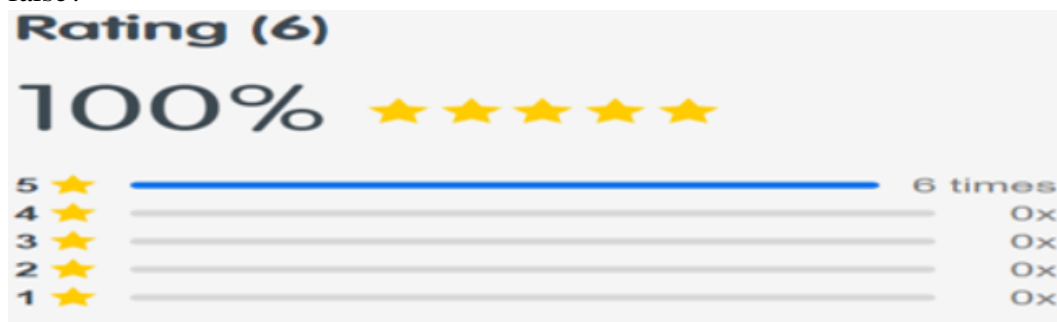
Please share your thoughts on any of these dark patterns

5. Have you ever come across a countdown timer online, indicating a discount, promotion, or free shipping will expire if a purchase is not completed within the defined offer deadline?



- a. Yes
 - b. No
6. In the event that you want to buy something online, how likely are you to be influenced by a countdown timer?
- a. Very likely
 - b. Somewhat likely
 - c. Somewhat unlikely
 - d. Very unlikely
7. To what extent do you agree with the following statements about countdown timers?
- a. If I wait for a while, I would miss out on a great deal.
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree
 - b. I will come to regret not buying the product right away.
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree
 - c. If I miss the promotion, the price for the product will probably increase.
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree
 - d. I feel persuaded to purchase something I don't actually need.
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree
 - e. I feel it makes it easier to make a quick decision
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree

8. What are some reasons you might not be influenced by a countdown timer?
- I will purchase the product if I need it, regardless of the price or promotion deadline
 - Sometimes the prices don't change even after the deadline
 - I will consider other factors before making a purchase
 - I prefer not to be persuaded if buying a product online
 - Other
9. Has a countdown timer ever influenced your decision to buy something online?
- Yes
 - No
 - Maybe
10. Have you ever come across testimonials online, displaying other consumers' views or ratings on a product's page from which the source is unknown or may be misleading or false?



- Yes
 - No
11. In the event that you want to buy something online, how likely are you to be influenced by Testimonials?
- Very likely
 - Somewhat likely
 - Somewhat unlikely
 - Very unlikely
12. To what extent do you agree with the following statements about Testimonials?
- Provides useful advice from people who have used the service or product
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - Make it easier to decide
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - Give an idea about the product's quality
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree

- d. Build my trust for the products/Service
 i. Strongly Agree ii. Agree iii. Neutral iv. Disagree v. Strongly Disagree

13. What are some reasons you might not be influenced by Testimonials/Ratings?

- a. I will purchase the product if I need it, regardless of other consumers' activities
 b. I will consider other factors before making a purchase
 c. I feel sometimes these testimonials are not real
 d. Other

14. Has a Testimonial/Rating ever influenced your decision to buy something online?

- a. Yes
 b. No
 c. Maybe

15. Have you ever come across Low-stock Messages online displaying limited product quantities available?



- a. Yes
 b. No

16. In the event that you want to buy something online, how likely are you to be influenced by Low-stock Messages?

- a. Very likely
 b. Somewhat likely
 c. Somewhat unlikely
 d. Very unlikely

17. To what extent do you agree with the following statements about low stock messages?

- a. If I wait for a while, the product might be sold
 i. Strongly Agree ii. Agree iii. Neutral iv. Disagree v. Strongly Disagree
- b. I will regret not buying it instantly
 i. Strongly Agree ii. Agree iii. Neutral iv. Disagree v. Strongly Disagree
- c. The product might become scarce, and I will not know when it will be available
 i. Strongly Agree ii. Agree iii. Neutral iv. Disagree v. Strongly Disagree

- d. I feel pressured to purchase something I might not really like
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree
- e. Makes it easier to make a quick decision
 - i. Strongly Agree
 - ii. Agree
 - iii. Neutral
 - iv. Disagree
 - v. Strongly Disagree

18. What are reasons you might not be influenced by low stock messages?

- a. I will purchase the product if I need it, regardless of other consumers' activities
- b. I will consider other factors before making a purchase
- c. I feel sometimes these messages are fake
- d. I feel if I take my time, I will get a better offer somewhere else
- e. Other

19. Have low stock messages ever influenced your decision to buy something online?

- a. Yes
- b. No
- c. Maybe

C. DEMOGRAPHICS

20. What gender do you identify as?

- a. Female
- b. Male
- c. Other
- d. Prefer not to say

21. What is your age?

- a. 18-24
- b. 25-34
- c. 35-44
- d. 45-54
- e. 55 and above

22. What is your level of education?

- a. Without education
- b. High School
- c. Bachelor's degree
- d. Master's degree
- e. PHD

