Effects of Nudging Consumers to Choose Insurance Products:

Pre-Analysis Plan

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Introduction

Decisions in insurance are complex. Several studies and research streams study decision making in insurance and state that human behavior is not consistent to established theories in the field of behavioral economics. Due to the difficult composition of this choice architecture people tend to misjudge the probability of risks in combination with the value and paid premium of the insurance (Johnson et al. 1993). There exist several anomalies on the demand side. All in all this leads to sub optimal decisions (Kunreuther and Pauly 2005).

To facilitate the decision making a large number of marketers adopted the policy and concept of nudging which alters people's behavior in a predictable way by changing the choice architecture accordingly. Besides the increasing interest since the release of the book "Nudge: Improving decisions about health, wealth and happiness" by Thaler and Sunstein in 2009 the question if nudging is the right tool for all decisions comes up (Thaler and Sunstein 2009). Recent publication have shown that nudges are a complex concept that needs to be fully understood. Otherwise it can lead to ticking "time bombs" for a company (Dholakia 2016).

The Harvard Business Review article "Why Nudging Your Customers Can Backfire" by Dholakia (2016) shows several limitations in the effectiveness and efficiency of nudging in combination with possible dangers. Based on these considerations the experiments explained in this pre-analysis plan aim to study the actual effect of applied nudges in insurance decision making. Based on the choice architecture and complexity of the domain, customers are oftentimes faced with a lot of product information in different forms of informational and salience nudges. The effect of such nudges should be studied by focusing on the evoked emotion. The designed informational nudge is framed in an aggressive way to to provoke an emotional reaction and thus guide the decision. The designed treatment that is used in the experiment can be seen in Figure 1.

