



# Consumers' Attitude to Manipulating Consumers in Electronic Commerce

Asta Kyguolienė PhD<sup>1</sup>, Aurelija Sokolovaitė<sup>2</sup>

<sup>1</sup> Assoc. Prof., Marketing Department, Faculty of Economics and Management, Vytautas Magnus University, Lithuania

<sup>2</sup> Vytautas Magnus University, Lithuania

## Abstract

*The e-commerce has various methods how to attract the consumers and use various models of manipulating consumers that are called dark patterns. The topic of manipulating consumers has been analysed in the scientific literature; the research on the impact of manipulating consumers has been carried out, but the scope of research is not sufficient. This article serves to expand understanding the consumers' attitude to manipulating consumers in e-commerce, to find out the scope of manipulation they consider to be applied on them, and to analyse the encountered manipulation situations and their impact. The results reveal the strength of impact of manipulative situations and the degree of manipulations.*

**Keywords:** Consumers' attitude, Manipulating consumers, Dark patterns, Electronic commerce

---

## 1. Introduction

The consistent growth of e-commerce has been observed in the world for several decades already. The outbreak of Covid-19 pandemic has triggered special growth of e-commerce in the recent years. The companies were forced to open electronic shops and to improve the already owned ones in order to access the consumers unable to come for goods and services physically. Shopping online grew in the entire world in 2020. According to the data of Statista (2021), the volumes of e-commerce sales in 2020 increased by 27.60 percent when compared to 2019 and amounted to 4.280 billion U.S. dollars.

As the choice of e-shops and amount of information inside of them is growing, the organisations encounter the challenges, how to bring consumers to the e-shop and to keep them focused. E-shops apply various methods to attract the consumers, including the drastic methods, and they often decide to manipulate the consumers. Although not all the manipulation methods are absolutely negative, but still, manipulation usually has negative connotation. The consumer manipulation is usually associated with user experience and user interface, when the information about consumer's behaviour enables to get that consumer involved into the manipulative environment in the e-shop and to create a deceptive functionality of the website (Battles et al., 2018). Therefore, manipulating consumers and their behaviour has the aim to end in buying goods or services. It is an often case that the consumer does not consider being manipulated while shopping; however, it has been noticed that consumers recognise various manipulation tools more and more often (Birkett, 2019).

The topic of manipulating consumers in the scientific literature has been analysed by G. Conti & E. Cobiesk (2010), H. Brignull (n. d.), B. Battles et al. (2018), H. Gatignon (2015), A. Mathur et al. (2020), J. Luguri & J. L. Strahilevitz (2021) and other scientists. The research on the impact of manipulation on consumers has been carried out, but the scope of research is not sufficient. It is still very important to understand the consumers' attitude to manipulating consumers, to find out the scope of manipulation they consider to be applied on them, and to analyse the encountered manipulation situations and their impact. Therefore, the *research problem* is formulated by the following question: what is consumers' attitude to manipulating consumers in electronic commerce?

*Research object* – manipulating consumers in electronic commerce.

*Research objective* – to analyse consumers' attitude to manipulating consumers in electronic commerce.

To reach the aim, *research methods* of literature analysis, synthesis, and comparison were used to study the research problem. Quantitative survey of the respondents, in a form of questionnaire was used for empirical research.

## 2. Theoretical Peculiarities of Manipulating Consumers in Electronic Commerce

Manipulation is defined in the psychological literature as the type of social influence that has the aim to change the persons' understanding or behaviour with the help of insufficiency, fraud or insulting tactics (Gatignon, 2016). The concept of manipulation has been examined by many researchers. Manipulation may be understood as limitation of person's abilities that changes decision making and controls the choices (Raz, 1986), as use of fraud and playing with person's emotions (Nogge, 1996), as control and command of consumers (Pickholz et al., 2001), as use of information on the consumers and their irrationality, as well as direction towards benefit of business (Calo, 2013; Becher & Feldman, 2016), restriction of the consumer's ability to make conscious decision (Sunstein, 2015; Zarsky, 2019), fraud, lies, illegal actions that contradict directly to general purpose of marketing – to create long-term relations with the consumer and to satisfy his/her needs (Gatignon, 2015), as well as a deliberate action that changes the person's choice, violates the person's independence, and possibility to make decisions (Coons & Weber, 2014).

