Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Political Influencers?

How voters make up their minds in the age of social media and digital communications.

Universität Hamburg
Fakultät für Wirtschafts- und Sozialwissenschaften

Dissertation

zur Erlangung der Würde des Doktors der Wirtschafts- und Sozialwissenschaften

(gemäß der PromO vom 18. Januar 2017)

vorgelegt von
Bendix Hügelmann
aus Bonn
Hamburg, den 7.7.2021

Vorsitzende: Prof. Dr. Katharina Kleinen-von Königslöw

Erstgutachter: Prof. Dr. Kai-Uwe Schnapp

Zweitgutachter: Prof. Dr. Raoul Kübler

Datum der Disputation: 21.06.2021

Meinem Vater.

Regatten werden im Ziel gewonnen.

(Wolfgang Hügelmann)

Contents

Contents	VII
List of tables	XI
List of figures	XII
Abbreviations	XIII
Acknowledgements	XV
Prologue: Position and reflexivity	XVII

Part I – Introductory part

1.		**Introduction**	3
	1.1	Review of the literature	9
	1.2	The research gap	19
2.		**The Papers‘ Contribution to the Literature**	23
	2.1	Political Influencers? Theoretical and analytical contributions to the analysis of Instagram as a means for political communication.	23
	2.2	What if we are all just trained monkeys? A neurological approach to analyzing individual decision-making in a political context	25
	2.3	Self-Marketing and political support. Evidence from social media, experimental, and survey data	26

Part II – The Individual Papers

3.	**Political Influencers? Theoretical and Analytical Contributions to the Analysis of Instagram as a Means for Political Communication**	31
3.1	Introduction	31
3.2	Theory: Affective decision-making and political campaigns	33
3.2.1	Cognitive ease and social media	37
3.2.2	Prospect theory	38
3.3	State of research	40
3.4	Hypotheses	42
3.5	Data and method	44
3.6	Analysis	48
3.6.1	Cross-sectional analyses: drivers of user engagement	51
3.6.2	Panel-data analyses: drivers of profile growth	54
3.7	Interim conclusion	59
3.8	Discussion	59
3.9	Conclusion	61
4.	**What if we are all just Trained Monkeys? A Neurological Approach to Analyzing Individual Decision-Making in a Political Context**	63
4.1	Introduction	63
4.2	Social media, smartphones and political decision-making	65
4.3	Theory	68
4.3.1	The nucleus accumbens	70
4.3.2	The frontal cortex	72
4.3.3	Interim conclusion	76
4.4	Research design	77
4.4.1	Participants: Pivotal groups	77
4.4.2	Recruitment	79

4.4.3 Procedure 79
4.4.4 Hypotheses 81
4.5 Analysis 82
4.6 Discussion 92
4.7 Limitations 96
4.8 Conclusion 97

5. Self-Marketing and Political Support. Evidence from Social Media, Experimental, and Survey Data 101
5.1 Introduction 101
5.2 Theory 103
5.2.1 Political communication on Instagram 106
5.2.2 Increasing contact, creating an image: The politicians' side 108
5.2.3 The logic of affective decision-heuristics: The voters' side 111
5.2.4 The funnel that is rather a journey 114
5.2.5 The role of personalized social media for political will-formation 117
5.2.6 It's the brand that makes the difference 121
5.3 Explorative test: A Quasi-Experiment to Analyze the Efficacy of Political Self-Marketing 123
5.3.1 How individuals rate politicians: Self-marketing and its impact on potential voters 124
5.3.2 Interim conclusion 129
5.4 Analysis 130
5.4.1 Data description 131
5.4.2 Method 133
5.4.3 Results 133
5.5 Discussion 136
5.5.1 A scheme for political social media marketing 137
5.5.2 A new political phenotype? 139
5.5.3 Limitations 139
5.6 Conclusion 140

Part III – Conclusion

6	**Conclusion: What I did**		145
6.1	What I found out		146
6.2	What necessitates discussion		153
6.3	How to progress from here		154
6.4	Who can use my results? Practical implications		155
6.5	Final remarks		155
	Epilogue: Political Influencers		157
7	**Literature**		159
8	**Appendix**		178
	Appendix 1.	Results keyword research 'political communication' on the Web of Science/Social Sciences Citation Index	178
	Appendix 2.	Additional tables chapter 3	179
	Appendix 3.	Data used in chapter 3	180
	Appendix 4.	Stimuli used in chapter 4	181
	Appendix 5.	Predictor variables, outcome variables and covariates used in the analyses for chapter 4	191
	Appendix 6.	Questionnaire used in the experiment in chapter 4	196
	Appendix 7.	Additional table chapter 4 (Table 12)	207
	Appendix 8.	Data used in chapter 4	208
	Appendix 9.	Flyer used in the quasi-experiment in chapter 5	209
	Appendix 10.	A scheme for political marketing	210
	Appendix 11.	Data used in chapter 5	211
	Appendix 12.	The Political Influencer Matrix	212
	Appendix 13.	Appendix to the Literature	215
9	**Informationen gemäß §6 (7) Promotionsordnung**		216

List of Tables

Table 1:	Hypotheses used in the analysis	43
Table 2:	Instagram usage by political candidates a driver for voter turnout in constituencies?	42
Table 3:	Mean share of first votes across parties, distribution of Instagram-usage	179
Table 4:	Instagram a driver for share in first votes?	50
Table 5:	User engagement and posting behavior: OLS Regression	52
Table 6:	Channel growth, frequent posting and user engagement	56
Table 7:	Descriptive statistics Instagram usage over 53 days	179
Table 8:	Ratings for candidate traits	83
Table 9:	Ratings for political capital	85
Table 10:	Electoral behavior	87
Table 11:	Amplification effects from smartphone usage	89
Table 12:	Amplification effects from addictive behavior	207
Table 13:	Effect on Instagram profile growth induced by Google search volume	121
Table 14:	Rating of trust and approval in relationship to media-type	128
Table 15:	Descriptive statistics for relevant variables: Ratings and Instagram-usage	132
Table 16:	Instagram usage and the rating of politicians	134
Table 17:	Robustness-test with additional covariates	135
Table 18:	Political Social Media Marketing Journey	210

List of Figures

Figure 1:	Decision-making based on Kahneman 2011	35
Figure 2:	Daily Growth Instagram Dr. Angela Merkel	58
Figure 3:	Daily Growth Instagram Martin Schulz	58
Figure 4:	Mean values across all dimensions vs. neutral baseline	93
Figure 5:	Figure 5: Screenshot Instagram profile Dorothee Bär. Ms Bär celebrating football	105
Figure 6:	Screenshot Instagram profile Robert Habeck: Mr Habeck shaving in the sun	105
Figure 7:	Instagram profile growth: Armin Laschet	119
Figure 8:	Instagram profile growth: Dr. Markus Söder	120
Figure 9:	Information sheet for group A	126
Figure 10:	Information sheet for group B	127

Abbreviations

Adj.	Adjusted
AfD	Alternative für Deutschland
ANOVA	Analysis of Variance
API	Application Programming Interface
App	Application
BTW17	Bundestagswahl 2017
BZgA	Bundeszentrale für Gesundheitliche Aufklärung
CDU	Christlich Demokratische Union Deutschlands
CEO	Chief Executive Officer
CSU	Christlich-Soziale Union
DNR	Digital News Report
FAQ	Frequently Asked Questions
FDP	Freie Demokratische Partei
GLS	Generalized Least Squares
GT	Google Trends
IGT	Iowa Gambling Task
KPI	Key Performance Indicator
MP	Member of Parliament
OLS	Ordinary Least Squares
PESO	Paid Earned Shared Owned Media
PVS	Phantom Vibration Syndrome
PR	Public Relations
S1	System 1
S2	System 2
SPD	Sozialdemokratische Partei Deutschlands
TV	Television
U.S.	United States
VIF	Variance Inflation Factor
VMPC	Ventromedial Prefrontal Cortex
VTA	Ventral Tegmental Area
WYSIATI	What-You-See-Is-All-There-Is

Acknowledgements

As it is common practice, I would like to take the opportunity to thank some of the people who supported, helped or influenced me in the process of writing my dissertation.

First, I'd like to thank Prof. Dr. Kai-Uwe Schnapp and Prof. Dr. Raoul Kübler for supervising my dissertation. Kai, thanks for giving me the opportunity to prove myself and to follow my ambitions. I am grateful for your guidance, support and openness. As there were some dark passages along the way, thank you for providing the space and time needed for keeping myself together while everything felt like falling apart.

Raoul, thanks for the lively discussions on marketing and politics and for providing answers to literally any analytics-related question. As there are – of course – no stupid questions there most certainly are more sophisticated ones than others. Thanks for taking care of even those I honestly not dared to ask anyone else.

Second, I'd like to thank those who helped me navigate through the at times confusing sea that is academia. Dear Kamil, thank you for providing guidance and intellectual support for any methodological or logical question I encountered throughout the writing. Dear Olga, thank you for introducing me to the world of teaching and for the sparring ever since. Dear Masha, Kea, Laura, Dominik and Brian: Thank all of you for your comments and the fruitful discussions we've had during the Kailloquium-Sessions. Dear Saskia, thank you for all the help and support you offered in almost any possible dimension.

Thanks to the Faculty of Business, Economics and Social Sciences of the Universität Hamburg and the faculty's Graduate School for co-funding conferences and related research. Thanks to Olaf Bock, Ziad Zorgati and the faculty's Forschungslabor for support and counseling during my experimental research.

Thanks to the Hamburgische Wissenschaftliche Stiftung and the Stiftung Wissenschaft und Demokratie for co-funding my research and my lecture-series on Digitalization and Democracy. Thanks to Carline Mohr, Dr. Christof Biggeleben, Carsten Ovens, Prof. Dr. Christoph Bieber, Simon Kruschinski, PD Dr. Jan-Hinrik Schmidt,

Gyde Jensen MdB, Ann Cathrin Riedel, Johannes Hillje, Prof. Dr. Katharina Kleinen-von Königslöw, Mareike Wieland, Jochen König, Carsten Meyer-Heder MdBB, Lisa Merten and Martin Fuchs for speaking at one of my guest lectures on Digitalization and Democracy. Your input made the lectures the success they were.

A big 'Thank You' to everyone I had the pleasure to work with in a professional context outside of academia. Just as a journalist never reveals his sources, a communications consultant does not talk about his clients. So, let me just say this: Thank you for your trust in my work and your courage to break new ground in communications together. The necessary insights for mobilizing the relevant margins lie in the data, always.

To all my friends and to my family: Thank you for your emotional support. The past years at times threw the absolute worst at us but in the end, we managed to go through it together.

It is thus with all my (heavy) heart that I thank my *parents* for all the loving support that guided me through the past years. I will always be grateful for the trust you put in me. Even though one got missing along the way, we will always remain connected within.

The same holds true for my siblings. There are so many things for which I cannot thank you enough so I will spare us the embarrassment of even trying.

Last but not least, dear Annika: I know you'll be instantaneously embarrassed from reading through this but I'm afraid I can't help it. Thank you for literally everything. Without your support, I would not have made it. It is with great confidence that I look forward to everything that lies ahead. Thanks for being my partner in crime. ❤

Prologue: Position and reflexivity

Before I began working on my dissertation, I was with a communications consultancy. Working as a consultant was both insightful and annoying at the same time. Insightful because I learnt a lot on different industries through the clients and projects I worked on. What constantly annoyed me, however, was the amount of bullshit-talk that made up most of the industry-communication itself. Not a week gone by without anyone proclaiming a new 'breakthrough social listening tool', a 'data-driven whatnot' or, the pinnacle of non-sensory 'AI-hacks for communications'. I found that bothering and I just couldn't stand the amount of snake-oil. So, I embarked on a journey to separate myself from the pack by gaining knowledge on the effect of digital communication on – as you will – society as a whole. This is what motivated me to take the task of writing this dissertation.

However, from day one I was certain to return to the communications and consulting industry after conducting the present research. Because after all, working in an environment that is constantly changing and adapting to the Zeitgeist like the communications industry I find deeply rewarding.

The reason why I am laying this out is simple: I am convinced that every individual is shaped by their very own perception of reality. Of course, it is the very nature of science to produce objectively verifiable findings and thereby objective knowledge. But no matter how much effort and rigor are devoured into living up to this scientific ideal, every scientists' work will always be to a certain extent shaped by individuals' take on the matter. This section consequently provides my epistemological placing as a researcher and political scientist.

Given my professional background there is one question that accompanies my research like the bassline of a song. What do my findings imply for practitioners? What I found puzzling in the beginning of my dissertation was the seemingly low relevance of practical implications within my academic periphery. Becoming aware of the necessity to distinguish between scientific and practical relevance hence was an ambiguous process for me. Not everything I found relevant from a practitioners' point of view

was deemed relevant – if at all – by some of my scientific companions. It took a while to get my head around the differentiation of relevance in the academic realm. This is arguably most visible in my first paper that heavily focused on assessing what was actually happening in the world of digital political communication rather than conceptualizing a corresponding theoretical foundation for my analysis.

Arguing about how to scientifically approach things by always putting theory at the core of empiricism and analysis clearly helped me going anywhere with my scientific take on a practitioners' topic. However, to this day I at times struggle with the rigor wherewith some scholars oppose the relevance of anything situated outside the strictly academic discourse.

I am aware that this is a never-ending discussion about the role of science and how exactly science, practice and society should interact. Nevertheless, I remain convinced that the practitioners' question of 'what now?' is a legitimate one that should be asked more often, even within the scientific discourse. Knowledge without further implication to the 'outside world' cannot, in my view, be the ultimate goal of science.

PART I
INTRODUCTORY PART

1. Introduction

"There is still a raging debate about whether Cambridge Analytica's data operation made any difference in the campaign's outcome." (Levy 2020, 421)

Without the victory of the Republican Party in the 2016 U.S. presidential election, this dissertation would probably not have been written. The election of Donald Trump as the 45th president of the United States of America confronted the general public with the possible influence of digitalization on political processes. Not for the first time, but on an unprecedented scale: Sure, there had been rumors of shifting electoral margins by the use of digital advertisement in the wake of the Brexit referendum. The outcome of the presidential election, however, was of a different kind. Not only had an electoral success of the republican party and Donald Trump been deemed highly unlikely by the majority of the U.S.-pollsters prior to election day. Furthermore, and from a normative perspective, it was *wrong* to elect a misogynist, xenophobic, ignorant right-wing populist to the most powerful office in the world.