23. Did you know about dark patterns before this study?

- a. Yes
- b. No

c. Not sure

24. If I come across dark patterns again in the future, I will act differently

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

25. What do you think about dark patterns in general?

APPENDIX P II: TRANSLATION OF THE QUESTIONNAIRE IN CZECH

Vážený Respondente,

Provádím výzkum "Povědomí o tmavých vzorech a jeho vliv na nákupní záměry spotřebitelů v České republice". Vaší účasti na tomto výzkumu si velmi vážím a budu ráda za Vaše upřímné odpovědi na následující otázky. Tato studie je určena výhradně pro akademické účely a veškeré poskytnuté informace budou využity pouze z tohoto důvodu. Vaše účast bude přísně důvěrná a anonymní. Předpokládaná doba vyplnění dotazníku je 5 minut. Děkuji Vám za pozornost!

*Tmavé vzory jsou pečlivě navržená uživatelská rozhraní používaná webovými stránkami a aplikacemi, která mají spotřebitele přimět k rozhodnutí, které by normálně nebo záměrně neučinili.

A. ZKUŠENOSTI S NÁKUPEM ONLINE

1. Zakoupili jste někdy zboží přes internet?
 - c. Ano
 - d. Ne

2. Jak často nakupujete na internetu??
 - f. Velmi často
 - g. Často
 - h. Občas
 - i. Zřídka
 - j. Velmi zřídka

3. Jaká je vaše hlavní motivace před nákupem produktu na internetu?
 - h. Potřeba
 - i. Akce/slevy
 - j. Doporučení
 - k. Pohodlí
 - l. Možnost najít produkty, které obchody nemají
 - m. Široká nabídka
 - n. Další

4. Co obvykle nakupujete na internetu? (Můžete vybrat více možností)
 - i. Knihy, filmy, hudbu a hry
 - j. Oblečení, obuv a doplňky
 - k. Zdraví, osobní péče a krása
 - l. Spotřební elektroniku
 - m. Potraviny a nápoje
 - n. Nábytek a dekorace
 - o. Cestování (letenky, hotely, pronájem aut)
 - o. Další

B. TMAVÉ VZORY A ZÁMĚRY NAKUPOVAT ONLINE

** Tmavé vzory jsou pečlivě navržena uživatelská rozhraní, které webové stránky a aplikace používají k tomu, aby přiměly spotřebitele k rozhodnutí, které by normálně nebo záměrně neudělali.*

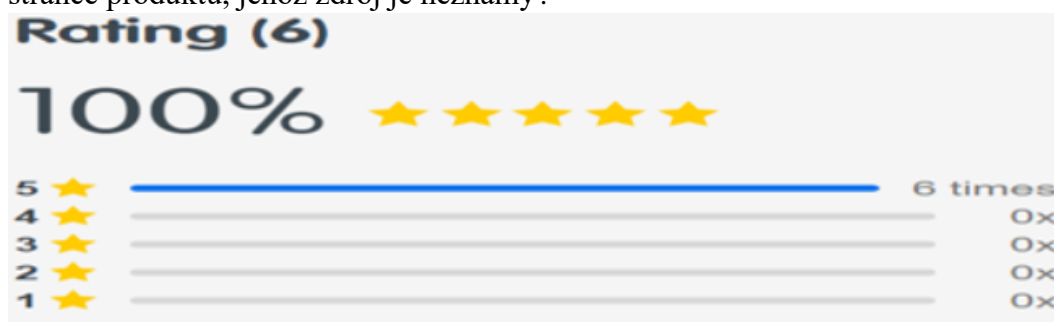
Podělte se prosím o své názory na některý z těchto temných vzorů

5. Setkali jste se někdy s časovačem odpočítávání, který ukazuje, že sleva, akce nebo doprava zdarma vyprší, pokud nákup nebude dokončen před stanoveným termínem nabídky?



- c. Ano
d. Ne
6. Pokud si chcete něco koupit online, jak pravděpodobné je, že se necháte ovlivnit časovačem?
- e. Velmi pravděpodobně
f. Spíše pravděpodobně
g. Spíše nepravděpodobně
h. Velmi nepravděpodobně
7. Do jaké míry souhlasíte s následujícími tvrzeními o odpočítávacích časovačích?
- f. Kdybych chvíli čekal/a, přišel/a bych o velkou nabídku.
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- g. Budu litovat, že jsem si výrobek nekoupil/a hned
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- h. Pokud akci promeškám, cena výrobku se pravděpodobně zvýší
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- i. Cítím se přesvědčen/a, abych si koupil/a něco, co ve skutečnosti nepotřebuji
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- j. Mám pocit, že to usnadňuje rychlé rozhodování
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím

8. Jaké jsou některé z důvodů, proč na Vás časovač odpočítávání nemá vliv?
- f. Produkt si koupím, pokud ho potřebuji, bez ohledu na cenu nebo termín akce
 - g. Někdy se ceny nemění ani po uplynutí lhůty pro podání nabídek
 - h. Před nákupem zvážím další faktory
 - i. Radši se nenechám ovlivňovat při nákupu na internetu.
 - j. Další
9. Ovlivnil někdy časovač odpočítávání vaše rozhodnutí koupit něco online?
- d. Ano
 - e. Ne
 - f. Možná
10. Setkali jste se někdy s recenzemi na internetu, které zobrazují hodnocení zákazníků na stránce produktu, jehož zdroj je neznámý?