As all the marketing tools are used to affect the consumers' behaviour, the impression may be formed that all the marketing activities could be regarded as manipulative. H. Gatignon (2016) states that it would be incorrect to say that marketing is fraud, i.e., marketing is not and should not be considered as manipulation. The marketing actions may cause impact, but they do not necessarily are used to manipulate. The difference between the terms of influence and manipulation allows understanding when marketing may be regarded as a manipulative tool and when not. Influence may be defined as an appeal to conscious decision-making process of the consumer, while manipulation, on the contrary, misses or violates this process (Nissenbaum et al., 2019). Influence leaves the right of choice and manipulation withdraws it. Therefore, some techniques and methodologies applied in marketing may be regarded as the tools of manipulation and not of influence.

Manipulating consumers is widely spread in e-commerce (Sunstein, 2015). The new technologies allow companies to affect the consumer even more (Birkett, 2019), and to make use of the consumers' irrationality and vulnerability (Calo, 2013). Gray (2019) states that there are different patterns of influencing the consumer. Anti-patterns are the consumer interfaces that have bad design caused by lack of knowledge and skills, and that grant small value to consumer and company without any predefined reason or purpose. The best patterns with regard to consumer are honest patterns and persuasive patterns. However, the dark patterns are relevant for this article – these are the manipulation patterns, the application of which brings the biggest value to the company but smallest value to the consumer. It is said that the application of dark patterns has been becoming more and more popular. The research has manifested that application of dark patterns may contribute significantly to bigger profit of the company (Luguri & Strahilevitz, 2021).

The dark patterns have been analysed by G. Conti & E. Cobiesk (2010), H. Brignull (n. d.), B. Battles et al. (2018), H. Gatignon (2015), A. Mathur et al. (2020), J. Luguri & J. L. Strahilevitz (2021). The categories of dark patterns distinguished by B. Battles et al. (2018), A. Mathur et al. (2020), J. Luguri & J. L. Strahilevitz (2021) were used for the research (Figure 1).

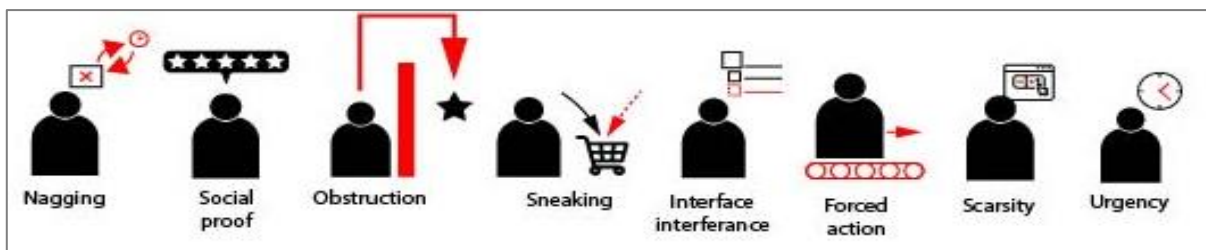


Figure 1. Categories of dark patterns

Source: B. Battles et al. (2018), A. Mathur et al. (2020), J. Luguri, J. L. Strahilevitz (2021)

According to B. Battles et al. (2018), the nagging category is related to the actions performed by the consumer that are interrupted by other actions, such as, popping-out windows, various audio notices that divert attention from important information. The obstruction category is characterised by obstacles created for certain task that the consumer wants to perform, while the sneaking category describes the situation when the information is hidden, or the consumer is distanced from the information that may be relevant to him/her. When the category of interface interference is applied, it is endeavoured at manipulating the user interface and giving priority to certain actions, thus, confusing and restricting the opportunities to choose. The category of forced action covers the consumer's actions that have to be performed in order to obtain certain function or information. The categories of social proof, scarcity and urgency were described by A. Mathur et al (2020) and J. Luguri & J. L. Strahilevitz (2021). The category of social proof is associated with positive and negative reviews visible to users. The tools used in the scarcity and urgency categories are intended to stress big demand and limited time for decision making; it is stated that the offer is valid, but its deadline is not defined, thus encouraging consumers to buy quicker because they not know when the offer expires.