Consequently, the aftermath of the election was dominated by one question: How could it be that this happened anyway? Yet, a little later, a seemingly plausible and compelling answer filled the post-electoral void.

By the end of 2016, the swiss tabloid 'Das Magazin' featured an article about the researcher Michal Kosinski. In the article, Kosinski explained how he had developed a scientific method to assess the character of any given individual only by analyzing their Facebook-likes (Grassegger and Krogerus 2016).

The article implied, that the usage of psychological targeting by a company called Cambridge Analytica had significantly influenced the outcome of the presidential election of 2016. The article suggested that it was the clever usage of micro-targeted advertising in social and digital media that shifted the electoral outcome in favor of Donald Trump. The narrative was compelling and powerful: Speaking for the general

public, suddenly *it* all made sense. The usage of data-driven political targeting was a grateful explanation for what was actually inexplicable: Why had so many people not done the *right* thing and chosen Hillary Clinton but Donald Trump? Cambridge Analytica implied that by using micro-targeted social media advertisement it was able to influence individual behavior and hence change the outcome of elections (Nix 2016, Nix 2017). The 'Das Magazin' article itself was of rather poor journalistic rigor as it arguably confused causality with correlation and based its analysis mainly on Cambridge Analyticas very own sales pitch (Wolfangel 2016). However, some 18 months later, an investigative collaboration of the New York Times and the Guardian released their take on the events that later would be called the Facebook/Cambridge Analytica data scandal:

A whistleblower named Christopher Wylie exposed how Cambridge Analytica had created psychographic profiles for almost ever U.S.-citizen based on their Facebook-profiles. The data necessary to do this was illegally obtained through a research-based loophole in the Facebook application programming interface (API). According to Wylie, Cambridge Analytica then would have used the data within the U.S.-presidential election to help elect Donald Trump into office.

"It is incorrect to call Cambridge Analytica a purely data-science company or an algorithm company", said Wylie in an interview with the Guardian. "It is a full-service propaganda machine. If you can control all of the streams of information around your opponents, you can influence how they perceive that battlespace and you can then influence how they are going to behave and react." (The Guardian 2018)

The claims brought forward by the whistleblower again were compelling, powerful – and outrageous. According to Wylie, the digital advertisement techniques applied by Cambridge Analytica made it possible to manipulate voters and hence facilitate influence on the electoral process. Wylies' testimony was in tune with Cambridge Analyticas original sales pitch as outlined by its CEO Alexander Nix on the 2016 Concordia Annual Summit. Concerning Cambridge Analyticas abilities on voter targeting Nix said:

"[…] we were able to build a model to predict a personality of every single adult in the United States of America. […] If you know the personality of the people you are targeting you can nuance your messaging to resonate more effectively with those key audience groups." (Nix 2016)

Albeit Nix to my knowledge never stated it explicitly in public, the entire pitch of Cambridge Analytica revolved around the (make believe) ability to nudge voters and voter segments by the means of advertisement and communications into taking certain actions, and to thereby influence and alter the outcome of elections.

Whether or not anything like this is possible, is the focal point of this dissertation.

Much has happened since the activities of Cambridge Analytica became known. The company itself stopped its operations and dissolved as a result of the revelations and a legal dispute with Facebook in 2018 (Solon and Laughland 2018). The narrative of a possible influence on individual behavior through social media, however, has been etched into the collective memory. The lavishly produced Netflix documentary of 2019, 'The Great Hack' used the same narrative, and solidified the claims by reaching a global audience. Again, most of the arguments brought about were in line with Cambridge Analyticas original pitch. From a scientific perspective, still little is known about the relationship between social media communication and individual political preferences and action.

Concerning the role and usage of social media in the political realm this leads to a confused status quo: On the one hand, the idea of a possible influence on voters through social media has persisted. On the other hand, there is still no scientific evidence for the existence of a corresponding causal mechanism.

As digitalization progresses, I believe society is at an intermediate stage between the remains of a reality shaped by linear information-processing, and the coming-of-age of digital media and individualized information-processing. This state of affairs is problematic for open, liberal, democratic societies because it promotes apparently contradictory interpretations of reality. The believe that people are influenced by social media when casting their votes is one of many symptoms of the resulting societal

uncertainty. For the analysis of political communication and voter-behavior, it is hence crucial to acknowledge the scope of the changes brought about by digitalization. Digitalization's prime outlet – the internet – literally changed or at least affected almost everything people do. Consequently, neither of the phenomena associated with digitalization and social media are either short-term or reversible.

Most certainly will future researchers analyze other social media networks than those existing today. There will be another next big thing in digital and social media. The operating principles for global social media platforms, however, won't necessarily change: Connecting individuals to one-another on the foundation of a both voyeuristic and creative, intrinsic motivation. In order to account for this profound and structural shift in the construction of human societies, I propose the following:

It is necessary to ask broader questions of how the changes brought about by digitalization affect human behavior patterns in a political context. How does digitalization affect the formation of a political opinion? How does the increasing amount of digital media consumption affect information-processing? And how does the self-marketing by politicians facilitate political support on the individual level? These and related questions constitute this dissertation that aims to assess how individuals process information in a political context under the influence of social media with regard to their voting intentions.

It goes without saying that when I expect digitalization processes to affect individual behavior it is necessary to ask what motivates and drives people and what ultimately constitutes their behavior.

Besides social media are countless examples how digitalization already affected and changed central aspects of everyday lives and human behavior. Take the dating app Tinder as an example: Prior to Tinder, individuals who were searching for a romantic partner had to rely mostly on chance, or on their network of friends and families. With Tinder, the element of chance is taken out of the dating-equation and substituted with geographic proximity. In short, Tinder users can separate attractive from non-attractive potential dating-partners in their vicinity by either swiping left or right on their smartphone screen. A swipe left means no interest in the presented individual. A swipe

right indicates interest. If both parties *swipe right* and thereby consent into mutual interest/attraction, a so-called *match* is created and the two users are entitled by the app to start a conversation. Tinder is thus not just a digital manifestation of analogue dating-behavior. The app *changes* the entire process associated with searching and finding a romantic companion and thereby dating-behavior as a whole (Sumter et al. 2017, 20).

Another example lies in the changing mobility patterns observed in urban areas. Ride-sharing applications substitute conventional cabs and public transportation through an individualized, hyper-local supply of mobility-services. The corresponding technology hence not only changes *the way* how people use mobility services, but how they integrate these services into their *mobility-patterns*. The provision of smartphone-based services hence changed how certain individuals navigate through their everyday lives.

It is thus counter-intuitive to assume, that the fundamental changes in everyday life brought about by digitalization don't affect the political realm. As this dissertation will show, recent developments in digital and social media already affected how individuals evaluate politicians and how this relates to the formation of a political opinion and eventually voting.

Political actors nowadays have the opportunity to constantly and directly interact with the electorate. Social media and the corresponding self-marketing of politicians create a completely new source of information that is emitted towards the electorate in general, and to young and first-time voters in particular. In addition, the medium through which this political information is conceived, namely the smartphone, arguably amplifies the efficacy of political marketing given how people bond with their smartphones.

For analyzing the hypothetical influence on elections through social media it is therefore necessary to assess how digitalization changes (political) information-intake and hence affects corresponding behavioral and decision-making patterns on the individual voter-level. More specifically, the alleged electoral influence that derives from social media communication does not necessitate the exertion of influence on all

voters equally. In view of close electoral margins, the distribution of mandates can depend on less than a hundred votes. Consequently, the targeted activation and mobilization of small groups arguably is sufficient to influence and alter the outcome of elections.

This is by no means a new phenomenon. Examples of close margins are the U.S. presidential election of 2000 for a first past the post system (Bond et al. 2012, 295), or the German state-election in the constituency of Hesse in 2018 for a system of relative majority (Statistik Hessen 2018). What is new, however, is the technological ability to precisely communicate with those societal groups, whose willingness to vote – or not to vote – could affect the overall election result.

Not only does social media enable microtargeted advertisement on an unprecedented scale. Moreover, the internet in general and social media in particular provide for data-streams that enhance voter-segmentation and arguably increase the efficacy of corresponding mobilization-campaigns.

In view of this circumstance, the scientific analysis of the efficacy of digital communication and advertisement strategies on the individual voter level seems necessary and timely. If only a few votes in total are necessary to alter a parliamentary majority, the deliberate exertion of influence on these 'tipping point margins' is a relevant scenario that should be examined more closely.

As a direct consequence, my dissertations' scientific focus lies at the intersection of political communication, electoral research, behavioral science and marketing science. Throughout the three papers that constitute this dissertation I focus on establishing causality between social media communication i.e. political marketing/campaigning, and individual behavior.

Albeit the concept of causality is questioned by some authors regarding the promise of 'big data', I propose that the search for causality increases the understanding of the efficacy of social media and related platforms as a whole. Only if we *know* how individuals perceive politics we will be able to analyze, understand and estimate behavioral patterns that derive from the individuals' perception. I hope to contribute

to the literature by presenting an interdisciplinary approach to a both complex and rapidly evolving research-environment. The fundamental research question that hence subsumes all my dissertations papers is the following:

"Does political communication in social media affect the individual notion of politics and hence affect the outcome of elections?"

1.1 Review of the literature

The following section guides through the different bodies of literature I consulted in building the theoretic and methodological foundation for each of my three papers. As outlined above, the present work is situated at the intercept between political communication, electoral research, behavioral science, and marketing science. While my dissertation hence is of interdisciplinary nature, its emphasis lies in the field of political communication. For delineating the relevant literature, this is important to highlight because political communication is by itself an interdisciplinary research field. Its interdisciplinarity has implications for the corresponding body of literature as there is – if at all – only little common ground established in the literature. Against this background, a plain selection of landmark-studies is not feasible given the variety of thematic and methodological focal points that constitute the research area. It is fair to say that political communication research lacks a common baseline, a gravitational center so to say, that connects the scattered dots of individual research into a broader research topic.

There are several reasons for this fuzzy state of political communication research and I will discuss the practical implications that go along with this later on. However, one of the main reasons lies in the fact that political communication research constituted itself with no clear alignment towards a broader research discipline. Situated between communication science and political science, neither of both disciplines emphasized on political communication. Moreover, political science has attributed only little relevance to political communication research for decades (Pfetsch and Esser 2004, 3; Schulz 2008, 15; Gabriel, Maier, Faas 2020, 27). This is a remarkable state of affairs,

since politics and communication – especially in liberal democracies – are mutually dependent and hence difficult to separate logically. Graber and Smith (2005) provide a correspondingly inclusive definition of the term political communication: Political communication "encompasses the construction, sending, receiving, and processing of messages that potentially have a significant direct or indirect impact on politics. [...] 'The key element is that the message has a significant political effect on the thinking, believes, and behaviors of individuals, groups, institutions, and whole societies and the environments in which they exist' (Graber 1993, 305)." (Graber and Smith 2005, 479)

Regarding the scope of this definition, one could argue that political communication research should normatively lie at the core of political science itself: The potential effects that derive from political communication arguably expand to all political matters across the *politics, policy* and even the *polity* dimension.

However, this is not the case. The status of political communication within political science is unsettled. “In political science, political communication remains very much a sideline”, as Graber and Smith (2005) put it. “It fares better in communication, but shares the limelight with many other subdisciplinary specialties. Marginality is common in interdisciplinary fields. Unfortunately, it hampers growth because it discourages many promising young scholars from concentrating on the field. It also handicaps intellectual cross-fertilization because research published in specialized journals does not enjoy the wide audiences of mainstream journals and therefore lags in citations in the mainstream literature.” (Graber and Smith 2005, 479-480)

What Graber and Smith describe is mirrored in the amount and distribution of political communication contributions in the literature. Searching for ‘political communication’ on the Web of Science/Social Sciences Citation Index (SSCI), a total of 4.402 studies got published and ranked since 1945. ‘Voting’ in comparison, is associated with 36.445 studies while ‘democracy’ ramps up a total of 102.998 contributions to the literature. Moreover, of the 4.402 political communication studies, 50% are attribute to communication science while only 29% are attributed to political science. The remaining 21% are distributed across a variety of research areas ranging from

sociology to robotics (see Appendix 1 for visual presentation of research-distribution across fields). This anecdotical evidence supplements the argument by Graber and Smith (2005) and illustrates both the niche existence and the unsettledness of the research area.

For political science, the debate about the place for political communication has come a long way. As early as the 1970s (Heribert Schatz), 1980s (Max Kaase) and 1990s (Kaase), the state and relevance of political communication research was part of the ongoing professional debate in political science (Sarcinelli 2011, 21). Yet, it is still not conclusively clarified in the literature if political communication has the status of an own research field within political science. While Oswald and Johann (2018) explicitly name Political Communication as an institutionalized field of studies, Gabriel, Maier and Faas (2020) express concerns about its position.

According to the authors, political communication received only scarce attention from political science early on. This lack of attention for political communication would date back to implications drawn from landmark-studies in electoral research. Both Lazarsfeld's and Campbell's assessments of political communication attributed little significance for political attitudes and behavior. This had far-reaching consequences which are affecting political communication research until today. While the interest in political communication research increased since the beginning of the new millennium, there are still scholars that attribute only a second-order relevance to the research field (Gabriel et al. 2020, 27).

The fact that political communication research lacks a clear alignment and structure makes it difficult to assign the present work to any existing branch. Even more so, the existing literature on political communications is fractured and there are three reasons for that:

First, as political communication research is by design an interdisciplinary research field, the vast majority of literature is situated somewhere in between communication sciences, political science, and journalism studies (Oswald and Johann 2018, 1) or other related research areas. Consequently, as every field has its own scientific focus, political communication research is on the one hand rich in methods and scope. On the

other hand, this interdisciplinary nature leads to a fractured structure of arguments dependent upon research methods and regional focus. This alone makes it difficult to draw general conclusions from the broader research field.