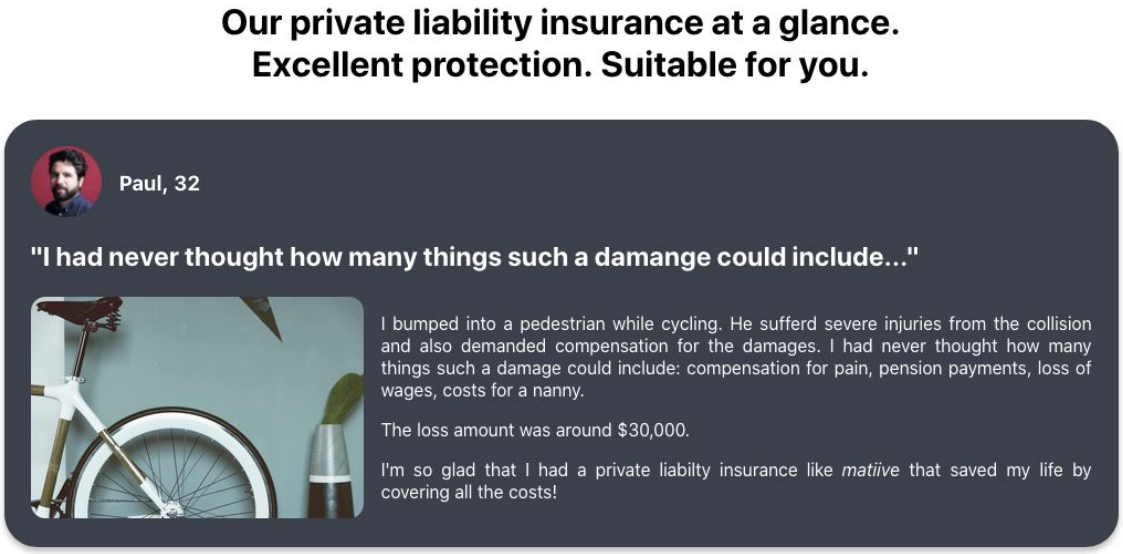

Figure 1: Nudge design for the experiment

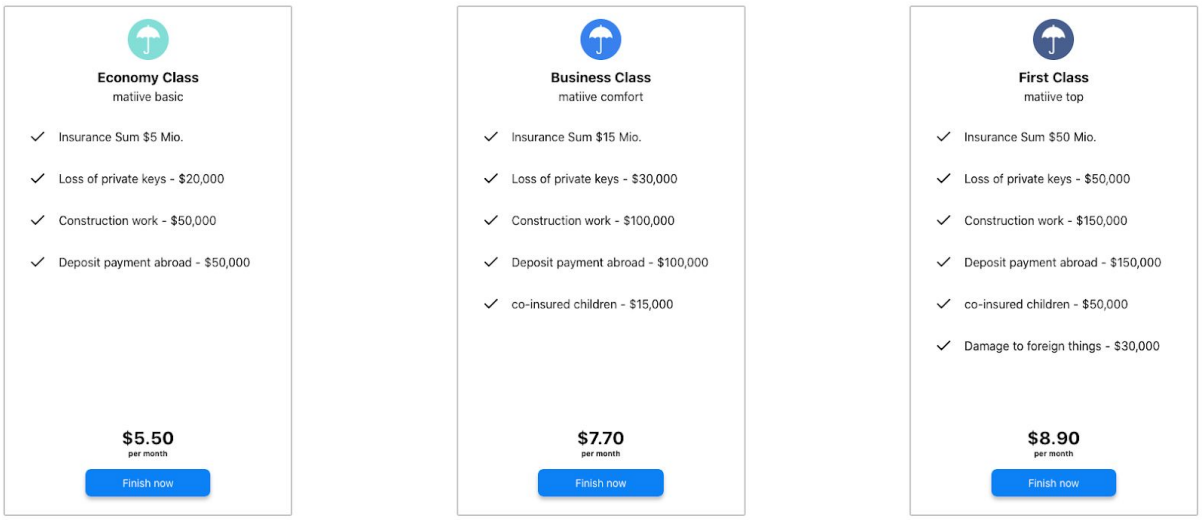

Figure 2: Available Tariff Options for the insurance product

Expected Outcome

Nowadays nudging is used as a well established tool for guiding choices in offline as well as online choice architectures. Because every guidance in choice is to some degrees also a manipulation, the border between decision support and unethical manipulation is narrow. Whenever a customer is confronted with a nudge, he is put into the situation of the weak-minded. Thus, he should be relieved of the decision because he is accused of too little self-control and therefore he can not make an optimal decision (Dholakia 2016). Such an intervention in the choice architecture can quickly tip over and have a negative impact on the user experience. The experiments described in this document are intended to study this effect in a more detailed way by using a previously describe *informational nudge* (salience nudge) with an aggressive framing. Based on the nature of the framing, one can assume that this will have negative consequences for the overall user experience.

If such an aggressively framed informational nudge has negative effects on customers, and some users are presented with such a nudge while others visit the website without the nudge, the perceived level of user experience of those users presented with the nudge is rated lower than the emotional state of the users presented with no nudge.

Steps in the Experiment

The experiment has the following steps:

- Beginning **on December 20th 2019** we show digital nudges on a self designed webpage that mimics a fictional insurance company

    - Control: No Nudge, neutral information for the insurance product
    - Treatment: A high threat nudge in form of a personal testimonial above the presented tariff options
- Customers will not be notified about the experiment. The experiment is an open field study
- Users are recruited via Facebook Advertisements
- We observe how the customer experience changes based on the presented nudge
- We observe which tarif options is clicked based on the presented nudge
- A stop rule is implemented
    - We will examine the experiment after 500 participants
    - We will examine the experiment after 14 days of running

The experiment is divided into two stages. The first stage is a pilot of the technologies used to deliver the experiment and collect behavioral data. This pre experiment is done with 260 participants where 50% of users will get the nudge and 50% won't. The second stage involves the full deployment of the experiment on the live website of the fictional insurance company.

