



DESIGN ELEMENTS OF DIGITAL NUDGES
AND EFFECTS ON CONSUMER BEHAVIOR:
A LITERATURE REVIEW

Seminar Thesis
of

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List of Abbreviations

BI	Business Intelligence
BPI	Business Process Intelligence
BPM	Business Process Management
DW	Data Warehouse
GT	Geogria Tech
PM	Process Mining

Abstract

1 Introduction

In the last ten years, our lives became more and more digitized. We buy products in online shops, book our next trip and holidays on digital hotel platforms and even manage our finances with the help of our smartphones (Schneider et al. 2018). All those digital environments have one thing in common. Choices. All the time users are faced with choices they have to take. And even if people don't perceive it directly. There a lot of things digital (and also non-digital) environments that frame the whole choice process and therefore influence the decision-making through certain biases and heuristics (Tversky and Kahneman 1974).

Johnson et al. 2012 states that "what is chosen often depends on the representation". This representation is often described as the term of choice architecture, which should "alter people's behavior in a predictable way" Thaler and Sunstein 2009. In the age of digital transformation, digital environments are powerful tools where the choice architecture can be controlled in detail and therefore provide opportunities where user behavior can be influence in several ways with the help of user-interface design elements. This process is called "digital nudging" (Weinmann et al. 2016).

One example for such a digital nudge can be found on the online travel platform *booking.com*. Here users typically search for travel accommodations. On the results pages, several hotel rooms are listed. With the description of the room and the price comes an information that this hotel was booked several times in the last 12 hours and that are only a specific number of rooms free. In bright, red color this should create a scarcity in the mind of the user, so the good is perceived as more valuable. Through this digital nudge, the likelihood of reservation in this particular hotel is increased¹.

Digital nudging and the design of online choice architecture have recently gained interest in research. Because of the complexity behind this concept it is important to understand how such nudges influence the decision-making of the user and how the cognitive biases behind it work. Especially in consumer choices there are good and bad patterns of nudging when it comes to an ethical point of view (Sunstein 2015).

To get a better understanding of how digital nudges influence consumer choice this paper presents a systematic literature review of studies from the last ten years where offline- as well as online nudges are investigated in scientific manner. This introduction is fol-

¹A screenshot of the web page can be found in the appendix on 1

lowed by description of the conceptual and theoretical background to get a better understanding of the concept of digital nudging and the theories behind it. Afterwards the method and approach of the literature review is introduced to the reader. In the main part the results are discussed where also a research gap is presented to give some suggestions for future research.

2 Conceptional Background

The foundations chapter covers theoretical background concepts that are necessary to understand the later presented results and discussion. In detail this can incorporate points like: - Theoretical background about nudges (based on Thaler and Sunstein) - Offline focus – but more and more adoption in IS fields - IS researches transferred theoretical concepts to IS domain and digital environments - Nudge principles - Biases / Heuristics digital nudges - Good patterns vs. dark patterns

3 Methodology

The methodology section aims to present the research approach to the reader. Here different aspects of the research will be introduced and explained in detail. This includes: - Overall search strategy - Identification of relevant journals and why they're used - Used keywords, queries and terms for the search - Classification and patterns of papers

4 Results

The presentation of the literature review's results is the main part of this seminar thesis. Identified concepts, research types, use cases and more will be presented and discussed step by step. The goal of this chapter is to provide a detailed explanation of the underlying concepts and insights of the examined literature. This could include sub chapters like: - General information (number of articles, year of publishing, domain of journal) - Research type (empirical, non-empirical, qualitative, quantitative) - Field of use (IS Field, use case) - Nudging principles and concepts (used biases, choices, design elements)

5 Conclusion

In the end of the thesis all results will be summarized and critically discussed. The goal is to identify a research gap and to give recommendations for future research that would advance the topic.

5.1 Summary of Findings

5.2 Limitations

5.3 Recommendations for future research

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Appendix

Booking.com € [List Your Property](#) [Register](#) [Sign in](#)

[Accommodations](#) [Flights](#) [Flight + Hotel](#) [Car Rentals](#) [Airport Taxis](#)

Search
Destination/Property Name:

Check-in Date
 Monday, April 22, 2019
Check-out Date
 Sunday, April 28, 2019
6-night stay
2 adults
No children 1 room
☐ I'm traveling for work
[Search](#)

Bali: 6,417 properties found – including 1629 with great value today!
3 reasons to visit: relaxation, beaches & food [Map View](#)

[Our Top Picks](#) [Price \(lowest first\)](#) [Review Score & Price](#) [Stars](#) [Star rating and price](#) [Top Reviewed](#)

Dewangga Bungalow ★★
Downtown Ubud, Ubud - [Show on map](#)
3 people are looking right now
Booked 3 times in the last 12 hours on our site
Double or Twin Cottage
Only 7 rooms left on our site!
Risk Free: You can cancel later, so lock in this great price today!
Excellent **8.7**
759 reviews
Location **9.5**
Price for 6 nights
€282
includes taxes and charges
FREE cancellation
No prepayment needed
[See availability >](#)

Figure 1: Digital nudging example - booking.com

Affidavit

I hereby declare that I have developed and written the enclosed seminar thesis entirely on my own and have not used outside sources without declaration in the text. Any concepts or quotations applicable to these sources are clearly attributed to them.

This seminar thesis has not been submitted in the same or substantially similar version, not even in part, to any other authority for grading and has not been published elsewhere. I am aware of the fact that a misstatement may have serious legal consequences.

Mannheim, 23. March 2019

Marvin Messenzehl