Second, the vast majority of the published studies as of today focus on U.S. politics (Boulianne 2018, 955). While there are countless reasons for that it is mostly due to the fact that it was U.S. campaigning and politics whose actors repeatedly were the first to introduce sophisticated campaigning techniques to political communications. Regarding developments in (digital) campaigning techniques ever since, the prerogative of U.S.-campaigning weighs heavily on the debate on causes and effects associated with social media (Joathan and Lilleker 2020, 14).
Accordingly, there exist far more studies in the literature that analyze political communications in the context of the U.S. political system than studies that analyze the usage and impact of corresponding campaigning strategies in other political systems and societies. For researchers analyzing U.S. (electoral) politics that is naturally not a problem. It is a hurdle though for studies that focus on, say, European politics as most of the insights deriving from U.S. studies are hardly transferable to the European voter market given how different the corresponding political systems are.
In Germany, the analysis of advanced campaigning techniques associated with U.S. presidential elections entered the scientific debate by the term of 'Amerikanisierungsdebatte'. Subject of this debate was the level of professionalism and the emerging role of communications professionals from outside the political realm that shaped U.S. election campaigns (Donges and Jarren 2017, 149).

Third, only few studies focus on political communication outside of campaign season. That is, the time before an election. During electoral campaigns, political actors ramp up their efforts in pursuit of the best possible electoral outcome, i.e.: maximizing their share of casted votes. While it is feasible to analyze these phases of intensified political communication, a too narrow focus on campaigning fosters analytical blind spots: Focusing on electoral cycles excludes how the voter makes up his/her mind under the influence of political communication outside of electoral campaigns (Boulianne 2020, 962). Furthermore, the often decisive and explanatory strategical decisions in terms of

communication have already been made when 'traditional' campaign season takes off. Political parties, especially while office-holding, arguably have overcome conventional campaigning patterns and hence find themselves in a state of constant campaigning (Joathan and Lilleker 2020, 2). Be it in the blatant, aggressive, ultra-partisan style of communication as performed by former U.S. president Donald Trump, or in the more modest European approach of ongoing (deep) canvassing during regional elections as performed by the German CDU[1]. Both strategies follow the same rationale: Increase partisan turnout and mobilization through the identification and activation of potential partisans or undecided voters.

These campaigning strategies are just two of countless examples of how digitalization already affected the political realm. Both show how technological capabilities associated with digitalization are embraced by political actors in order to affect the public sphere. Communications techniques like social media and other means of political marketing are again only the most visible features of a profound and structural shift in the constitution of politics. It is hence plausible, that the majority of studies in this respect has focused on the platforms and audience effects associated with the platforms.

"More than 300 studies have used survey data to test the relationship between digital media use, such as online news sources and social networking sites, and offline engagement in civic and political life, such as voting, volunteering, and protesting" as Boulianne contemplates in her 2020 meta-study on digital media effects on civic and political participation (Boulianne 2020, 948). While diverse in regional and electoral set-up, the corresponding body of literature lacks at least two things.

First, generalizability: While the metadata "suggest a positive relationship between social media use and participation in civic and political life" (Boulianne 2015, 534), the observed effects vary across samples. Those studies with random samples of youth were more likely to identify a significant effect than general population samples (Boulianne 2015, cited in Dimitrova and Mathes 2018, 333).

[1] For the German Federal Election of 2017, the CDU developed a digital door-to-door canvassing tool. By the ongoing use of this tool, the CDU was able to gather data on the individual voter level and combine this data with online activities. For additional reading, see Haßler and Kruschinski (2019).

Second, as the vast majority of studies used survey or panel data and "none of the studies" (Boulianne 2015, 534) used an experimental research design, the causal effects of social media use on civic and political behavior remain uncertain.
Analyzing the varying manifestations of digital communication and campaign technology has thus increased the general understanding of political communication and its effect on the public, but without isolating "clear monolithic effects" (Dimotrova and Mathes 2018, 333). It is therefore necessary to develop theoretical, methodological and empirical contributions to the literature that focus on the individual voter level.
Referring to Marshall McLuhans' famous quote that the medium is the message (McLuhan 1964, 7), not the single platform but its underlying effect on human communication, information processing and behavior should lie at the core of corresponding research. If we know more about the causes and effects associated with digital communication on the individual level, then we can better understand the phenomena observed on the aggregate level.

Referring to Coleman's foundation of social theory (Coleman 1990), social networking applications or 'social media' arguably describe corporative macro-structures that create an interdependence between the ones that constitute the network (the individual users) and the network itself. Consequently, when asking for social medias' effect on electoral participation and outcomes, analyzing and understanding the corresponding mechanisms and dynamics that occur at the micro/individual level is a necessary condition at last for the understanding of the entire system.

Yet, there is only little contribution to this line of thinking from the political communication literature. A systematic review following the methodology of Borenstein et al. (2009) of the literature on political campaigning illustrates this structural deficit: Between 2010 and 2020, a total amount of 178 studies on 'political campaigning' has been conducted and ranked on the SSCI. Of these 178 studies, only nine focus on the individual voter in terms of research question and design. The other studies assess electoral outcomes and related measures on aggregate level. Of the nine studies that analyze the individual voter in the context of political campaigning, seven deploy experimental research methods. This selection of studies is by no means complete. It however indicates, that analyzing the individual level in terms of political

communication and campaigning has received scarce attention from the literature so far. In face of the rich variety of rational choice-contributions in political science, the lack of corresponding contributions in political communication research arguably is testimony to the very niche existence of the research area.

As a direct consequence, the literature on political communication and related disciplines provided little contribution for the creation of a theoretical argument to model individual behavior under the influence of communication in general and social media in particular. A notable exception being a study by Mayerl and Faas (2018) on the cognitive accessibility of political judgments within campaign dynamics. The authors showed that voting intentions and attitudes towards candidates became more accessible in the context of campaigns (Mayerl and Faas 2018, 1589). The paper pointed the way ahead for my dissertation as it introduced arguments from behavioral science and cognition to modulate individual behavior.

There are many noteworthy studies from behavioral science, cognitive psychology and even neuroscience that provided theoretical arguments for my dissertation. For the sake of brevity, I deem the following contributions as most relevant for the genesis of my papers: From a theoretical standpoint, Kahnemans (2011) concept of fast and slow thinking provided the foundation for conceptualizing individual cognition and behavior. Furthermore, both Kahnemans dual-system theory of fast and slow thinking (2011) as also prospect-theory (1992 with Amos Tversky) provided for much needed theoretical and conceptual structure.

From a methodological standpoint, a study by Stewart and Schubert (2006) had arguably the biggest impact on the making of this dissertation. The authors showed in an experimental field-study, how the placing of a subliminal stimulus in a piece of political TV advertisement affected the recipients' political attitudes toward the given topic, related party, and candidate of the spot (Stewart and Schubert 2006, 103).
The authors were among the first who applied arguments from behavioral science and neuroscience to the realm of political communication and electoral research in an experimental design. However, their pioneering work on cognition, persuasion and advertisement did not receive much attention. As of today, the article published in 'The

Harvard International Journal of Press/Politics' has been cited only twelve times (Google Scholar 2021) and two times on the SSCI. Ironically, this is a good example for the epistemological short-comings that adjoin interdisciplinary research as described by Graber and Smith (2005). Stewart and Schubert close their findings by advocating for policies to govern the use of subliminal and cognitive advertisement techniques in the political realm. The *irony* stems from the dead-end situation and discussion we are facing right now regarding social media platforms, hate speech, fake news and election integrity. Regardless of the specific finding by Stewart and Schubert, the underlying message apparently was written on the wall in 2006 already: It could be possible, that voters are subject to completely uncharted decision-making patterns that resonate with exposure to corresponding media.

The findings of Stewart and Schubert were of particular relevance for the analysis of an alleged causal mechanism between political communication in social media and the outcome of elections. If the placing of subliminal messaging in a TV commercial already affected the attitudes of its recipients, then the exertion of influence through social media in the form of self-marketing and advertising was plausible.

Work by Eyal (2014) and Levy (2020) provided a contextual framework to assess this hypothetical influence on individual behavior associated with social media. Both authors argued how the conception of prominent smartphone apps that are also used in political communication – like Instagram – exploit cognitive behavioral patterns associated with the neurotransmitter dopamine. Additional research on the relationship between dopamine, addiction and cognitive impairments (Sapolsky 1994, Bechara 2005, Wilmer and Chein 2016, Ward et al. 2017) showed, how the extensive usage of smartphones and social media could alter information processing on individual level and hence facilitate susceptibility to digital campaigning or other means of political (self)-marketing.

Regarding the conceptualization and development of political marketing, scholars like Tenscher (1998), Vowe and Wolling (2000) or Holtz-Bacha (2002) highlighted early-on how political advertising continuously has become more professional by adapting commercial advertisement techniques (Falter and Römmele 2002, 49). For the

implementation of sophisticated marketing strategies to the political realm the 2008 presidential campaign of Barack Obama was a "watershed moment", as Joathan and Lilleker put it: "The campaign combined community organization with fundraising across multiple platforms offering a blueprint for the use of the digital environment for political communication (Ceccobelli 2018)." (Joathan and Lilleker 2020, 4)

Authors like Schoen (2014) point out, that the professionalization in political marketing campaigns led to a "de-idelogisation" (Schulz 1998b, 378, cited in Schoen 2014, 674) of election campaigns and a de-valuation of policy-centered campaign-strategies. Instead, personalization strategies would place individual politicians at the center of electoral campaigns. In need of a positive image, the tendency for politicians to be portrayed as private individuals would thereby increase (Schoen 2014, 674).

Work by Muñoz and Towner (2017), Eckerl and Hahn (2018), McGregor (2018) or Steffan (2020) provided insights into the social-media related developments in personalized campaign strategies and political self-marketing. Studies by Filimonov, Russmann and Svensson (2016) and Russmann and Svensson (2016) explored how Instagram was used for political self-marketing to persuade and mobilize voters and how the platform could be researched empirically. Both studies provided additional insights into the strategic rationale behind the usage of social media and Instagram in the context of election campaigns and political marketing.

While these developments have brought conventional marketing and political marketing arguably closer together, the two disciplines still differ structurally in at least three ways.
First, for political advertising campaigns, there exists only one point of sale, that is: the ballot. *Second*, the voter market is highly regulated by the corresponding electoral system. The polity-dimension shapes the nature of political campaigns to an extent unknown to the corporate marketing world. A successful electoral campaign in a country that runs on simple majority rules will follow a different strategy than a successful campaign in a country of relative majority (Donges and Jarren 2017, 150). *Third*, in contrast to corporate marketing activities, electoral campaigns are built on significantly smaller financial budgets. Budget allocation is a central element for the

overall success of any communication campaign: Not only do creative and strategic labor initiate costs, but especially the placing of visuals that constitute the respective campaign. Be it in the form of TV advertisement, out of home advertisement or social media advertising. Media spending on advertorial spaces is arguably one of the biggest cost-factor in any marketing campaign (Edelman and Salsberg 2010).

In view of these circumstances, social media are of particular importance because they provide audience outreach free of charge. In combination with electoral systems that emphasize on individual politicians this creates an incentive for politicians to use social media in order to increase their own awareness among voters.

To summarize: As stated in the beginning of this section, my dissertation is of interdisciplinary nature and yet emphasizes on the field of political communication. I argued that there is a vast and versatile body of literature to be consulted in general. While there exist numerous studies that focus on aggregate developments associated with digitalization in a political communication context, the corresponding research has yet produced only little generally applicable findings (Boulianne 2015, Boulianne 2020).

As this section showed, the political communication literature lacks theoretical and methodological contributions that focus on the individual voter level. Especially with regard to social media based political communication, little is known about its effect on voters. Even though there are scholars who repeatedly highlighted the necessity for corresponding experimental research (Schoen 2014, 684; Boulianne 2015, 534; Dimitrova and Mathes 2018, 339), this methodological path has not yet gained traction. Moreover, this section indicated how the boundaries between political science, political communication, marketing science and related research areas dilute under the influence of *digital* political communication.

There consequently are numerous research gaps associated with the analysis of digital political communication and voting behavior on individual level. In the following chapter I will layout which research gap I aim to contribute to.

1.1 Research gap

For Schulz (2008), the academic preoccupation with political communication often has its origins in changes in the media. Schulz distinguishes between normative connoted views, which critically examine modernization phenomena of media-driven politics, and positivist approaches, which look at the relationship between modernization, globalization and political commitment on the side of the citizens. It is important to point out that political communication is dynamically dependent on technological changes like hardly any other form of politics. It is a historical fact that every new media and communicative mass technology has also been used for political purposes. Nonetheless, it is clear that the way in which mass media changes political processes and structures has only just begun to be systematically investigated (Schulz 2008, 15). This holds especially true for the analysis of digital communicative means and campaigning. What became evident during the process of literature assessment was that the 'conventional' concept of political advertisement and campaigning arguably ceased to exist under the influence of digital or hybrid media systems. Generally speaking, advertisement in politics was first and foremost advertisement in the context of elections and electoral campaigns (Jarren and Dongers 2006, 227). Election-campaigns combined all organized and planned communicative actions of a political party (Schmitt-Beck 2002, 22). Podschuweit (2016) argues to categorize political campaigns in four sub-categories.

The classic differentiation between media, advertisement and mobilization-campaigns (Radunski 1980, 44) would be accompanied by a fourth sub-category, namely the Internet campaign (Podschuweit 2016, 636).

I argue that the theoretical differentiation between analogue and digital i.e. internet-campaigns does not mirror what is actually happening in political campaigning nowadays. There is no clear border between the offline and the online world anymore. Campaign rallies are announced on out-of-home media and on digital channels simultaneously. 'Private' social media channels of top tier politicians create buzz in their online-communities prior to rallies or other physical manifestations of politics.

Partisans gather around signature hashtags on Twitter that prolong the debates from the analogue to the digital world. Ever more often, journalists engage in those digital debates themselves which sometimes transfers a topic from the digital-debate into the nation-wide evening news. These processes can be witnessed on different scales on a daily basis. The interconnection of offline and online, of varying media-types and real-time reporting on almost any (political) event shapes the perception of politics. Political communication and marketing are therefore subject to completely different conditions than this was the case, say, 15 years ago.

Social media arguably had the deepest, most profound impact on the way how political campaigns and advertisement are created and how political actors engage and interact with the electorate. Take Facebook as a practical example: The total circulation of all German daily newspapers has shrunk in the past ten years from over 19,4 million to 12,5 million today (Statista 2020). Facebook, in contrast, has 32 million users in Germany of which 22 million use Facebook on a daily basis (Heise 2020). One could argue that Facebook alone has the same publishing power as all daily newspapers in Germany combined.

At the same time, the *relevance* of social media platforms is still subject to discussion within the literature. While Sarcinelli (2011) attributes little relevance to social networking platforms because of their private nature, Jungherr (2020) sees social network platforms as an important element in the dissemination of information in the context of opinion-formation and behavior (Jungherr 2020, 188). "A current challenge for researchers is to realistically assess and conceptualize the political role of social media platforms" as Jungherr (2020, 199) puts it.