The already performed research proves efficiency of manipulative methods for companies. It is also known that less educated consumers are more susceptible to dark patterns (J. Luguri & J. L. Strahilevitz, 2021). Thus, it is important to expand knowledge, to understand the consumers' attitude to manipulation, to assess the scope that the consumers consider to be manipulated in, to analyse the manipulative situations and the strength of their impact.

### 3. Research Methodology

In order to analyse the consumers' attitude to manipulating consumers in e-commerce, the instrument of questionnaire was chosen for the quantitative research. The questionnaire consisted of groups of questions: general questions about manipulation in e-commerce, questions about specific situations of manipulating consumers (their frequency, strength of made negative impact, manipulation degree) and demographical questions. The situations when consumer may be manipulated in e-commerce were grouped according to the categories of dark patterns named by B. Battles et al. (2018), A. Mathur et al. (2020), J. Luguri & J. L. Strahilevitz (2021) (Table 1).

Category	Manipulative situations
<b>Nagging</b>	1. Popping-out windows 2. Outside sounds/music
<b>Social proof</b>	3. Received notifications about number of persons viewing the advertisement 4. Received notification about certain number of consumers who have bought the product 5. Reviews of other consumers about service/product
<b>Obstruction</b>	6. Difficult or impossible leaving of the e-shop's website 7. Discrepancies from the applied discounts (the price remains as it was before the discount or similar situation) 8. Possibility to collect points, for which other goods/services could be bought later 9. Difficult or impossible comparison of prices of the goods/services of the same category 10. Difficult deletion of the account in e-shop if needed
<b>Sneaking</b>	11. Additional shipping or other expenses that are shown only when the payment is reached 12. Additional goods that appear in the cart without being selected 13. Product/service ordered/subscribed by mistake 14. Forgotten gratuitous period of the ordered subscription, after which automatic fee is imposed
<b>Interface interference</b>	15. Not clearly visible button to cancel the window 16. Hardly visible important statements (small font, dim colour) 17. Unparallel layout of selection buttons 18. Reference from the e-shop to another, not related website 19. Negative statements about the product/service in its description 20. Accusatory statements if you want to cancel service/subscription 21. App downloaded in the phone by mistake
<b>Forced action</b>	22. Offered subscription for the newsletter 23. Forced registration to acquire the product/service
<b>Scarcity</b>	24. Notifications about small remaining quantity of the product
<b>Urgency</b>	25. Regressive stopwatch at the time of ordering that shows the end of product's reservation or discount

**Table 1. Grouping of manipulative situations according to the categories of dark patterns**

**Source: B. Battles et al. (2018), A. Mathur et al. (2020), J. Luguri & J. L. Strahilevitz (2021)**

Multiple choice questions and 5-point Likert scale were applied for the questionnaire. Due to Covid-19 restrictions, the questionnaires were distributed only through online survey platform Google Forms. The survey was carried out in Lithuania in April-October 2021. Microsoft Excel software products were used for analysis of survey results.

The survey was focused on 16–74-year-old persons, who had bought goods or services online at least once in 2020. Even 54% of 16–74-year-old Lithuanian residents shopped online at least once in 2020 (Oficialios statistikos portalas, 2020), which amounts to 1.13 million residents. The sample was calculated under Paniott formula, where 95% probability and 7% error were applied. It was planned to question 196 respondents. Simple random sampling was applied. 212 respondents took part in the survey. 82.5% were women, 15.1% were men, and remaining 2.4% preferred not to state their gender. The majority of respondents were 24 years old and younger (37.7%), followed by 25–34-year-olds (30.2%), 35–44-year-olds (21.2%), 45–54-year-olds (9%), and the smallest percentage was formed by 55–64-year-old persons (1.9%). According to the statistical data, 16–44-year-old Lithuanian residents were shopping the most online in 2020 (Oficialios statistikos portalas, 2020), thus, it is possible to state that the characterisation of respondents according to their age conform to characterisation of e-commerce customers.

