

## Nudge mystery – Are consumers aware and consciously affected?

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## **Nudge mystery – Are consumers aware and consciously affected?**

### **Abstract**

The consumer decision-making process plays an important role across different scientific fields. One of the most recent challenges that attracts the attention of both practitioners and the scientific community includes digital nudges, as only a limited portfolio of tools is available online to encourage consumers to purchase certain products or services. Therefore, the aim of the current research is to find out whether consumers are consciously aware of digital nudges or not. An additional aim is to reveal what effects these digital nudges have on consumers. The conversion capability of digital nudges is examined via the example of an integrated web analytics software-as-a-services by secondary analysis of web analytics data. Additionally, group interviews were conducted to investigate the awareness and uncover the potential effects of nudges on consumers. Results show that consumers accept nudges that are not manipulative. Using nudges increase conversion rates but not exit rates.

*Keywords: digital nudges, online decision-making, conversion rate*

*Consumer Behavior*

## **1. Introduction of Paper**

The business world is influenced by information technology, as continuously developing technologies help companies reveal new and better solutions to increase productivity and sales. In marketing, we have witnessed significant changes in the field of information technology. Companies are equipped with tools to get to know their consumers, their purchasing habits, and preferences. They can alter their offers so that it fits their target groups and segments the most. The development in information technology also helped with leaving behind mass marketing tools and with starting the personalization of offers for end consumers.

Digitalization affects consumer behavior, as consumers use the information technology to reach the most ideal offer available for them. The dynamic increase in e-commerce together with the COVID-19 pandemic let online shops remain open even though physical stores had to close. Therefore, consumers could choose to give up their purchases or order online. Due to many physical shops being closed, the product range in online stores and the number of applied online marketing tools have increased.

In the online era, there is a limited number of tools that can be used to make consumers purchase a certain product or service. Convincing consumers to purchase works differently on webpages and web shops. It is not sufficient to solely introduce the products on the webpages. Due to the lack of personal interaction and opportunity to touch the products, companies have to use different practices to convince their consumers to buy. These methodologies and solutions are called nudges (Brown, 2019). Offers, pop-ups, and suggestive text elements are available to function as the final nudge for consumers to act and finalize the purchase (Demarque, Charalambides, Hilton, and Waroquier, 2015). Based on the above, the aim of this research is to find out whether consumers are consciously aware of nudges. Moreover, the study also intends to reveal what effects these nudges have on consumers.

## **2. Nudges**

How people, and specifically consumers make decisions have been in the center of research interest in the field of marketing. Most recent studies concentrate on the factors behind convincing consumers to acquire new behavior. Investigating choice architecture

further, we can state that nudge theory is one of the many different tools available to influence the actions of humans (Brown, 2019). In the current study, we focus solely on the nudge theory and other tools for changing the behavior of people are not discussed.

Contrary to the beliefs of conventional economic theory, the nudge concept suggests that rationality when making decisions is limited. The reason for this is defined as cognitive limitation (Simon, 1955; Thaler & Sunstein, 2009). The expression of “nudges” was first used by Thaler and Sunstein (2008), who claimed that nudges are characteristics of choice architecture and they are capable of changing consumers’ actions without the prohibition of the given choice alternatives or the alteration of their economic motives. Even though the nudge theory has been applied and researched in numerous fields, such as healthcare (Prainsack, 2020), politics (Mols, Haslam, Jetten, and Steffens, 2014), sociology (Room, 2016), and behavioral economics (Thaler & Sunstein, 2008), the concept is still in its early stages.

Despite the fact that the phenomenon is newfound, digital nudges have grown to be crucial today, as consumers make the majority of their decisions online when they decide to purchase any tangible products or buy services online (Demarque et al., 2015; Eigenbrod, Janson, and Leimeister, 2018). Literature and practice concentrate on the phenomenon of digital nudges, that have been defined as tools for changing the human behavior in a digital setting (Brown, 2019).

Digital nudges have been identified to possess certain psychological effects (Mirsch, Lehrer, and Jung, 2017). In the current research, we concentrate on those psychological effects that might happen after the consumer has logged into a specific interface. The first psychological effect is called the framing theory (Eigenbrod et al., 2018), which builds on the fact that people can be presented a problem from various angles. Therefore, people conceptualize the issue and their thoughts about it via the framing process (Chong & Druckman, 2007). Nudges built on the framing theory utilize the fact that people’s response might differ based on how they are presented the same decision-making situation (Tversky & Kahneman, 1985; Chong & Druckman, 2007). Online sellers and web shops can use the framing technique by adding similar products on product pages that might result in higher expenditures from the consumer (Mirsch et al., 2017).

The second psychological effect is loss aversion (Chong & Druckman, 2007). Previous research suggests that the response of people is different for the same decision situation if we examine the perception of gains and losses. The majority of people might be more susceptible to losses than to gains that are both of the same extent (Eigenbrod et al., 2018). This means

that if a marketing campaign is run two different ways, one emphasizing the money that you can save if you use energy-saving, the other highlighting how much you might lose, better results emerge if the message with the loss is used (Thaler & Sunstein, 2009).