The challenge described by Jungherr identifies the research gap. There is no consent about the causes and effects associated with the usage of social media in the political realm. To my understanding, there are two reasons why research so far has had its difficulties in achieving common ground on this topic.

First, the speed by which political communication changes has increased dramatically over the advent of web 2.0 and social media platforms. Almost anything related to digital political communication didn't even exist 15 years ago. This disruptive force

makes it hard to assess in depth what is actually happening on the platforms and how the observed behavioral patterns affect the political realm.

Second, the existing research almost exclusively focused on researching the platforms instead of researching the users that constitute the platforms. Social media is a form of mass-communication that is driven by the individuals that constitute the respective network. It is therefore necessary to analyze how individuals perceive political information in this digital environment in order to assess how digitization affects the political realm. Against that background, the analysis of platforms won't be sufficient.

The research gap within the present body of literature materializes in the lack of concepts and analyses that assess how digital political communication affects the individual in terms of information processing, political evaluations and decision-making.

The usage of aggregate social media data within social sciences has the undisputed advantage that it provides seemingly endless streams of information at little to no expense. However, given that the researcher can never know what drove the observed user-behavior in social media on individual level, a causal relationship cannot be established. It goes without saying that there might be cases where correlation is sufficient to isolate mechanisms between X and Y. Especially in view of *big data* scholars have made arguments for the alleged "end of theory", as Anderson (2008) puts it.
However, it stands to question if this line of thinking is feasible for the analysis of social phenomena. While it is possible to obtain huge data sets on social media activity, the data itself remains observational. Without a sound understanding of how digital political communication affects the individual, political science won't be able to keep up with the developments that will shape electoral politics in the nearer future. Against this background, it is necessary to learn more about the effects of modern mass communication in the political context on the individual voter level. My dissertation is intended to contribute to this.

2. The Papers‘ Contribution to the Literature

My dissertation consists of three individual papers that aim to contribute to analyzing the relationship between social media communication, information processing and decision-making in three different ways. Each of the three papers contributes to the analysis of how individuals process politically relevant information in a digital media environment.

First, I contribute to the understanding how increased social media communication could affect the individual perception of politics and how this relates to the process of decision-making. *Second*, I assess on the individual level, how the increasing share of digital communication affects the evaluation of corresponding political information. In a *final* step, I assess how the increasing volume of political self-marketing facilitates political support. By combining experimental findings with additional social media and survey data I present a proof-of-concept for the alleged effect on individual behavior through social media communication. I will now outline each of the three papers' individual research focus and their corresponding contribution to the literature.

2.1 Political Influencers? Theoretical and analytical contributions to the analysis of Instagram as a means for political communication

The first paper of my dissertation had some kind of a mixed agenda to it. Originating from the initial interest in how politicians use Instagram for their electoral campaigns, the paper turned out to lay the foundation for the dissertations' theoretical framework. Generally speaking, the paper contributed to the literature by approaching the hypothetical relationship between the strategic use of social media in political campaigns and the outcome of elections at the example of Instagram. Choosing Instagram as the analytical focal point had three reasons:

First, research on Instagram itself was a research gap on its own terms. When I started working on my dissertation in 2017, little had been published on the political usage of Instagram. *Second*, as 2017 saw German Federal Elections, Instagram started to gain attention and traction by parties and politicians. For a researcher interested in the usage of online-tools and their effect on the electorate, this provided a rare opportunity to

scientifically observe the growing relevance of a digital platform within political communication. *Third*, as Instagram lives of visual content, the analysis of politicians on Instagram promised insights regarding how politicians want to be seen. As the creation of a distinct image is one of the central aspects for the political leverage of a politician, Instagram provided a new perspective into the creation of those images.
Based on Kahneman's theory of fast and slow thinking, the example of Instagram was used to illustrate how the continuous receiving of visual stimuli could affect the process of decision-making prior to elections on the voter-level. Building on dual-system-theory, my first paper provided theoretical answers to the question why, at all, an individual should be susceptible to manipulation via social media in the first place. Given that individuals have only limited cognitive capacities to handle their everyday lives, heuristics play an integral part in decision-making. The presence of an Instagram-account should favor heuristic decision-making as the ongoing interaction between an individual and an Instagram profile creates a cognitive anchor. In decision-making situations, individuals would recur to this anchor which makes the corresponding decision less effortful what hence increases the likelihood of this outcome.

In order to support this theoretical argument, I set-up an Instagram monitoring that scraped data from 12 top-tier political profiles during the final weeks before the German Federal Election of 2017. The gathered data was then used to test hypotheses on user interaction and political self-marketing on Instagram. The sample consisted of the candidates, spokespersons or general secretaries of the parties most likely to surpass the 5% threshold in German Federal Elections. I assumed that the observed personnel would showcase similar yet different usage patterns which promised interesting insights into how politicians use Instagram in electoral campaigns. The codebook for analyzing the Instagram visuals included visual cues of political messaging as well as performance indicators like engagement rate and profile growth. The results showed what triggered interactions on Instagram and what drove growth. The analysis proved challenging given that no observational data on the individual level was present. The paper used observational data only and linked the usage of Instagram to electoral success via a regional focus, and via share of first-votes.

Additional hypotheses asked for image composition and messaging in relationship to engagement rate and growth. The results regarding a hypothetical effect on individual level painted an uncertain picture. The biggest problem was that the analysis heavily relied on hypothetical assumptions regarding the individual voter level. These assumptions were plausible on the one hand, but on the other hand beyond any empirical validity or observation. While the presented results were consistent with the theoretical modelling, they suffered from a too broad research-focus in the onset and methodological hurdles associated with the statistical analysis.

In retrospect, one of the key findings of the paper came from a rather random observation in the data: The daily measurement of profile-growth showed, how political Instagram profiles grew significantly bigger in vicinity to events that generated significant media exposure. This implied how Instagram was used on the individual level in relation to other media types. Apparently, the presence of a politician on TV led more individuals to search for the corresponding politicians Instagram profile. While this finding was rather a side note in the first paper, it proved of significant relevance for the entire dissertation later on.

Even though I was able to present a theoretical argument that created a hypothetical link between social media consumption and voting behavior, the gathered data of the first paper was nowhere sufficient to make an actual point regarding a causal relationship. It was those hurdles that led to my second paper, where I would take a significantly different approach on the matter in terms of theory and methodology.

2.2. What if we are all just trained monkeys? A neurological approach to analyzing individual decision-making in a political context.

The second paper broadened the scope of the research question. I took a step back and tried to look at the bigger context of social media usage in the political realm. What stuck out was the observation that the vast majority of digital content was consumed via smartphone. This got me thinking on how the usage intensity of the smartphone could affect the individual cognitively. A subsequent string of literature from the fields of neuroscience and behavioral psychology provided for a theoretical argument that linked heavy smartphone usage and corresponding cognitive impairments to

individual decision-making. In order to obtain individual user data, I embraced an experimental research design. While there were studies in the realm of political communication that obtained individual user data through data-donation (Ohme 2019), causality-claims are subject to possible endogeneity problems or other factors one cannot control for in an open environment. Consequently, creating a research-design that analyzed individual behavior in the context of digital political communication in a controlled environment appeared feasible.

The corresponding research-question asked for the possibility of affecting and arguably changing human decision-making in a political context through the means of digital media. The results from a laboratory experiment showed, how participants rated a fictitious candidate in a mock-up electoral campaign more charismatic, more accessible, more reliable and more competent, when the information, which built the foundation for the assessment, was conveyed via Instagram on the smartphone. These results contribute to the understanding of how individuals assess and evaluate politically relevant information. As outlined by Jungherr (2020), one of the biggest methodological and theoretical hurdles for the analysis of politics and social networking platforms is the fragmentation of the media-system that goes along with platformization. The results of my second paper mitigate these hurdles as they show how researching the individual level can contribute to understanding observations on the aggregate level. Apparently, the intake of politically relevant information via digital and social media does affect the individual notion of politics. The questions thus remained, whether these results were transferable to the outside world and what these findings ultimately imply for the decision-making process associated with voting.

2.3 Self-Marketing and political support. Evidence from social media, experimental, and survey-data.

The findings in the laboratory ultimately showed that political self-marketing made a difference: Content conceived via Instagram was rated better than the same information conveyed via traditional media. The third paper was initially set-up to build on the findings from the laboratory by using a redefined research design and a

bigger sample size. Unfortunately, the outbreak of the Corona-virus in early 2020 made it impossible to proceed with this original plan. In order to move forward, I set-up an alternative research design that aimed at transferring the laboratory findings onto a representative data set. This led to two follow-up questions: *First*, if these results are generalizable, *second,* what does political self-marketing imply for the process of decision-making.

The paper presented additional evidence from the literature on heuristics and decision-making in a political context. Experimental studies from Todorov et al. (2005), Antonakis and Dalgas (2009) showed how individuals chose politicians only from the look of their faces when no additional information was present to take this decision. These findings implied that decision-heuristics could play a vital part in the information selection process on the individual level for these voters, that express little to now interest in politics, but who vote anyway.

In addition, the paper transferred previous findings regarding the efficacy of political self-marketing to the realm of applied public relations. Building on contributions from Olins (2003) and Aaker (2012) the paper contributes to understanding the incentive for politicians to create a personal brand and to convey and nurture the associated image via social media.

The empirical evidence presented in the paper was threefold. First, I presented additional data in support for the previous observation of social media as a medium for follow-up communication. By combining social media growth data with Google search index data, I showed, how increased search volume positively affected profile growth of the accounts in question.

In addition, I presented further evidence from a quasi-experiment that showed how the presence of an Instagram-account mitigated a rating backlash from negative press. Last but not least, I transferred the findings from my laboratory experiment into a representative data set for the German electorate. Results showed that I was able to reproduce the findings from the laboratory in the survey data: Individuals who used Instagram rated those politicians more favorable, that also used Instagram. The paper therefore combined different data sources on information processing and the valuation

of politics in order to merge the peculiarities of political campaigns with contemporary marketing-frameworks in the context of digital channels and user guidance.
By applying theoretical concepts from marketing science to political communications, the paper presented a theoretical model for analyzing individual information intake and processing in a digital environment. The presented observational, experimental and survey-data served as a proof of concept for the alleged influence on individual decision-making that derives from political self-marketing.

PART II
THE INDIVIDUAL PAPERS

3 Political Influencers? Theoretical and Analytical Contributions to the Analysis of Instagram as a Means for Political Communication

3.1 Introduction

Digital communication significantly affected the 2017 German Federal Election. When compared to the 2013 election, it is evident how the entire spectrum of political players increased their efforts in terms of social media, data-driven campaigning and in the battle for social-metrics of likes, shares, views and alike (Voigt and Clemens 2017; Kruschinski 2017; Jungherr 2017; Ovens 2017; Wilke 2017). While there is literature on how social media and digital communication might interfere with political decision making and the act of voting, research so far overwhelmingly has focused on Facebook and Twitter. Both social networks have been studied from different perspectives within different contexts for over a decade (Russmann and Svennsson 2016).

Instagram, as another prominent social network, has hardly been researched by political science scholars. In contrast to marketing and communications science, there are only few studies that focus on Instagram in a political context (Mahoney, Fehltwell, Ajuruchi and Lawson 2016, 3342). This lack of political science contributions has – among others – three reasons:

First, Instagram is a relatively new tool for political communications. The app was launched in 2010. Its first political use can arguably be attributed to the Obama/Biden campaign of 2012. The campaign team then included Instagram into their digital communications repertoire by creating a personalized profile for Barack Obama on the platform (Wortham 2012). However, outside of U.S. politics, political actors have only started to embrace Instagram as a means of communication and marketing.

Second, researchers turning to Instagram analysis face technical hurdles. In contrast to Twitter, Instagram's application programming interface (API) has never been entirely public and consequently there has only been limited legal access to Instagram data.

After a near-total API cut-off, which followed in the wake of the Cambridge Analytica data leek in April 2018, data sources are limited or not available at all. This absence of a reliable data access hinders quantitative research and analysis of Instagram.

A *third* and more profound reason for the lack of political science contributions in the field of Instagram analysis can be seen in the difficulty of theoretic embedment. Especially when striving to identify causal mechanisms in the context of electoral competition, voter turnout, and campaign efficiency, the current research basis is small and hardly exceeds beyond descriptive Instagram usage studies (see chapter 3.3 for literature review).

There are, however, profound reasons for addressing the usage of Instagram in political communications and electoral competition. Compared to Twitter and Facebook, Instagram has a decisive advantage for deploying strategic political messages, namely the absence of external inference. This enables political actors to stay in control of their message and the associated frame. In combination with the nature of Instagram as a platform emphasizing on visual content, this lends Instagram significant persuasive potential.

Instagram allows politicians to present themselves beyond the pure political message to an (interested) audience and thus enables political actors to shape a marketing image in a potentially apolitical environment. In the broader context of digital campaigning, Instagram hence ads to the rationale of strategic outreach to different target audiences within the electorate through specifically tailored content. As ever more politicians and political actors embrace the platform, scientific assessment of functioning principles and their effects of voter-perception appear appropriate. In order to contribute to Instagram related research in political science, I will do three things:

First, I will create a theoretical argument for analyzing how the exponential growth in media-consumption has altered the way political messages are conceived and how Instagram could affect voters' perception of candidates and politics. *Second*, I will present a method for harvesting Instagram data that enables quantitative research without API access. *Third*, I will use the data to test hypotheses that analyze Instagram usage patterns by political actors and their potential effects on voters. As the obtained

data is observational in nature and hence does not provide any data on the individual user-level, the presented results pose as an intermediary. The empirical analysis presented is therefore limited to a heuristic justification in favor of a causal relationship between Instagram usage by politicians, and a positive effect on voters' conception of the corresponding politician.