#### 4. Research Results

In order to analyse the consumers' attitude to manipulating consumers in electronic commerce, the respondents were asked first of all, whether they believe being manipulated in e-commerce. 65.1% of respondents were affirmative, 16.5% denied, and 18.4% had no opinion. Such answers of the respondents allow concluding that the consumers have had contact with manipulation methods already and have some (not necessarily positive) experience about attempted impact on their behaviour. In the opinion of the respondents, the most in e-commerce is manipulated by prices (47.8%), then followed by advertising (31.9%), information about products, services, company, buying conditions, etc. (13.8%), design (4.3%). When answering how they are manipulated, 4.3% respondents said that they are manipulated in all the above cases, also by using retouched photos in order to show better functioning of the product, by providing better than real description of the item, and by pressing to buy during certain period by claiming that the quantity of goods is limited.

According to the research results, the majority of respondents feel induced to buy goods or services, when they are shopping online. Even 61.3% of the respondents feel induced to buy frequently and 19.3% have this feeling always, thus amounting to total percentage of 80.6% of respondents. Accordingly, 19.4% of respondents stated that they never feel like this, or just rarely. These results confirm the above conclusion that majority of the respondents have had experience with the manipulation methods intended to affect their behaviour.

When the analysis was conducted what drives purchase decisions, it was learnt that discount is the main factor (4.19 in 5-point scale). Besides, other elements may be used for manipulation: attractive photos of the product (3.80), reviews (3.75), positive description of the product/service (3.74), high evaluation scores (stars) (3.71). These tools also have strong impact on the respondents' decision to buy. It could be noted that other manipulating consumers tools induce the consumers to make decisions to buy less: notification about small remaining quantity of the product (2.98), regressive stopwatch at the time of ordering that shows the end of product's reservation or discount (2.93), notification about certain number of consumers who have bought the product (2.59), notification that the advertisement is being viewed by certain number of persons (2.35).

The analysis of the respondents' behaviour shopping online reveals that the respondents read and take the reviews into consideration before they buy certain product/service (3.95), however, the estimate average of trust in reviews is lower – 3.36. Meanwhile, the respondents are not inclined to leave reviews. When the scale of 5 point from *do not agree at all* to *agree completely* was applied, the respondents more disagreed with the statement that they leave reviews frequently (2.43). The discounts are the reason why they subscribe for newsletters (3.26), not the receiving of information about products/services (2.56) and following the news (2.50). It is evident that the respondents rarely read the newspapers and even more rarely they read the documents of privacy policy, terms and rules before confirming them. However, these policies help to collect the data about the users that may be used later to implement the marketing and sales strategies and to apply various manipulative actions. The estimates of statements describing the respondents' behaviour shopping online are presented in Table 2.

Statement describing the respondents' behaviour shopping online	Estimates
I often read and take the reviews into consideration before buying a product/service	3.95
I trust the reviews of other users of the e-shop	3.36
Discounts are the main reason why I subscribe for newsletters	3.26
I subscribe for newsletters often	2.56
Information on products/services is the main reason why I subscribe for newsletters	2.56
Notifications about news are the main reason why I subscribe for newsletters	2.50
I often leave a review about a product/service bought in an e-shop	2.43
I often read the subscribed newsletter received by e-mail	2.32
I often read all the documents of privacy policy, terms and rules before confirming them	1.78

**Table 2. Estimates of statements describing the respondents' behaviour shopping online**

In order to assess how frequently the respondents find themselves in the situations where they are manipulated, the presented situations had to be assessed according to respective frequency: always, often, rarely, never (Figure 2).