- c. Ano
 - d. Ne
11. Pokud si chcete něco koupit na internetu, jak pravděpodobné je, že se necháte ovlivnit recenzí?
- e. Velmi pravděpodobně
 - f. Spíše pravděpodobně
 - g. Spíše nepravděpodobně
 - h. Velmi nepravděpodobně
12. Do jaké míry souhlasíte s následujícími výroky o recenzích?
- e. Poskytují užitečné rady od lidí, kteří danou službu nebo produkt použili
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
 - f. Usnadňují rozhodování
i. Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
 - g. Dají mi představu o kvalitě výrobku

i Rozhodně souhlasím ii. Souhlasím iii. Neutrálně iv. Nesouhlasím v. Rozhodně nesouhlasím

h. Mám důvěru v produkt/službu

i Rozhodně souhlasím ii. Souhlasím iii. Neutrálně iv. Nesouhlasím v. Rozhodně nesouhlasím

13. Jaké jsou důvody, proč se nenecháte ovlivnit recenzemi?

e. Výrobek si koupím, pokud ho budu potřebovat, bez ohledu na aktivity ostatních zákazníků

f. Před nákupem zvážím jiné faktory

g. Někdy mám pocit, že tyto recenze nejsou pravdivé

h. Další

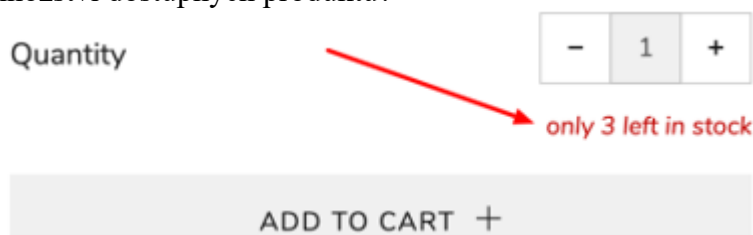
14. Ovlivnili někdy recenze/hodnocení vaše rozhodnutí koupit něco na internetu?

d. Ano

e. Ne

f. Možná

15. Narazili jste někdy na online zprávy o nízkých zásobách, které zobrazují omezené množství dostupných produktů?



c. Ano

d. Ne

16. Jak pravděpodobné je, že se v případě, že si chcete něco koupit přes internet, necháte ovlivnit zprávami o nízkém stavu zásob?

e. Velmi pravděpodobně

f. Spíše pravděpodobně

g. Spíše nepravděpodobně

h. Velmi nepravděpodobně

17. Do jaké míry souhlasíte s následujícími tvrzeními o zprávách o nízkém stavu zásob?

f. Pokud chvíli počkám, může být produkt vyprodán

i Rozhodně souhlasím ii. Souhlasím iii. Neutrálně iv. Nesouhlasím v. Rozhodně nesouhlasím

- g. Budu okamžitě litovat, že jsem si to nekoupil
i Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- h. Produkt se může stát nedostatkovým zbožím a já nebudu vědět, kdy bude k dispozici
i Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- i. Cítím se přesvědčen/a, abych si koupil/a něco, co se mi nemusí líbit
i Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím
- j. Usnadňuje rychlé rozhodování
i Rozhodně souhlasím ii. Souhlasím iii. Neutrál iv. Nesouhlasím v. Rozhodně nesouhlasím

18. Jaké jsou důvody, proč se nenecháte ovlivnit zprávami o nízkých zásobách?

- f. Výrobek si koupím, pokud ho budu potřebovat, bez ohledu na aktivity ostatních zákazníků
- g. Před nákupem zvážím jiné faktory
- h. Někdy mám pocit, že tato sdělení jsou falešná
- i. Přijde mi, že když počkám, dostanu lepší nabídku někde jinde
- j. Další

19. Ovlivnily někdy zprávy o nízkém stavu zásob vaše rozhodnutí koupit něco na internetu?

- d. Ano
- e. Ne
- f. Možná

C. DEMOGRAFIE

20. K jakému pohlaví se hlásíte?

- e. Žena
- f. Muž
- g. Jiné
- h. Raději neříkám

21. Kolik je vám let?

- f. 18-24
- g. 25-34
- h. 35-44
- i. 45-54
- j. 55 a více

22. Jaké je vaše vzdělání?

- f. Bez vzdělání
- g. Střední škola
- h. Bakalářské studium
- i. Magisterské studium
- j. Doktorské studium

23. Věděli jste o tmavých vzorech před touto studií?

- d. Ano
- e. Ne
- f. Nevím

24. Pokud se v budoucnu opět setkám s temnými vzory, budu jednat jinak

- 2 Rozhodně souhlasím
- 3 Souhlasím
- 4 Neutrální
- 5 Nesouhlasím
- 6 Rozhodně nesouhlasím

25. Co si myslíte o temných vzorech obecně?