This study consequently lends its theoretical focus on Instagram's effect on information-processing while providing explorative insights into how political actors use the channel during electoral campaigns. At the example of the German Federal Election of 2017 I will show how politicians use Instagram in their electoral campaigns, how user engagement correlates with different posting behaviors, and what drives channel growth. Regarding Instagram's effect on the individual voter, I will argue that under the influence of increasing mediazation the individual share of emotional, subjective and affective decisions rises. This is due to a possible overextension of associated cognitive systems by the amount of available information. My argument builds on Kahneman's (2011) concept of fast and slow thinking and hence links decision-making theory to the process of political information-seeking. By combining a theoretical foundation for explaining the effect of Instagram on the formation of a political opinion with the analysis of observational user data I will answer the following research question: *How does Instagram affect users' perception of candidates and politics and how does this happen?*

3.2 Theory: Affective decision-making and political campaigns

In recent years, the number of media stimuli an individual receives on a daily basis has grown substantially. Social media is not only increasing the total number of messages and exposing recipients to an unprecedented amount of information but it bundles additional cognitive capabilities through the algorithmic presentation of contents selected in accordance to individual user preferences. As Lorenz-Spreen et al. (2020) put it, the "current online ecosystem has been designed predominantly to capture user attention rather than to promote deliberate cognition and autonomous choice" (ibid. 2020, 1102). It hence stands to question how these developments affect the cognitive processes associated with the formation of a political opinion. Robertson (2018) argues, that social media and the internet could "*nudge aggregate affective*

attachments of voters between competing candidates in ways and with effects one would not have expected or predicted without taking closer account of their effect acting on the emotional foundations of voter judgements" (Robertson 2018, 92). Put differently: One could argue that social media triggers emotionality and thereby undermines the share of rational decision-making within the decision-making process prior to voting.

I propose that the increasing share of online information consumption and digital media could affect individual information processing and thereby the formation of a political opinion. Furthermore, I propose that Instagram particularly excels at proving for heuristic decision-making.

The key question that underlies this proposal is how individuals take decision and how this process could be affected by digital communications and social media. Kahneman (2011) provides a sound theoretical approach to this question by conceptualizing human cognition and decision-making as the outcome of two cognitive systems that control decision-making processes.

At the root of Kahneman's concept lies the theoretical model of fast and slow thinking, which describes a duality in human cognition. The systematic that lies behind fast and slow thinking can be understood as a "metaphor of two agents, called System 1 (S1) and System 2 (S2), which respectively produce […] thought as if they were traits and dispositions of two characters in your mind" (Kahneman 2011, 3). System 1 operates intuitively and quickly, with little or no effort and no sense of voluntary control. System 2 on the other hand allocates attention to the effortful mental activities that demand it, including complex computations and deliberate thinking.

The associative memory of system 1 constantly constructs a "coherent interpretation of what is going on in our world at any instant" (Kahneman 2011, 13) and thus depicts an entirely subjective reference point. System 1 operations are effortless and yet limited in terms of logical or rational choices that follow a process of weighted cognitive computations. "*System 2 is the only one that can follow rules, compare objects on several attributes, and make deliberate choices between options. The automatic System 1 does not have these capabilities. System 1 detects simple relations […] and excels at integrating information about one thing, but it does not deal with*

multiple distinct topics at once, nor is it adept at using purely statistical information" (Kahneman 2011, 36). In other words, System 1 is constantly making decisions based on heuristics that derive from subjective associations, following a rule Kahneman calls "What-You-See-Is-All-There-Is" (WYSIATI) (ibid., 85). This leads to decision-making patterns that prefer known/intuitive over unknown/counterintuitive solutions to decision-making-problems. System 2 holds a gatekeeper-function and only jumps into action, either if System 1 does not come up with a solution or if System 2 presumes an error (Braun and Benz 2015, 49).

Kahneman refers to System 2 as the "lazy controller" that predominantly monitors Systen 1and has limited capacity. There is no synergy between the two systems. Yet, as Kahneman puts it, the distribution of tasks between System 1 and System 2 is highly effective as it follows a strategy of minimizing effort while maximizing outcomes. Consequently, the root for decision making lies in a subjective, associative process that searches for associations that fit the respective decision problem. The decision-making process following Kahneman (2011) is depicted in Figure 1:

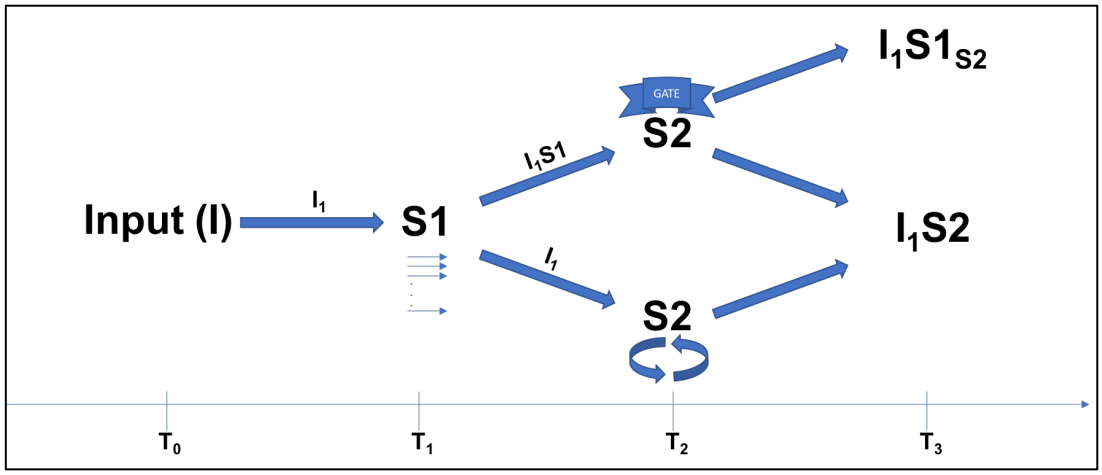


Figure 1: Decision making as of Kahneman 2011

The decision-making process can be described in the following way: A stimulus/input (I_1) evokes a cognitive problem-solving process. System 1 receives the input (T_1) and induces an associative process to search for known associations that match the input. If System 1 (S1) succeeds, which according to Kahneman it does most of the time, the solution (I_1S1) is forwarded to System 2. If System 1 detects a problem that it cannot

answer, it forwards the task without a solution (I_1) to System 2. System 2 hence acts as a gatekeeper (T_2). If the System 1 solution complies with System 2 preferences, a final solution (I_1S1_{S2}) is brought forward and put into action (T_3). If System 2 overrules the solution brought about by System 1, it induces an iterative process of deliberate thinking to solve the task. The solution (I_1S_2) is then brought into sequence, the cognitive task translates into action. Kahneman (2011) stresses that System 2 springing into action is principally resource-consuming and exhausting and that it requires attention and effort. This is why human cognition tends to minimize System 2-actions without compromising the quality of cognitive outcomes.

Now, how does this scheme translate to the formation of a political opinion and ultimately voting? How do individuals take voting decisions and what does the corresponding decision-making process look like? Do individuals rely on their intuition and make voting a System 1-operation? Or do they invest mindfulness and effort into the decision by deliberately thinking about the outcome of their voting-intention (Arzheimer and Schmitt 2005, 375).

These questions, of course, cannot be answered in general. However, the outlined behavioral theory by Kahneman creates a theoretic foundation for the modelling and analysis of social media's influence on the individual decision-making process: If the formation of a political preference is subject to the described cognitive process, then social media in general, and Instagram in particular adds visual cues to the associative memory that guides System-1 through its decision-making procedure. This would favor those politicians who excel at providing associative anchors to the electorate that help voters in the decision-making process that is voting. Put differently, the share of affective, intuition-based decisions increases under the influence of increasing social media consumption. There are two reasons for that:

First, as System 2 has limited capacities, the marginal costs for System 2 operations increase with an increasing number of stimuli and decision-problems. Consequently, and according to the rule of minimizing efforts, the relative share of System 2 actions decreases and the total number of affective, subjective System 1 (I_1S1_{S2}) decisions increases.

Second, if one envisions the handling of information by System 1 as a working-memory on a computer (RAM), the strategic placing of associations increases the

probability that System 1 solves the cognitive task without further ado by System 2. Following this argument, it is plausible and possible, that individuals who spend significant time on social media alter their way of complex decision-making in favor of subjective heuristics. Mayerl and Faas (2018) show that a corresponding structural deficit in cognitive decision making can be impacted by media outreach and political campaigns. By analyzing cognitive accessibility of political judgments within campaign dynamics through proxy-measures for cognitive information processing, they reach the conclusion that "*voting intentions and attitude towards candidates […] become significantly more accessible during campaigns […]. In sum, there is empirical evidence that short-term judgments such as voting intentions and attitudes towards candidates are – on an aggregate level – more temporarily accessible […].*" (Mayerl and Faas 2018, 1589)

These findings indicate, that campaign-mechanisms could draw political information into the working memory of individuals. Consequently, stimuli within campaigns that deliberately create System 1 associations could increase the likelihood of affective decision-making.

3.2.1 Cognitive ease and social media

Cognitive ease is a concept that describes a mental state in which information can effortlessly be processed. Kahneman names four preconditions for the effect of cognitive ease to set in: repeated experiences, clear display, primed ideas and good mood. The induced cognitive ease results in feelings that are familiar, true, good and effortless (Kahneman 2011, 60). Cognitive strain, in contrast, "is affected by both the current level of effort and the presence of unmet demands" (ibid., 59) and hence binds cognitive resources. Both cognitive ease and cognitive strain have significant implications for the way how individuals evaluate information and ultimately take decisions. Take "repeated experiences" as an example: "People who were repeatedly exposed to the phrase '*the body temperature of a chicken*' were more likely to accept as true the statement that '*the body temperature of a chicken is 144*°' (or any other arbitrary number). The familiarity of one phrase in the statement sufficed to make the whole statement feel familiar, and therefore true." (Kahneman 2011, 62) Information

or stimuli evoking cognitive ease result in fluent yet subjective cognitive processing of the related input. The less an individual feels cognitively strained, the bigger the probability of cognitive ease taking control of the information-processing and decision-making. Or as Kahneman puts it: "If you cannot remember the source of a statement, and have no way to relate it to other things you know, you have no option but to go with the sense of cognitive ease." (Kahneman 2011, 62)
I argue that social media favors corresponding associative and behavioral patterns. The specific functionality and aesthetics of Instagram arguably foster cognitive ease due to the focus on visuals. It thus stands to question how the increasing share of subjective associations affects decision-making. Prospect Theory provides answers.

3.2.2 Prospect theory

The prospect theory is a concept by economists Daniel Kahneman and Amor Tversky that explains structural deficits in human behavior over two factors: The non-linear evaluation of gains and losses and the incapability to accurately weigh probabilities. As a result, individuals base their decisions on a subjective reference point from where the outcome of the corresponding decision is evaluated. This reference point is not stable and susceptible to external interference through communicative techniques such as framing. Kahneman and Tversky (1992) argue that by the method of framing, an individuals' behavior can easily be influenced as it gives the same prospect to people but words it in a way that suggests a different reference point. I will give a short example to illustrate the relevance of the concept for this paper. Imagine taking the decision over a non-necessary surgery. Before taking the initial decision, your doctor informs you about the risks associated with the surgery. Both statements below issue the same information:

1) 'The success-rate of the surgery lies at 95%."
2) 'There is a 5% chance that severe complications occur during the surgery.'

However, the statements differ regarding the framing of the risks associated with the surgery. While the first statement emphasizes on the positive outcome, the latter one

emphasizes on the negative one. While the overall probability does not change, the second statement will have a rather discouraging effect on the individual compared to the encouraging effect from the first one. Put differently: The first statement is framed to motivate people while the latter one will discourage behavior. Prospect theory hence "suggests that individuals respond differently to factually equivalent information depending on whether it is framed in terms of costs (loss-framed) or benefits", as Latimer et al. (2008) put it (ibd., 660). According to Kahneman and Tversky, people are more deterred by losses than they are incentivized by gains and tend to misinterpret the probability of rare events.

As a consequence, the framing of the expected outcome, the *prospect* if you will, explains much of the observed behavior in corresponding decision-making situations. The concept of the reference point hence illustrates why social media communication could affect and alter individual decision-making at all:

Political communication in social media creates a direct link between politicians and the electorate. Via this link political actors can affect their followers' reference points by making use of framing and other persuasive techniques. In contrast to other popular social networks, Instagram is furthermore not a platform on which vivid political discussions, hate speech or related phenomena take place (Eckerl and Hahn 2018, 246). Consequently, the channel owner i.e. the sender who uploads content, is in almost absolute control of the frame set by his messaging.

This is unique about Instagram and thus gives the platform a potentially higher influence on information-processing and deriving decisions than Facebook and Twitter. Consequently, if the share of input, voters perceive via Instagram rises, the approval of related content could increase given the lack of external disturbance through re-framing.

The described process could affect the decision-making prior to elections in favor of the profile owner: The direct link between the profile owner and the electorate, in absence of external influences, increases the number of associative reference points or cognitive landmarks.

The hypothetically vote-changing effect is created through ongoing communication on Instagram prior to an election. On election day, the decisive question thus is whether the voter's working memory is sufficiently filled with associations in order to

either mobilize or persuade. The more associations are available, the higher the probability that the outcome is driven by emotional, affective thinking. With Instagram as an additional channel brought into the mix of campaign strategies, the individual voters' reference point consequently becomes exposed to persuasive techniques for affecting the formation of voting intentions.

3.3 State of research

For social sciences in general, and political science in particular, research on Instagram is still at a very early stage. As outlined by Mahoney et al. (2016) there is only a small strand of literature dedicated to analyzing the use of Instagram in a political context: "Some embryonic work has also begun to appear which is exploring Instagram and its role in politics and democracy […]; much of this latter work so far however has only considered Instagram as part of the broader impact of social media in such contexts […]." (Mahoney et al. 2016, 3342) Contributions by Sylvester (2012) or Glantz (2013) focus on the practical implementation of Instagram as parts of political campaigns. Sylvester (2012) detects a benefit from using Instagram through the possibility of freeriding buzzing communities and the potential (digital) endorsement by influential personalities or celebrities. According to Glantz (2013), Instagram provides "politicians with a concise, direct method of sharing their message and enhancing their image" (Glantz 2013, 695, cited in Liebhart and Bernhardt 2017, 17) that would help citizens feel personally connected to the respective politicians.

Performing a comprehensive qualitative analysis of political user-generated content on Instagram in the context of two major political events in the UK (2014 Scottish independence referendum, 2015 UK general election), Mahoney et al. show, that users on Instagram embrace the channel for political self-expression on a significant scale: "[…] people are using the platform to craft their political selves in the same way that they craft their everyday online personas - through the sharing of everyday images in the context of political debate, through to the sharing of political manifestos, satirical imagery and appropriating symbols from film and television." (Mahoney et al. 2016, 3348) These findings are helpful for the general understanding of both the political

relevance of Instagram and for the further analysis how political actors use Instagram within their campaigns.