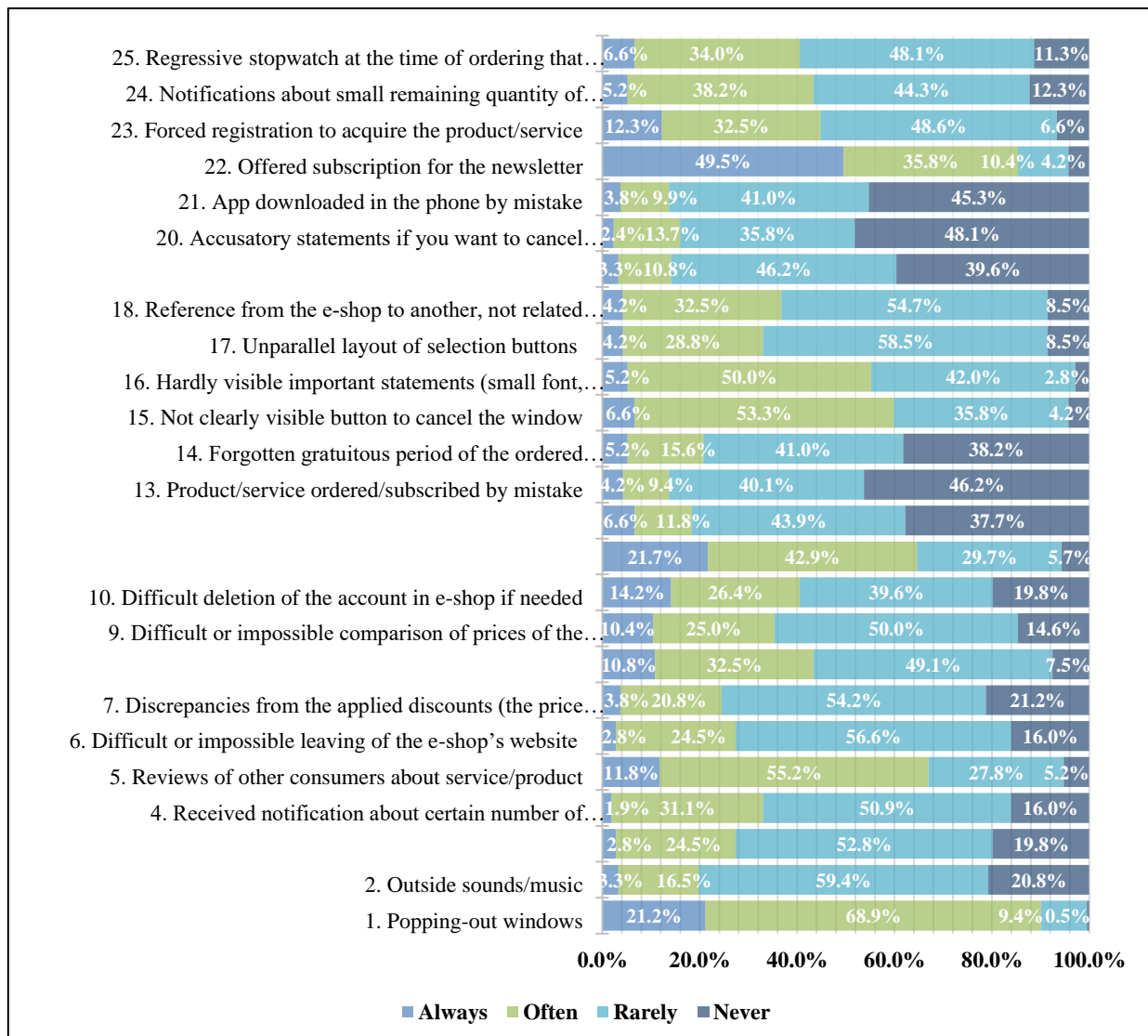


Figure 2. Frequency of experiencing manipulative situations

To summarise the evaluations of the situations, in which the respondents find themselves *always* or *often*, the popping-out windows (90.1%) and offered subscription for the newsletter (85.3%) are mentioned the most. Besides, more than half of the respondents always or often encounter reviews of other consumers (67%), additional shipping or other expenses that are shown only when the payment is reached (64.6%), not clearly visible button to cancel the window (59.9%), hardly visible important statements (small font, dim colour) (55.2%). These manipulative situations could be named as the most frequently recurring. It is worth mentioning that these tools may be combined in the e-shop to make the manipulative impact stronger. For example, the invitation to subscribe for newsletter is presented in the popped-out window, while the cancelling button is not clearly visible, so when users do not find this button, they think that after this action they will be able to move further, so finally subscribe for the newsletter. The forced registration to acquire the product (44.8% when the answers *always* and *often* were summed up), notifications about small remaining quantity of the product (43.4%), possibility to collect points, for which other goods could be bought later (43.3%), regressive stopwatch at the time of ordering that shows the end of product's reservation or discount (40.6%), difficult deletion of the account (40.6%), reference from the e-shop to another, not related website (36.7%), difficult or impossible comparison of prices of the goods/services of the same category (35.4%), notification about certain number of consumers who have bought the product (33%), unparallel layout of selection buttons (33%) are encountered more rarely. The rarest situations are the following: service ordered/subscribed by mistake (13.6% when the answers *always* and *often* were summed up), app downloaded by mistake (13.7%), negative statements about the product in its description (14.1%), accusatory statements if you want to cancel subscription (16.1%), additional goods that appear in the cart (18.4%), outside sounds and music (19.8%), forgotten gratuitous period of the ordered subscription, after which automatic fee is imposed (20.8%), discrepancies from the applied discounts (24.6%), received notifications about number of persons viewing the advertisement (27.3%), difficult or impossible leaving of the e-shop's website (27.3%). The results allow making the conclusion that the manipulative situations are widely used in electronic commerce. There were no situations among 25 that would be marked as not encountered by the respondents. Even the rarest situations occur for 13% of respondents, while in general, all the situations are used in e-

commerce often enough.