Thirdly, status quo bias emerges if people keep the same pattern in their decision-making process as others have chosen previously. They perceive higher risks of changing their choices than formulating the same decision that was done before. Therefore, it is a crucial step for companies to choose the first position of the decision-making process that consumers can follow (Mirsch et al., 2017; Samuelson & Zeckhauser 1988; Thaler & Sunstein 2009). As for e-commerce, the website offers default options when picking a certain kind of or product version (Mirsch et al., 2017). In case of service subscriptions Thaler and Sunstein (2009) stated that consumers do not tend to cancel their periodical subscriptions even if they are no longer using the service or the ordered products. Companies build on this decision of the consumer by creating plans that renew the subscription without further notices.

We can also differentiate between emotional association-based nudges, which specifically take advantage of the fact that the involved individual consumer answers with an emotional association to the nudge. The influences that evoke emotional response are usually new, relevant to the consumer at hand, or highly influential. Evidence shows that these nudges are used in applications or in case of service subscription models.

Priming is an additional tool that has a psychological basis and can affect consumers, who might think about different decision outcomes when they pick their final choice (Battaglio, Belardinelli, Bellé, & Cantarelli, 2019; Eigenbrod et al., 2018; Mirsch et al., 2017; Thaler & Sunstein, 2008). Priming can include different factors, such as mood, specific subjects, facts or visualizing the results of the decision, that have a potential influence on the decision-making process (Friis et al., 2017; Tversky & Kahneman, 1985). When investigated online, several factors, such as website design or social media page outline can both influence the conversion rate. Images displayed online can have a significant effect on the purchase intentions and outcomes of consumers (Mirsch et al. 2017).

Last but not least, focusing the attention of decision-makers on certain drops of information and emphasizing specific information might result in a change in the decision-making process (Saghai, 2013). This is proven by the built-in tax in certain products compared to the separately payable value added tax that is not highlighted in some shops. The fact that consumers know of these taxes and count the amount payable with or without this influences the purchasing behavior.

### **3. Nudges and SaaS**

In the current research, we are examining nudges in case of Software-as-a-Service (SaaS) webpage. SaaS model companies offer software solutions as services instead of products (Bennett et al., 2001). Consumers do not get the tangible software, they solely get a list of functions from the service provider that limits the consumers' ability to ask for very detailed differentiation in the service (Batra, 2017).

The majority of Software-as-a-Service use two main business models that can be applied at the same time. The first one includes a freemium subscription offer, the second one includes free trial. The freemium model offers services for a free, consumers only need to pay if they would like to receive premium services (Osterwalder & Pigneur, 2010). In the free trial model, all elements of the service are available for free, but only for a limited period. After the free trial expires, fee is charged for the services (Wang, Oh, Wang, & Yuan, 2013). When taking SaaS companies into account, we can conclude that they use digital nudges to try to convince users to upgrade their subscription from freemium to premium, or pay for the service after the free trial is over (Koch, 2017).

### **4. Methodology**

The methodology of the current research is composed of two parts. First, we examined an integrated web analytics software, which records and offers qualitative and quantitative data to customers. In case of these SaaS companies, consumers meet nudges in the form of online advertisements, newsletters and social media advertisement (Eigenbrod et al., 2018; Mirsch et al., 2017). However, they are also nudged when using the software on their websites. Therefore, our research is conducted at this specific point. In the current research, we concentrate only on the study of post-login nudges, which try to convince users for premium subscriptions. By them clicking on the direct link, effects of the nudge are directly measurable with Google Analytics. Secondly, we conducted three group interviews with users of SaaS services to gain a deeper insight into their awareness of nudges and to map the effect that nudges have on them.

### **5. Results**

In our research, we examined the nudges that appear on the dashboard while using the chosen service, which encourages the user to upgrade the freemium plan to a premium subscription. In the post-login interface of the software-of-a-service there are nudges of loss aversion (“Here’s what you’re missing out”), framing (“Make your job more effective”), focusing and emphasizing the attention, and nudges that uses the bias of focus and emphasize attention and emotions as well (Table 1).

<i>Nudge</i>	<i>Appearance</i>	<i>Nudge category</i>	
1.	notifications on the dashboard	loss aversion	
2.	subscription page	loss aversion	
3.	date picker	framing	
4.	pop-up with owl	focusing and emphasizing the attention	emotions
5.	pop-up with owl	focusing and emphasizing the attention	emotions
6.	a pop-up with blurred background	focusing and emphasizing the attention	
7.	a pop-up with blurred background	focusing and emphasizing the attention	

Table 1. Nudge categories of the examined software-as-a-service

In the first half of the research, we used Google Analytics to investigate the impact of nudges placed on the web analytics software interface on conversions and whether they have an impact on exit rates. We also looked at which types of nudges have the greatest impact on users. The year before the introduction of nudges was taken as the base period and the year after as the reference period.