First, the findings indicate that users are open towards political topics within the content-sphere of the platform. By showing how Instagram-users engaged in political discourse before political events, it is highly likely that the platform is suitable for political communication and political engagement.

Second, the observation that the crafting of political selves resembles general self-expression indicates that political actors could espouse this behavior. The already weak boundary between the private and political sphere in social media would thereby dilute even further. A study on Instagram-based marketing during the 2016 U.S. presidential primaries by Muñoz and Towner (2017) shows corresponding findings regarding the adaptation of a certain aesthetic: “Results indicate that candidates most frequently employ the ideal candidate frame in their images, which also garnered the highest number of user likes and comments” (Muñoz and Towner 2017, 290). Analysing Instagram-usage in the successful campaign of Alexander van der Bellen for the Austrian 2016 Presidential Election, Liebhart and Bernhardt (2017) find how "politician(s) make use of a digital platform in order to project and manage desired images." (Liebhart and Bernhardt 2017, 15)

In a study on how German political parties used Instagram during the 2017 Federal Election, Voigt and Seidenglanz (2017) argue that implementing Instagram into the overall campaign-strategy requires paying attention to aesthetic details in order to appropriately address the channel-specific audience. If done properly, the channel enables parties to approach audiences who wouldn’t engage with political content otherwise. The authors put into question, however, if Instagram encourages parties to produce rather unpolitical content in order to avoid of scaring off unpolitical users (Voigt and Seidenglanz 2017, 52). Surveying the Instagram usage of selected politicians, Eckerl and Hahn (2018) show that content tailored to the aesthetic of Instagram received significantly higher engagement rates than their peers.

To summarize, Instagram’s specific appearance of visual-driven communication in combination with the absence of frame-compromising externalities could favour cognitive ease. By inducing cognitive ease, Instagram could excel at the placing of cognitive anchors on individual level. This could affect the formation of a political

opinion and increase the likelihood of affective decision-making in terms of voting. Before turning your attention to the hypotheses, please take note of the disclaimer about data material and corresponding causality-constraints. The following hypotheses aim to connect the presented theoretical arguments with the gathered Instagram data. Nonetheless, the presented hypotheses, models and results can by their nature only depict a heuristic justification to a presumed causal relationship. The data at hand cannot provide any evidence for this causality as it does not contain individual voter data.

3.4 Hypotheses

The following hypotheses cover three aspects of Instagram-usage in a political context. *First*, **H1** and **H2** assess a potential relationship between Instagram usage during political campaigns and voter behavior. *Second*, **H3**, **H4** and **H5** assess Instagram usage patterns of top-tier politicians to gain a better understanding of what drives user behavior. **H6**, *at last*, is set-up to assess what drives profile growth. While **H1-H4** follow the literature outlined above, **H5** and **H6** have no direct link to the literature presented in this paper. I nevertheless included **H5 and H6** in order to explore for patterns in the data set that could help explain profile growth. I will now outline the hypotheses in detail. With regard to the reference point as outlined by Kahneman and Tversky (1992) I argued that the shaping of political opinions is susceptible to framing. Instagram is suitable for framing given the lack of external disturbance and its general appearance. This could re-enforce partisanship and increase mobilization. Therefore, I hypothesize (**H1**) that turnout increases in those constituencies where the share of active Instagram users among elected politicians is higher. Furthermore, as a conditional argument, I hypothesize (**H2**) that politicians who embraced Instagram during their election campaign receive a higher share in first-votes opposing those who did not use Instagram. Muñoz and Towner (2017) and Voigt et al. (2017) showed that candidates most frequently employ the ideal candidate frame in their images. Instagram enables its users to create an idealized depiction of themselves through the usage of filters and other technological means that enhance the quality of the uploaded content. As a direct consequence, Instagram is used by influencers and individuals of

public interest to create and enhance a personal brand. If politicians make use of these techniques they can create a different image of themselves which stands in contrast to the aesthetic of political news coverage and related conventional points of contact between politicians and voters. Against this background I hypothesize (**H3**) that those profiles which show signs of deliberate self-presentation generate higher engagement rates by their followers. Furthermore, and in accordance with the findings of Eckerl and Hahn (2018), I hypothesize (**H4**) that using the multi-media assets within the Instagram environment increases the corresponding posts' engagement rate. Assuming that the group of users that follows a political profile consists to a certain degree of (potential) partisans I hypothesize (**H5**) that political content, depicted through the appearance of symbols, explicit or implicit references to parties, politicians, or through direct political messages, leads to increased engagement among users. In order to get a hold on what drives growth on Instagram, I hypothesize (**H6**) that profiles with higher regular output experience bigger growth. For the sake of clarity, **table 1** summarizes the hypotheses.

Table 1: Hypotheses used in the analysis	
H1	*Turnout increased in those constituencies where the share of active Instagram users among elected politicians is higher.*
H2	*Politicians who embraced Instagram during their election campaign received a higher share in first-votes opposing those who did not use Instagram.*
H3	*Profiles that show signs of deliberate self-presentation generate higher engagement rates.*
H4	*Using multi-media tools available in the Instagram app (video, series of images, collages) increases the corresponding posts' engagement rate.*
H5	*Political content increases the engagement due to high share of partisans among followers.*
H6	*Profiles with higher regular output experience bigger growth.*

3.5 Data and Method

The dataset used in the analysis contains daily observational data of eleven top-tier politicians during the last weeks before the German Federal Election of 2017. The following section briefly presents how I scraped the data without API-access, which profiles I included in the analysis, and which variables I generated from the data.

Building on work by Filimonov, Russmann and Svensson (2016) and Russmann and Svensson (2017) I set up a scheme to scrape data from Instagram profiles by hand during the final weeks of the 2017 German Federal Election. I created a sample consisting of the Instagram accounts of the candidates, general secretaries or spokespersons of the parties most likely to being elected into parliament. For each politician I scraped more than 20 data points depicting the nature of the respective Instagram posts by hand every 24 hours. Data collection took place between the 3rd of August and election day on September 24th, 2017.

The sample was selected according to the respective internal organizational structures of the parties competing for parliament and manually coded daily at the same time in the same order. I assumed, that the analyzed personnel would show similar usage of Instagram given that they all held comparable positions and were addressing their followers in the same context, i.e. the upcoming election. The following politicians were monitored:

- [Dr. Angela Merkel, top candidate CDU, @bundeskanzlerin]
- Martin Schulz, top candidate SPD, @martinschulzspd
- Joachim Herrmann, top candidate CSU, @joachim.herrmann.csu
- Katrin Göring-Eckardt, top candidate Greens, @goeringeckardt
- Cem Özdemir, top candidate Greens, @cem.oezdemir
- Christian Lindner, top candidate FDP, @christianlindner
- Dr. Alice Weidel, top candidate AfD, @alice.weidel
- Dr. Peter Tauber, secretary general CDU, @petertauber
- Andreas Scheuer, secretary general CSU, @andreas.scheuer
- Hubertus Heil, secretary general SPD, @hubertus_heil
- Nicola Beer, secretary general FDP, @nicola_beer
- Beatrix von Storch, deputy speaker AfD, @beatrix.von.storch

The party ‘Die Linke’ thereby fell through the cracks because neither the top-candidates (Sahra Wagenknecht and Dietmar Bartsch), nor any speaker or general secretary personally used Instagram as of August 2017.
A few remarks on the profile of Dr. Angela Merkel: Ms. Merkel was top-candidate of the CDU and office-holding during the election of 2017. As Ms. Merkel does not use Instagram on a personal or non-governmental basis, the existing account @Bundeskanzlerin did not qualify for further analysis: @Bundeskanzlerin is a governmental account that accompanies the federal chancellor-office. As a consequence, the account is prohibited to showcase or advertise any party-related content. However, I still scraped the data to see how the profile grew under the influence of intensified media coverage prior to the election.
The monitoring itself consisted of the following variables: First, a series of basic information on the posting habits and performance of the posts was scraped [Variable name in parentheses]:

- Numeration of posts per day, i.e. output level [nr]
- Amount of likes of the post [likes]
- Amount of comments below the post [comments]

Instagram offers network effects, which enable users to explore related content across profiles through the usage of hashtags. In addition, users can tag other users on their content. To find out how politicians use these features, the following variables were added to the data set:

- Number of hashtags used [n#]
- Number of tagged accounts [nt]

In order to assess if politicians integrate Instagram into their general political campaign mix, the posts were scanned for corresponding references. The following variables are dummies that denote 1 if the respective format applies:

- *Is there any relation to another politician?* This variable denotes 1 if a reference is made in the direction of another politician. [pol]
- *Is there a relation to the party?* This variable denotes 1 if a visual reference is made in the direction of the respective politicians' party. [party]
- *Does the post issue a political statement?* This variable denotes 1 if a statement – both visually and in the description of the post – is made. [pol_msg]

In order to capture the media type of the posts, a series of dummy-variables was integrated into the data set, denoting 1 if the respective format applied:

- Is the post a video? [video]
- Is the post a series of multiple images? [series]
- Is the post a collage of multiple images? [collage]
- Is the post a selfie? [selfie]
- Is the post a graphic or does the image contain additional graphics? [graph]
- Is the channel-owner visible in the picture in full body shape? [vis]
- Is the post a professionally edited piece of content? [pro]

Instagram offers possibilities to create a connection between the digital content and its physical environment by geotagging the post. Comparable to hashtags, geotags create content-catalogues that compile geotagged posts for the given location. In order to assess if politicians make use of geotagging, a additional dummy-variable was added to the data set. Again, it denotes 1 if the respective applied.

- Is the location of the post technically geotagged in the post? [geo]

In addition, the hashtag for the election "#btw17" was integrated into the data set. To round off the data, the following pieces of information on the profile were included to the data set as well:

- Followers: The number of users following the profile [follower]
- Number of posts: The lifetime amount of posts on the profile [np]

- Engagement rate: A calculated value that expresses the percentage of followers that evidently interacted with a post by either liking or commenting the posts. Formula: $\frac{(Likes+Comments)}{Follower}\ x\ 100$

- Daily growth of Followers in percent [g]

In order to keep variation among the data as low as possible it was necessary to scrape the data every day at the same time in the same order. I decided to start each day at 11:00 p.m. following a strict order. An alternative solution would have been to track each post for the same amount of time. In theory, this would have resulted in a more robust data basis for comparison. In practice the latter method would have resulted in constant monitoring of each of the politicians' channels in order not to miss out time relevant developments on the channel. Consequently, I deemed the idea unpractical and dismissed it.

Following the data collection, I processed the raw data for cross-sectional and panel-data analysis. For the cross-section analysis, I had to remove 191 observations of non-usage to avoid distorting artefacts in the data. Non-usage was observed on those days when a politician did not upload any new content. I will discuss the implications of this decision later on in section 3.8. For the panel-data structure, the observations of non-usage were unproblematic and remained in the dataset. Either way, I also removed 56 observations accounting for the profile of Angela Merkel. The final dataset for cross-sectional analysis resulted in 709 observations; the final dataset for panel-analysis resulted in 583 observations.

For answering the research question of how Instagram affects users' perception of candidates and politics and how this happens, the data will be analyzed in accordance with the developed hypotheses. I will analyze what drove user engagement on an aggregate level in the run-up to the 2017 German Federal Election. Given the missing individual observations in the data, a sound empirical validation of the hypotheses cannot be depicted. The presented results thus can only serve as a heuristic justification. I will conduct a series of regression analyzes, namely OLS-regressions to analyze time invariant usage patterns and GLS-regressions to analyze time variant usage patterns in a cross-section time-series panel data format. Time-invariant usage

patterns account for correlations in the data that aim to explain user-engagement by analyzing the way how politicians use Instagram and how their followers react by either liking and/or commenting. Time-variant usage patterns account for correlations in the data that aim to explain what drives channel growth over time in relationship to channel-usage.

Given the number of dummy-variables I will use in my models, multicollinearity could pose a problem to the explanatory value of the analyzes. Consequently, I will control for multicollinearity within the data by calculating the variance inflation factor (VIF) for each model. The VIF estimates the share of variance of a coefficient that is distorted, i.e. inflated as for collinearity with other variables. With regard to Allison (2009), a VIF of 2.50 is regarded as the threshold above which collinearity poses a problem to the model.

3.6 Analysis

The analysis laid out in this paper can be split into three sections. The first batch of hypotheses, **H1** and **H2**, asks for any relationship between Instagram usage by politicians, and observed voter behavior as in turnout and the share of first vote. The second section consists of **H3**, **H4** and **H5** and analyzes user behavior in relationship to channel usage by politicians. The testing of these hypotheses will help to explain how users interact with political content on Instagram and whether or not there exist dominant strategies to foster engagement. Last but not least, **H6** is set-up to explain what drives channel growth. Even though the hypotheses might only be implicitly connected with one-another, they provide for a general understanding of how Instagram is used by political actors.

H1 hypothesized that turnout increased in those constituencies where the share of active Instagram users among elected politicians was higher. In order to test this hypothesis, I analyzed the share of Instagram-using, successful candidates in all of Germanys 299 constituencies and matched the data with the given constituencies' turnout. In 219 of the 299 constituencies, the successful candidates used Instagram within their electoral campaigns. In those constituencies, where elected MPs used

Instagram, turnout reached a 76.26% average opposing 75.92% in those where MPs did not use Instagram. However, as shown by a corresponding analysis of variance, the marginal increase observed over the Instagram-usage is nowhere close of any statistical significance. **Table 2** provides the results.

Table 2: Instagram usage by political candidates a driver for voter turnout in constituencies?	
	Turnout
Instagram	.34 (.44)
Constant	75.92 (.37)
N: R^2: F (ANOVA)	299 0.0021 0.62 (1, 297)
The dependent variable is voter turnout across all constituencies in the 2017 German Federal Election. The independent variable is *Instagram-usage.* OLS- regression + analysis of variance for F-statistic (ANOVA), standard errors in parentheses. ***: p<0,01; **: p<0,05; *: p<0,1	

Consequently, **H1** cannot be confirmed. Instagram did not increase voter turnout in those constituencies, where successful candidates used Instagram in their campaigns. **H2** hypothesized that politicians who embraced Instagram during their election campaign received a higher share in first-votes. On party-level, the descriptive statistics show an increased share in first votes in five out of seven cases in the 2017 German Federal election (descriptive statistics in **Table 3** in Appendix 2). However, the observed difference was not statistically significant. Again, an analysis of variance provides results, depicted in **table 4**. Consequently, **H2** cannot be confirmed. Instagram was no driver for obtaining a higher share in first votes during the 2017 German Federal Election.