The analysis of strength of the negative impact of manipulative situations in e-commerce (Table 3) revealed that the smallest negative impact is caused by manipulative situations of urgency, scarcity, social proof and forced actions. These situations do not have strong negative impact on the respondents because they have no direct influence on their decisions. The situations of nagging, obstruction, sneaking and interface interference have significantly bigger negative impact. It is possible to state that the respondents have negative attitude to the tools that aggravate their actions in the e-shop or to mistakenly pushy actions, for example, apps downloaded by mistake, product/service ordered by mistake, forgotten gratuitous period of the ordered subscription, after which automatic fee is imposed, or additional goods that appear in the cart. The estimates' average of all the manipulative categories is 3.14 in 5-point scale, i.e., the value shows moderately strong and strong negative impact.

Category	Manipulative situations	A*		B**	
		Estimate	Aver.	Estimate	Aver.
Nagging	Popping-out windows	3.50	3.55	3.51	3.35
	Outside sounds/music	3.60		3.20	
Social proof	Received notifications about number of persons viewing the advertisement	2.26	2.28	3.71	3.58
	Received notification about certain number of consumers who have bought the product	2.20		3.73	
	Reviews of other consumers about service/product	2.38		3.30	
Obstruction	Difficult or impossible leaving of the e-shop's website	3.65	3.22	3.92	3.78
	Discrepancies from the applied discounts (the price remains as it was before the discount or similar situation)	3.75		3.98	
	Possibility to collect points, for which other goods/services could be bought later	2.15		3.42	
	Difficult or impossible comparison of prices of the goods/services of the same category	3.07		3.63	
	Difficult deletion of the account in e-shop if needed	3.52		3.97	
Sneaking	Additional shipping or other expenses that are shown only when the payment is reached	3.27	3.66	3.72	3.80
	Additional goods that appear in the cart without being selected	3.72		3.93	
	Product/service ordered/subscribed by mistake	3.80		3.77	
	Forgotten gratuitous period of the ordered subscription, after which automatic fee is imposed	3.85		3.80	
Interface interference	Not clearly visible button to cancel the window	3.47	3.35	3.71	3.60
	Hardly visible important statements (small font, dim colour)	3.17		3.67	
	Unparallel layout of selection buttons	2.68		3.19	
	Reference from the e-shop to another, not related website	3.82		3.97	
	Negative statements about the product/service in its description	3.00		3.04	
	Accusatory statements if you want to cancel service/subscription	3.46		3.81	
	App downloaded in the phone by mistake	3.87		3.82	
Forced action	Offered subscription for the newsletter	2.46	2.85	3.38	3.65
	Forced registration to acquire the product/service	3.25		3.92	
Scarcity	Notifications about small remaining quantity of the product	2.21	2.21	3.78	3.78
Urgency	Regressive stopwatch at the time of ordering that shows the end of product's reservation or discount	2.31	2.31	3.88	3.88
Average		3.14		3.67	