To examine the conversion ability of nudges, we tested the aggregate results of the event labels associated with nudges, with the secondary dimension being conversion, which in this case is the subscription to a plan. We also compared the web analytics software data with subscriber data from the enterprise resource planning system of the website under study. In the base period, 8% of free users subscribed to one of the plans, which increased to 12% in the reference period. 52% of conversions came from clicks on nudges.

We also wanted to see if the exit percentage increases on pages where we placed nudges. Two nudges have their own URLs on the page, so we were able to examine the exit rate on these. One is on the dashboard and the other is on the subscription page. The dashboard with the notification nudge was the exit page 2,547 times out of 3,252 visits in the

base period, which means that 78.32% of the visits were the last visit to the page. The number of visits to the dashboard increased to 3,836 in the reference period, but this sub-page served as the exit page 3,002 times, which represents 78.25%. The second nudge examined appears on the subscription page, which users are much less likely to visit. In the base period, it was the last page viewed by users 12 times out of 342 visits, or 3.5% of visits. In the reference period, this percentage increased slightly to 3.8%.

The analysis of the web analytics data showed that the exit rate from the examined website did not increase significantly in the reference period compared to the base period. At this point in the research, we have already seen that using nudges increases conversion rates but does not increase exit rates. We also set out to reveal which type of nudge results in the most conversions. To test the effectiveness of the different kind of nudges, we used Google Analytics to list the event tags associated with the nudges. We examined the impressions of event tags and the impressions that resulted in conversions during the reference period.

<b>Nudge category</b>	<b>Impressions</b>	<b>Unique events</b>	<b>Conversions</b>	<b>Conversion rate</b>
loss aversion	9 899	1 651	40	2,4%
framing	11 865	1 367	16	1,2%
focusing and emphasizing the attention and emotions	6829	6685	35	0,5%
focusing and emphasizing the attention without emotions	1259	1191	13	1,1%
focusing and emphasizing the attention only with emotions	5570	5 494	22	0,4%

Table 2. Nudge category impressions and conversions during the reference period (Source: Google Analytics)

Table 2 shows that the highest conversion rate, calculated from unique event impressions, was achieved by loss aversion nudges.

During the group interviews, participants were introduced to nudges of the web analytics software under study. They could also associate to the software and websites they had already used (such as Canva, Spotify, Booking, or Amazon), so we also talked about nudges that appear there. The interview revealed that during their purchases and software use,



participants perceive nudges and remember them for long. Overall, participants were positive about the nudges that appear on the software-as-a-service under study. Their only problem was with the ones that appeared as pop-ups, but it was not the content of the nudge, but the form in which it appeared.

Interviews also highlighted that the psychological impact of loss aversion and framing on nudges was better perceived by participants. Loss-aversion nudges are most frustrating when the content of the nudge is not clear (e.g., limited-time deal instead of being expressed clearly, specifically how long the deal lasts) *"If the information is specific, e.g. the sale lasts for 20 hours, I can calculate with that. But if it says how many pieces of the product are left, or how many people are looking at the site, I can't compare those numbers, I don't know what the average number is, they are very confusing."*

They were mostly positive about the nudges to raise awareness, as they let them know the benefits of not subscribing for free, in case they ever wanted to subscribe. However, there were also those who pointed out that *"If it (the software) draws my attention to every little thing, why it would be good to subscribe, it becomes distracting after a while"*. Several respondents mentioned that they had been tempted to subscribe by being reminded of features that were not available: *"If you are always warned that this is all you get, sometimes you are tempted by all the features"*.

The nudge, which also affects the emotions of the software-as-a-service, was positively rated by respondents. On this nudge, the website tries to compensate for the unavailability of a feature with a cute sad owl. However, framing and emotion-based nudges were mentioned, where the "no" button is replaced with a negative sentence (e.g., instead of "I don't want to subscribe": "I don't want my business to grow"). This kind of nudge is so negatively perceived that some respondents close the whole website instead of clicking on the button, and some even do not return to the website they are using after having encountered such a nudge.

## **6. Conclusions**

Using nudges became increasingly popular in the online environment since online service providers use it to substitute the influence of personal interactions. Nudges of loss aversion, framing, focusing and emphasizing the attention, and nudges that use the bias of focus and emphasize attention and emotions as well are included in this research. To analyze the effectiveness and customer awareness of post-login nudges of a selected SaaS we

analyzed web analytics data and conducted three group interviews with users of SaaS services. The analysis of the web analytics data showed that using nudges increase conversion rates (the highest conversion rate was achieved by loss aversion nudges), but does not increase exit rates. Interviews also highlighted that participants better perceived the psychological impact of loss aversion and framing on nudges. We also understood that perceiving nudges might also be frustrating. Companies should use nudges carefully and should understand the difference between marketing and manipulative nudges.

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