Table 4: Instagram a driver for share in first votes?

	CDU	CSU	SPD	AfD	Die Linke	Greens	FDP
Instagram	1.23	-1.95	.2	1.89	2.64	.75	-.39
	(.95)	(1.65)	(1.33)	(1.5)	(2.02)	(1.32)	(.52)
Constant	37.02	45.33	28.22	13.11	11.69	10.96	8.28
	(.62)	(1.14)	(1.01)	(.90)	(1.24)	(.98)	(.44)
N:	200	46	153	94	69	67	80
R^2:	0.0084	0.0308	0.0001	0.0169	0.0250	0.0049	0.0068
F	1.67	1.4	0.02	1.58	1.72	0.32	0.54
(ANOVA)	(1, 198)	(1, 44)	(1, 151)	(1, 92)	(1, 67)	(1, 65)	(1, 78)

The dependent variable is share in first votes in the 2017 German Federal Election. The independent variable is *Instagram-usage.* OLS- regression + analysis of variance for F-statistic (ANOVA), standard errors in parentheses.

***: p<0,01; **: p<0,05; *: p<0,1

To analyze how the channel usage is related to user behavior I set up **H3**, **H4** and **H5**. As most social networking platforms, Instagram issues the metrics of *followers*, *likes* and *comments*. While those metrics tender the profile holder with a sense of quantitative performance assessment, these social metrics are not without difficulties for analytical comparison of profile performance because the number of followers is a time-dependent figure. Generally speaking, the longer a profile exists, the larger the number of followers – especially, when the profile holder is a prominent individual.
Ergo, the metrics of likes and comments are also time-dependent as both metrics stand in close relationship to the total number of followers.
Put differently: A profile with 1.000 followers will receive more total likes and comments for each post than a profile with only 100 followers. However, the metrics of likes and comments are sufficient for calculating relative performance indicators that enable comparisons irrespective of channel size. These are: *engagement rate* and *growth*. The *engagement rate* expresses the percentage of followers that evidently interacted with a post by either liking or commenting the posts. *Growth* is defined as

the percentage increase of followers per day. Both *engagement rate* and *growth* will be used respectively as dependent variables for the now following statistical analysis. *Engagement rate* will serve as dependent variable for **H3**, **H4**, **H5**, *growth* will serve as dependent variable for panel data analysis in **H6**.

3.6.1 Cross sectional analyzes: drivers of user engagement

H3 hypothesized that signs of deliberate self-presentation generate higher engagement rates. *Model 1* was set up to test **H3** and consists of four variables that capture the visual presentation of each post. The respective variables aim to assess how profile owners manage their channel with regard to the creation of their online persona: If the channel-owner is visible in full body-shape [*vis*], someone else must have taken the picture. If the image was processed outside the smartphone-environment [*pro*] or consists of a graphic [*graph*], the profile holder must have taken the extra effort associated with both processes. Processed pictures or graphics could also be the product of external aide which is a common practice among top-tier politicians. Either way, without the deliberate will of producing these types of content, none of them would ever be uploaded. The selfie [*selfie*] is thus the only way of self-depiction without extra effort or external aide.

As argued by Muñoz and Towner (2017), politicians tend to deploy an "ideal candidate frame" (ibid. 290), which is depicted by the means described by the four variables in *Model 1* as all of them account for deliberate self-presentation. The question though remains how these various types of self-presentation affect user-behavior in terms of likes and comments. **Table 5** provides results.

As can be seen, the results from *Model 1* paint a yet clear but inconsistent picture. Of the four variables tested, two significantly increase user-engagement. In the sample, posts that show the profile holder in full person increase user engagement by 0.8% while selfies increase engagement by 2%. Both variables indicate deliberate self-presentation of the profile holder. However, it is not self-evident why the processing of pictures depicted by the variables *pro* and *graph* is neither significant nor positive. One could argue that the Instagram audience approves self-presentation in a political context only to a certain extent.

Table 5: User engagement and posting behavior: OLS Regression				
	Model 1	Model 2	Model 3	Model 4
n#		.007 (.03)		.01 (.03)
nt		-.40*** (.13)		-.42*** (.13)
pol			-.45 (.38)	.09 (.37)
party			.14 (.28)	.28 (.27)
pol_msg			1.01*** (.32)	.69** (.32)
video		2.92*** (.54)		2.76*** (.55)
series		.09 (.41)		-.40 (.44)
collage		-3.10*** (.47)		-3.05*** (.47)
graph	-.31 (.51)			-.32 (.52)
vis	.78** (.36)			.99*** (.34)
selfie	1.96*** (.47)			2.28*** (.46)
pro	-.13 (.31)			-.17 (.31)
geo		-.41 (.30)		-.52* (.31)
btw17			.05 (.27)	.01 (.32)
Mean VIF	1.31	1.42	1.05	1.47
Constant	5.14 (.30)	6.28 (.23)	5.57 (.23)	5.17 (.34)
Politicians:	11	11	11	11
n=	709	709	709	709
R^2	0.0261	0.1181	0.0176	0.1593
Adj. R^2	0.0205	0.1106	0.0120	0.1423

The dependent variable for all models is the Engagement Rate. OLS- regression, standard errors in *parentheses*. Data captured between the 3rd of August 2017 and the 24th of September 2017. Unbalanced sample. *Italics* indicate dummies

***: p<0,01; **: p<0,05; *: p<0,1

This, however, would stand in contrast to common practices in influencer-marketing and puts the findings by Eckerl and Hahn (2018) into question. They argued that the adaptation of content to the likings of Instagram was one of the main predictors for a successful channel usage by politicians. The observed results, however, indicate at least some evidence for a positive effect accompanying self-presentation in terms of user engagement. I therefore tend to confirm **H3**: Deliberate self-presentation increased user engagement – at least to a certain extent.

Regarding different options for content creation, I hypothesized (**H4**) that the more content adapts to the means provided within the Instagram environment, the better the performance in terms of user engagement. *Model 2* was set up to test **H4** and consists of four variables that depict the media-types available on Instagram, as also the available networking tools (*video, series, collage, graph, n#, nt, geo*).

Before turning to the results, a brief disclaimer regarding data-integrity: Due to a partial mistake in the early coding process, the *video*-variable is slightly distorted, leading to a smaller observed effect: In a total of six out of 43 video-posts I confused video-views with video likes. As this directly affects the dependent variable *engagement rate*, I decided to replace the inaccurate values with imputed mean-values.

With regard to media-type, the results indicate that not every possible media-feature increases user engagement:

The usage of videos significantly increases the engagement rate in the sample by 2.9%. Opposing this positive effect stands the usage of collages, that is: plotting numerous pictures into one single picture. Apparently, users do not favor the usage of collages as corresponding posts attracted significantly less user-engagement (-3.1%). Given that one account in the data set made heavy usage of the collage-feature while the vast majority of accounts hardly used it, this finding can hardly be generalized. I will get back to this point in the discussion of the results in chapter 3.8.

Regarding the usage and utility of additional networking-means **H4** provides further insights: Both the usage of hashtags (*n#*) as the usage of geotagging (*geo*) did not affect user engagement. Concerning the hypothesis, the results from Model 2 leave a mixed impression. Yes, videos increase user engagement. The remaining features, however, don't provide for a generalizable correlation between multi-media usage and increased user engagement. Consequently, I refuse **H4**.

Assuming that followers are composed to a certain degree of partisans I hypothesized (**H5**) that political content would increase user engagement. The results from *Model 3* show that political content indeed positively affects the liking and commenting of the profiles' followers. Most notably, the articulation of a political statement (*pol_msg*) increases user-engagement by 1%. However, it is not self-evident why further variables that account for politically connoted posts remain insignificant. In combination with the very low model benevolence I therefore tend to refuse **H5**. Even though there is some evidence for political partisanship among followers, the observed behavior in the dataset is not sufficient to isolate a general effect.

Given the results so far, I close the series of OLS analyzes by including all captured variables into one single model, *Model 4.* The purpose of this last model is to control for general robustness of the observed effects and model benevolence in relationship to the gathered data. The results from *Model 4* are in a way promising that the observed effects prevail without sacrificing much of their corresponding significance.

Furthermore, the model explains 14% of the observed variance in user engagement. The question though remains what to make out of this finding. As outlined above, the OLS analyzes were set up to search for usage patterns in the observed data that could explain user-behavior as measured by the engagement rate. The results so far draw questions regarding the suitability of the chosen method. While there are traces of explanatory value in the data, the arguably biggest hurdle is to account for artefacts in the data-structure. I will discuss these general implications in section 3.8 later on.

3.6.2 Panel data analysis: drivers of channel growth

I will now turn to the analysis of profile growth. **H6** hypothesized that profiles with higher regular output experience bigger growth. Given the explorative nature of this study, **H6** aims to increase the general understanding of Instagram: A better understanding of profile growth will add to the understanding of Instagram as a political phenomenon as a whole. In order to analyze profile growth, I transferred the gathered data from a cross-sectional data-structure to a panel structure. The panel analyzes will focus on two things:

First, I will assess if posting intensity affects channel growth. On average, the observed politicians uploaded 1.2 posts per day. While some like Andreas Scheuer or Nicola Beer uploaded numerous posts almost every day throughout the monitoring, the accounts of Hubertus Heil or Dr. Alice Weidel were used irregularly or scarcely (see **table 7** in Appendix 2 for descriptive statistics on posting-behavior). This draws the questions if and how channel usage affects growth.

Second, I will incorporate the engagement rate into the analyzes to assess eventual growth-related effects that derive from higher user-engagement. I will therefore test three models: *Model 5* tests for the general correlation between the number posts uploaded per day and the corresponding growth-rate. *Model 6* breaks the number of posts down into dummy-variables to analyze specific relations between the exact amount of posts uploaded and the corresponding growth rate. *Model 7* concludes by adding the engagement rate to the series of dummies. **Table 6** provides the results:

Table 6: Channel growth, frequent posting and user engagement			
	Model 5	Model 6	Model 7
Output Level (Number or Posts)	.24*** (.04)		
1 post		.16 (.12)	-.71*** (.17)
2 posts		.17 (.15)	-.60*** (.18)
3 posts		.42** (.21)	-.34 (.23)
4 posts		1.01*** (.27)	.22 (.29)
5 posts		5.01*** (.49)	4.33*** (.49)
6 posts		.70 (.60)	-.08 (.58)
14 posts		.57 (1.17)	-.22 (1.14)
Engage			.12*** (.02)
Constant	.71 (.19)	.79 (.16)	.85 (.14)
Politicians:	11	11	11
Days:	53	53	53
n=	583	583	583
R^2 within	0.0542	0.1675	0.2145
R^2 between	0.0230	0.0486	0.7369
R^2 overall	0.0277	0.1467	0.2727

The dependent variable is daily growth. *Italics* indicate dummies. GLS- regression, random effects, standard errors in parentheses. The Sample consists of aggregated Instagram user data for 11 politicians over a time period of 53 days.

***: p<0,01; **: p<0,05; *: p<0,1

As can be seen in the results, posting-habits make a difference regarding the growth of the given profile. On average across the sample, each post increases profile growth by 0.2%. Apparently, the more frequent a profile is updated with new or additional posts, the bigger its attraction to visiting users that then become new followers.

Model 6 provides further details on posting intensity and its effect on profile growth. The results show that a higher posting-intensity significantly affected profile growth for the better. While it is evident that the number of posts alone does not explain the

observed variance in the dependent variable, the results indicate that a higher output facilitates higher growth rates. This finding is congruent to an early study by Voigt and Seidenglanz who showed with the example of party accounts that frequent posting facilitated steady growth rates (Voigt and Seidenglanz 2017, 52). Supplemented with the given days' engagement rate, *Model 7* illustrates how the fostering of high user engagement with the uploaded content increases the profile growth over time. The findings indicate, that the creation of a community by providing the "right" content in a high frequency separates fast-growing profiles from stale ones. Against these findings, I tend to confirm **H6**. In the sample, more frequent posting increased channel growth.

The results, however, cannot explain, which external factors drive potential followers to the profiles in the first place. Regarding this question, I provide observational data from the profiles of Dr. Angela Merkel and Martin Schulz. As seen in figure 2 and figure 3, events of high media interest, like the TV debate between the two top candidates or the appearance on a YouTube format for first-time voters ("Deine Wahl") increased channel growth of the two top candidates significantly.

The descriptive results depicted in the two figures are remarkable as they indicate that voters incorporate Instagram into their media diet when searching for political information. This would imply that Instagram could pose as a low-threshold opportunity for political actors to engage with interested individuals for the first time.