**Table 3. Estimates of strength of negative impact of manipulative situations and degree of manipulation**

\* Estimate of the strength of negative impact of manipulative situations used in e-shop in 5-point scale (1 – no negative impact, 5 – a very negative impact).

\*\* Estimate of the degree of manipulating consumers in 5-point scale (1 – absence of manipulation, 5 – absolute manipulation).

When the respondents assessed the same situations according to their feelings and scope of manipulation in certain situation, the conclusions about the manipulation degree in different situations could be made. Although all estimates were above 3 in 5-point scale, the respondents feel manipulated the least in the situations in the nagging category. The situations within the categories of social proof, interface interference and forced actions received higher estimates, i.e., the respondents consider that they are manipulated more in these situations. The respondents feel the biggest manipulation in the situations that fall under the categories of urgency, sneaking and scarcity. The average estimate of all the categories was 3.88, so, it means that in general, the respondents agree with the idea that

they are manipulated in the analysed situations.

The comparison of the strength of negative impact of manipulative situations with the estimates of manipulation degree allows making the conclusion that the respondents gave higher scores to the degree of manipulation in all the categories, except for nagging, than to the strength of negative impact of the manipulative situation i.e., they believe being manipulated more than manipulations makes negative impact on them.

## **5. Conclusions**

Manipulation may be defined as a deliberate action or process with deceptive intentions aiming at profit and ignoring real needs of the consumer. Manipulating by the consumer's understanding, interests, partiality, lack of knowledge and skills, behaviour, independence and emotions falls under the concept, the consumer's opportunities are restricted. It would be incorrect to assume that all the marketing tools are manipulative. If the used marketing tools leave the freedom of choice to the consumer, they are not considered manipulative. The manipulative marketing tools are the ones that deprive the consumers of the freedom to choose or restrict that freedom.

The research has proved that application of dark patterns is getting more and more popular in e-commerce when various methods of consumer manipulation are used. These patterns allow companies to increase their profit significantly but give small value to the user. The manipulation categories of nagging, obstruction, sneaking, interface interference, forced action, social proof, scarcity, and urgency were used for the present research.

The results of the empiric research allow concluding that the manipulative tools are prevalent in electronic commerce. Almost two thirds of the respondents believe that they are manipulated in e-commerce. In order to influence buyer's decisions, organizations manipulate by prices, advertising, information about the products, services, company, purchasing conditions. The majority of respondents feel constant pressure to buy in e-shops.

The analysis of 25 different manipulative situations revealed that all of them occur when shopping online. The use of the situations of all categories in e-commerce is quite frequent. However, it should be noted that not all the manipulation methods have negative impact. The smallest negative impact is caused by the manipulative situations that fall under categories of urgency, scarcity, social proof and forced action. These situations do not have strong negative impact on the respondents because they have no direct influence on their decisions. The respondents have negative attitude to the tools that aggravate their actions shopping online or to mistakenly pushy actions. The situations of nagging, obstruction, sneaking and interface interference have significantly bigger negative impact. The estimates' average of all the manipulative categories shows moderately strong and strong negative impact.

To summarise the manipulation degree in different situations, it was noticed that the respondents feel manipulated the least in the situations in the nagging category. The respondents consider that they are manipulated more in the situations within the categories of social proof, interface interference and forced actions. The respondents feel the biggest manipulation in the situations that fall under the categories of urgency, sneaking and scarcity. In general, the respondents agree with the idea that they are manipulated in the analysed situations.