User Flow on the Website

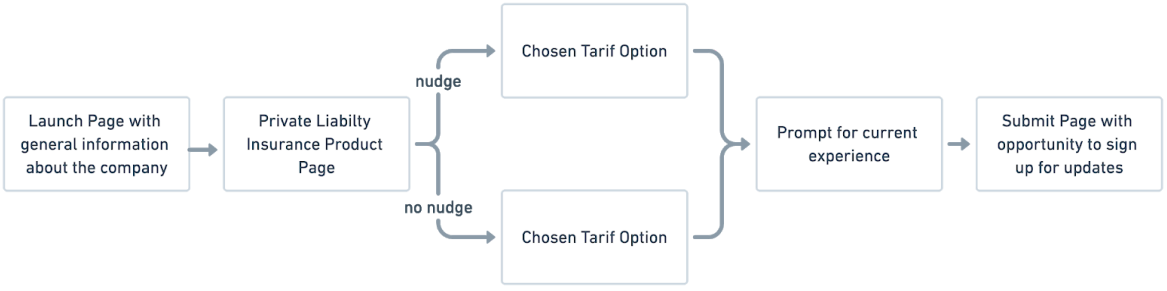

Figure 3: User flow on the website during the pretest

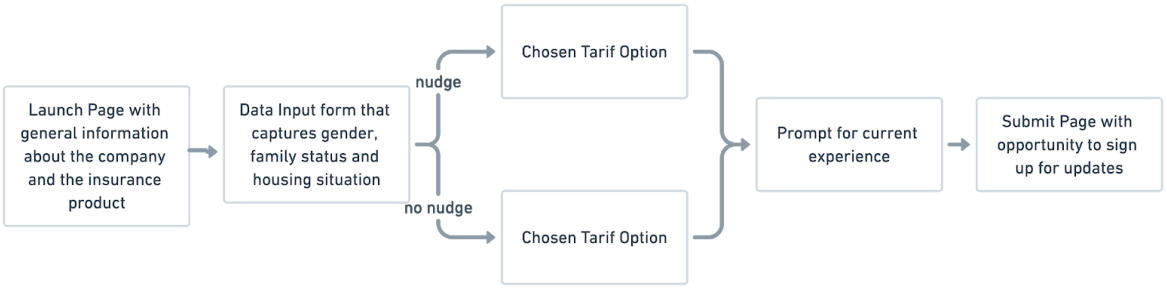

Figure 4: User flow on the website during the field experiment (second phase)

Scope of the Pre-Analysis Plan

This document is based on the first data collection of the experiment. The data was collected from **29.11.2019** to **01.12.2019.** Because of the first insights from the pretest, several adjustments for the field experiment will be made to gather more information. Those adjustments are described in the experiment steps below.

Outcomes

The following variables will be used to estimate the effect of displaying a high threat nudge to users of the website.
Users are defined as people who visit the website to inform or buy a new insurance product. This can be an already existing customer of an insurance or a new customers. With the help of the Facebook ADs we target only users in Europe.

Main Outcome: User Experience for a Given Nudge

The unit of observation for this outcome is the level of user experience. This level is prompted right after a tariff option is chosen by the user. Here, the user is asked for his experience on the site so far via a list of three smileys: A sad one, a neutral one and a happy one. This experiment will evaluate the effect of a high threat nudge based on this level of user experience.

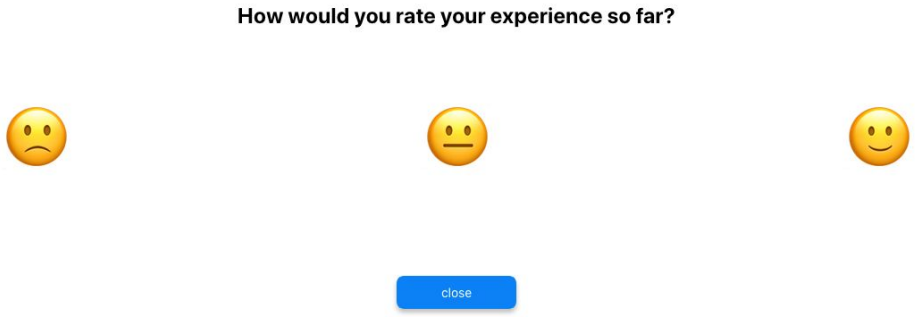

Figure 5 : Feedback options during the pretest

Figure 6 : Feedback options during the field experiment

Secondary Outcome: The Chosen Tariff Option

This unit of observation for this outcome is the selected option by the user. When visiting the website and informing about the insurance product, the user has the choice between three distinct options, which are presented by varying tarif options and coverage levels. Those options consist out of a basic, a comfort and a top coverage.

Estimation of the Treatment Effect

This is the main analysis. The most important analysis involves examining the effect of the nudge on the user experience. Since the experiment design includes non parametric values that are not suitable for a statistic t-test, a Mann-Whitney U test ist used to analyze a potential effect of the treatment. Further analysis tests the ATE on the user experience based on the presented nudge. This analysis is done for the user experience as well as the chose tariff option.

In the full field experiment setup also subsets of users and the effect of the nudge are evaluated, with the help of additional data gathering, as described before.

Generally it should be analyzed if a salience nudge has an effect on the user experience. With those insights, a recommendation for future nudge design in complex choice architectures can be made and how nudges can “backfire” in the domain of insurance.

All data processing as can be found in the GitHub repository of the thesis (https://github.com/yOoMarvin/insurance-nudging)

References

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