To conclude, although the manipulative situations in all the categories, except for nagging, have negative impact on the respondents, but this impact was evaluated by lower scores than the degree of manipulating consumers.

## Works Cited

- Battles, B., Gray, M. C., Hoggatt, J., Kou, Y. & Toombs, L. A. (2018). The Dark (Patterns) Side of UX Design. *CHI'18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 1-14. <https://doi.org/10.1145/3173574.3174108>
- Becher, S. & Feldman, Y. (2016). Manipulating, Fast and Slow: The Law of Non-Verbal Market Manipulations. *Cardozo Law Review*, 38, 459. doi:10.2139/ssrn.2639862
- Birkett, A. (2019). Online Manipulation: All The Ways You're Currently Being Deceived. Access through internet: <https://cxl.com/blog/online-manipulation-all-the-ways-youre-currently-being-deceived/>
- Brignull, H. (n. d.). Types of dark pattern. Access through internet: <https://www.darkpatterns.org/types-of-dark-pattern>
- Calo, R. (2013). Digital Market Manipulation. *University of Washington School of Law Research Paper*, 2013-27. doi:10.2139/ssrn.2309703
- Conti, G. & Sobiesk, E. (2010). Malicious Interface Design: Exploiting the User. In *Proceedings of the International Conference on World Wide Web*. United States Military Academy, West Point, New York. 271–280.
- Coons, C. & Weber, M. (2014). *Manipulation: Theory and Practice*. Oxford University Press.
- Gatignon, H. (2015). Manipulating Consumers is Not Marketing: A Commentary on Cass R. Sunstein's „Fifty Shades of Manipulation“. *INSEAD Working Paper*. Nr. 2015/87/MKT. doi:10.2139/ssrn.2686547
- Gatignon, H. (2016). Manipulating Consumers is Not Marketing. Access through internet: <https://knowledge.insead.edu/customers/manipulating-consumers-is-not-marketing-4662>
- Gray, C. M. (2019). *Dark Patterns and Ethical Engagement in Design Activity*. Invited talk at the Human-Computer Interaction Institute Seminar Series, Carnegie Mellon University, Pittsburgh, PA. Access through internet: [https://www.youtube.com/watch?v=F1\\_i6vlg3as](https://www.youtube.com/watch?v=F1_i6vlg3as)
- Luguri J. & Strahilevitz J. L. (2021). Shining a Light on Dark Patterns. *Journal of Legal Analysis*,13(1), 43-109 p. doi:10.1093/jla/laaa006
- Mathur, A., Acar, G., Friedman, J. M., Lucherini, E., Mayer, J., Chetty, M. & Narayanan, A. (2020). Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites. *Princeton University USA, University of Chicago*, 3(81). doi:10.1145/3359183
- Nissenbaum, H., Roessler, B. & Susser, D. (2019). Online Manipulation: Hidden Influences in a Digital World. *Georgetown Law Technology Review*. <http://dx.doi:10.2139/ssrn.3306006>
- Noggle R. (1996). Manipulative Actions: A Conceptual and Moral Analysis. *American Philosophical Quarterly*, 33, 43-45.
- Oficialios statistikos portalas (2020). Skaitmeninė ekonomika ir visuomenė Lietuvoje 2020. Access through internet: <https://osp.stat.gov.lt/skaitmenine-ekonomika-ir-visuomene-lietuvoje-2020/e-pirkejai>
- Pickholz, J. & Pickholz, G. M. (2001). Manipulation. *Journal of Financial Crime*, 9(2). doi:10.1108/eb026013
- Raz, J. (1986). *The Morality of Freedom*. Clarendon Press Oxford.
- Statista (2021). E-commerce worldwide – statistics & facts. Access through internet: <https://www.statista.com/topics/871/online-shopping/#dossier-chapter1>
- Sunstein, S. C. (2015). Fifty Shades of Manipulation. *Journal of Marketing Behavior*, 1(3-4). doi:10.1561/107.00000014