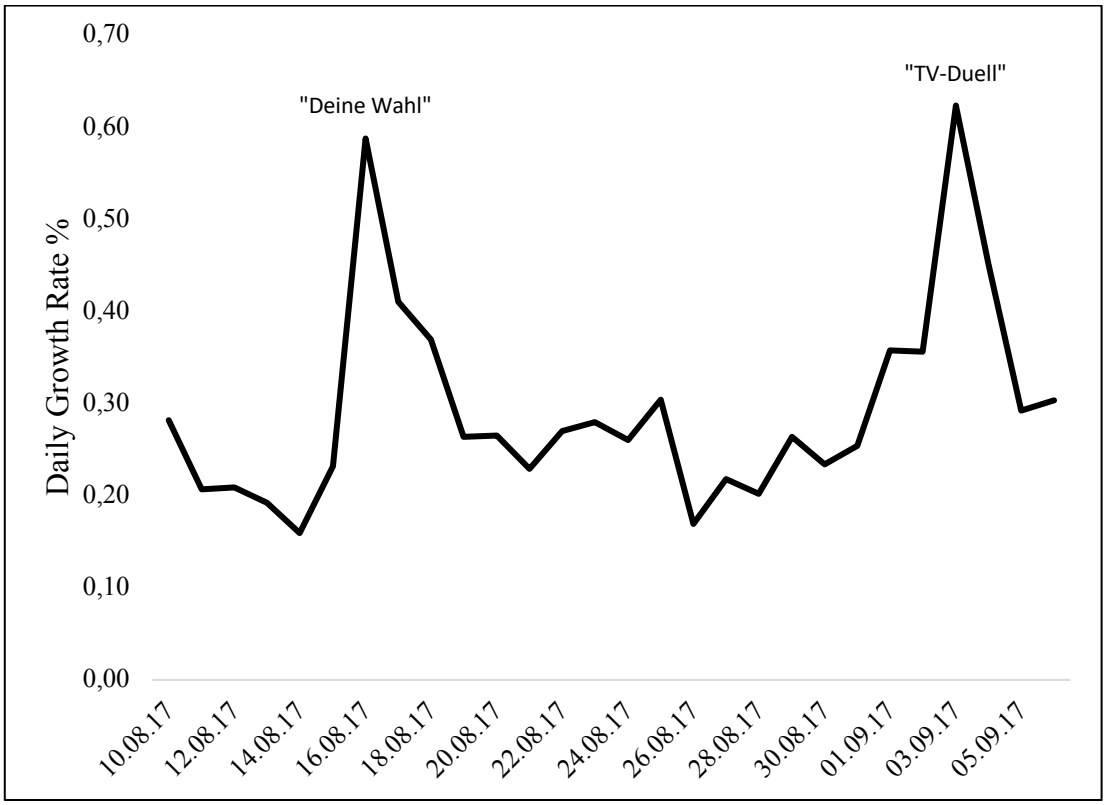


Figure 2: Daily Growth Instagram Dr. Angela Merkel

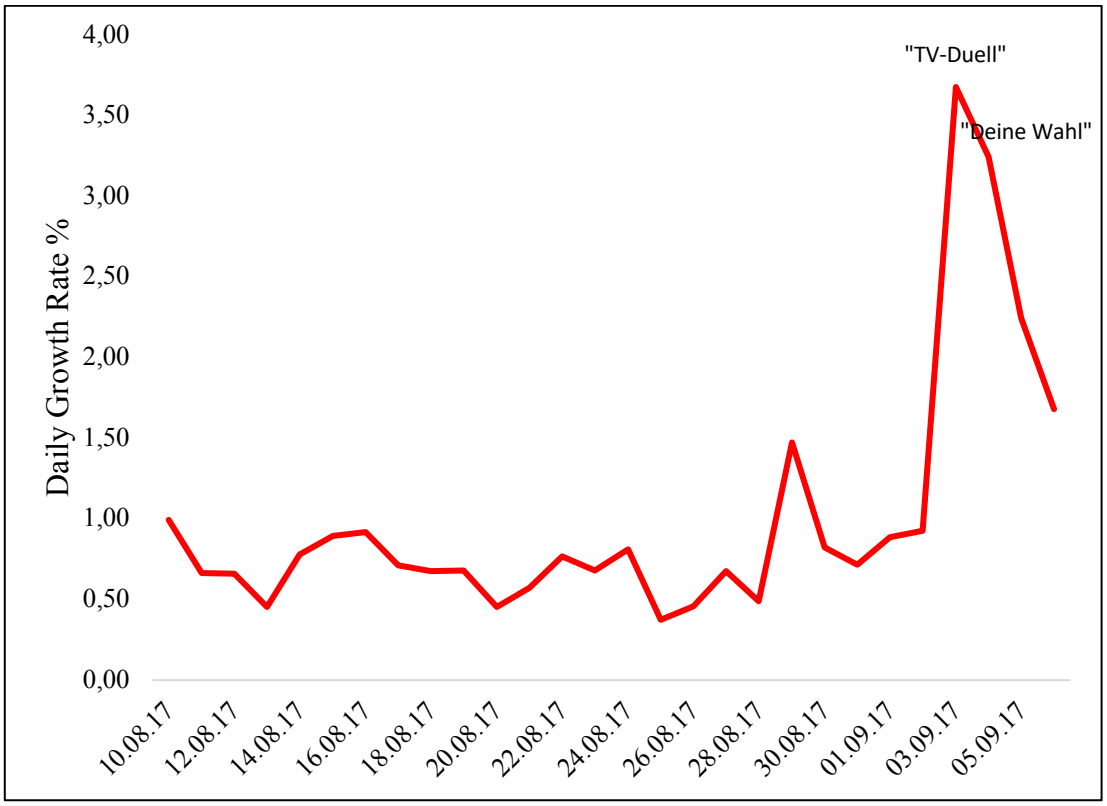


Figure 3: Daily Growth Instagram Martin Schulz

3.7 Interim conclusion

Before discussing the results and methodological follow-up questions, I will briefly summarize the findings so far. In total, the analysis consisted of six hypotheses that I separated into three sub-categories. First; I asked for any possible relationship between Instagram usage and turnout (**H1**), and Instagram usage and share of first-votes (**H2**). As was shown in corresponding analyzes, neither hypotheses could be validated. Instagram did not affect turnout on constituency-level, nor increased the share of fist-votes of those politicians who included Instagram into their respective campaigns. The second batch of hypotheses aimed to explain what motivates user-engagement on the platform. As Instagram provides various means of enhanced self-presentation I argued that the usage of those means would increase user engagement as the content would hence adapt to the general look and feel of Instagram and the viewing-patterns of the Instagram community.

It was shown, how selfies and the visual self-presentation increase user engagement (**H3**), and how the usage of videos also significantly increased user engagement (**H4**). Furthermore, the results indicated that the share of partisans among followers is relatively high as the articulation of political statements resonated with the followers, leading to increased user engagement.

On the one hand, these are promising results. On the other hand, the results were neither consistent with other covariates controlling for comparable attributes in the data, nor explained much of the observed variance. Even though the results from the panel-data analyzes were more consistent, the gathered data provided significant challenges for the genesis of generalizable findings. I will discuss this and other issues in the following paragraph.

3.8 Discussion

This study attempted to analytically assess Instagram as a means of political communication. I therefore created a theoretical argument that linked dual-system theory of thought with the visual intake of political information via Instagram. I presented a data set that observed the user behavior on Instagram by eleven top tier politicians during the final weeks prior to the German Federal Election of 2017. A

series of OLS-regressions was set-up to analyze time-invariant usage patterns in the data that sought to explain what drives user-engagement. A corresponding panel-data analysis aimed to explain what drives channel growth. The results outlined above necessitate firm discussion as a series of methodological and analytical hurdles materialized half-way through the analysis. The biggest difficulty for the pursuit of generalizable findings resulted from unexpected user behavior on the side of the observed politicians. I expected the selected politicians to showcase comparable usage-behavior given the similarity of the situation each politician found themselves in. However, it turned out that this was not the case. This resulted in strong biases in the data that hindered or even prohibited the deduction of generalizable statements regarding engagement rate or growth.

I will explain this problem using the example of the *collage*-variable in *Model2*. As outlined above, there was one profile in the data that made heavy usage of the collage-feature while the remaining profiles hardly used it. Of the 66 *collage*-observations, 57 are attributable to Andreas Scheuer. The remaining nine are distributed among Cem Özdemir, Katrin Göring-Eckhardt, Dr. Peter Tauber, Joachim Herrmann and Christian Lindner. The resulting negative coefficient of the corresponding *collage*-variable hence is hard to interpret as the findings could indicate two things: Either, the usage of collages indeed results in significantly less user engagement, or the observed negative effect relates to the profile holder himself, that is Andreas Scheuer.

For future studies, I would hence focus on one profile rather than creating large data-samples that comprise of numerous profiles. This eliminates the structural bias and enables the researcher to include further and more specific variables into the data set, that account for context-information of the post, the profile holder and other potential drivers of user engagement and growth.

Another issue that accompanies the statistical analysis of Instagram goes along with the handling on non-usage. As outlined above, I decided to exclude observations of non-usage in those analyzes that searched for general correlations or patterns in the data. The rational was the following: If the dependent variable is user engagement, then keeping non-events in the data makes no sense because users cannot engage with something that is not there. This decision, however, was harder than it might appear because one could challenge the underlying assumption of choosing OLS in the first

place: Is there even such a thing as time-invariant user behavior on Instagram that would imply cross-sectional analysis? One could argue, that user engagement is by itself a time-variant behavior that changes over time in accordance with the way, how a corresponding channel is run. Following this argument, non-posting would affect user behavior without producing observational counterparts in the data. This line of thinking would hence favor a panel-data structure for the analysis of user engagement over the cross-sectional data-format chosen above. However, given the explorative nature of this paper, this discussion could add to the understanding of how researchers can address Instagram-data and what to make of it.

3.9 Conclusion

This chapter had three main objectives: First, create a theoretical argument to conceptualize Instagram's hypothetical influence on individual information processing and decision-making. Second, showcase how to harvest and process Instagram-data without API-access. Third, analyze the gathered data against the hypotheses derived from theory. In the beginning of this paper I consequently asked how Instagram would alter voters' perception of candidates and politics and how this happened. From the research I conducted here, I conclude the following: There is reason to assume that the image sharing platform Instagram could have an effect on the voters' perception of politics and electoral competition. The corresponding theoretical argument that links decision-making theory with human cognition creates this hypothetical link. Instagram could affect voters' perception through the placing of visual cues and associations that increase the probability of affective decision-making. Politicians, on the other hand, make use of Instagram by creating idealized images of themselves. In doing so, the politicians remain in absolute control of the image they want to create, the message they want to emit and the associated frame they want to set. The combination of affective information-processing through the focus on visuals and the absence of any frame-compromising external interference lends Instagram substantial persuasive potential. The results from the statistical analyzes show, how means of deliberate self-presentation created greater user resonance. Either by uploading selfies, or by having someone else taking the picture: Politicians who

uploaded images of themselves either way were praised with significantly higher engagement from their followers. The same holds true for the uploading of videos which could be interpreted as an even more sophisticated effort of self-presentation. More generally speaking, Instagram draws attention to politicians' personalities and hence supplements the perspective on politics with an additional, more personal note. This lowers the initial threshold for interested individuals to interact with the political realm. If used correctly, Instagram could amplify interest and arguably transfer first-time contacts into partisans while simultaneously mobilizing the latter.

The results furthermore stipulate that the share of potential supporters or partisans among the followers of a political profile is rather high. The issuing of political messages through an Instagram post increased user engagement significantly. This finding indicates that initial political interest could drive individuals to political profiles. A corresponding observation was made in the context of the 2017 TV duel between Dr. Angela Merkel and Martin Schulz: The nation-wide TV broadcasting-event significantly increased profile growth of both Ms. Merkel and Mr. Schulz' Instagram profiles. This implicates that users deliberately search for the corresponding profiles under the influence of increased media-attention. For the implementation of Instagram within political campaigns, this is a relevant finding as it demonstrates, how voters seek additional political information regardless of media type.

As discussed above, conducting this study highlighted methodological problems associated with the statistical analysis of Instagram data. The biggest hurdle was the unexpected degree of variance that the observed politicians showed in terms of channel-usage. For future studies I would henceforth preferer single-account analyzes over studies on aggregate-level. The biggest issue or limitation with the presented results, however, derives from the observational data used in the analysis: The gathered data cannot provide for any empirical validation of the findings and claims made above. Lacking individual voter data, the presented results from the hypotheses tests can only serve as a heuristic justification for the theoretically derived link between Instagram consumption, information processing and hypothetical voting-intentions. In order to assess how digital communication affects individuals, it is hence necessary to gather data on the individual user level. This, however, necessitates an entirely different research design and a quasi-experimental approach at last.

4. What if we are all just Trained Monkeys? A Neurological Approach to Analyzing Individual Decision-Making in a Political Context

4.1 Introduction

Patrick Stewart and James Schubert were among the first researchers to link political choice to cognitive processes, and in 2006 published a paper on the effect of precognitive primes in political advertisement. Their experimental study showed how placing a subliminal stimulus within a political advertising TV spot significantly affected voters' attitudes towards the spot's topic, the related party and the candidate (Stewart and Schubert 2006, 103). TV spots of that kind aim at neurological mechanisms and build on the hypothetical ability to persuade voters through the strategic usage of advertising-techniques. They went on to argue that if future research would find more significant effects associated with corresponding techniques, there would "be a need to develop policies concerning their use" (ibid., 109).

Despite a continual increase in technological possibilities to influence and affect individual decision-making in the political context, political science scholars to this date have shown little interest in researching the link between political decision-making and related cognitive and neurological processes.

This lack of scientific analysis in a relevant and promising field is remarkable in face of the recent technological and societal changes. Both the media system as also society as a whole have changed significantly under the influence of digitalization since Stewart and Schubert published their findings. Especially through social media and related web 2.0 phenomena, the share of direct communication between politicians/brands/entities and individuals has increased dramatically. Through smartphone-based social media, politicians can now communicate directly with the electorate. They circumvent journalistic classification and approach the electorate in a 'private' domain – that is: the individual voters' social media feed. Political communication as a whole has hence become much more dense and personal in the wake of social media. Especially the delivery via smartphone creates an almost intimate link between politicians and social-media consuming individuals. Political communication thus follows a trend that can actually be found in all life situations and

everyday situations: the shifting of everyday activities to the smartphone, or at least the addition of the smartphone to everyday tasks: Be it the instant availability of information, trade and commerce of goods and services, or interpersonal communication. There arguably is not a single aspect of life that is not remotely captured by a smartphone-based application. And as I will argue, this development could significantly affect the process of political will-formation and decision-making on individual voter-level. There exists sound clinical and experimental evidence from the realm of neurology and social psychology on how intensified smartphone-usage negatively affects human cognition and decision-making (Bechara 2005, Tanis et al. 2015, Wilmer and Chein 2016). Intensive smartphone usage leads to hyperactivity in the prefrontal cortex and thus overrules those cognitive mechanisms that guide individuals through rational decision-making. This cognitive impairment is - from a neurological perspective - identic to drug-related impairments of addicts (Bechara 2005, 1461).

It hence stands to question, if and how those cognitive impairments associated with heavy and addictive smartphone usage affect political decision-making. At the same time, many western democracies face an increasing share of swing-voters in combination with a decreasing share of robust party-identification among the electorate. Consequently, winning or losing elections heavily depends on campaigning and mobilizing efforts (Brettschneider 2014, 632). Especially in countries that run on systems of relative majority, the absolute number of votes necessary to ultimately affect and thus alter the outcome of an election has come down to under 100 votes, as has happened in the German constituency of Hesse in 2018 (Statistik Hessen 2018). The combination of decreasing party-alignment, increasing share of swing-voters, close margins and a digitalized society hence necessitates a shift in research focus. Since the level of engagement between a user and his or her smartphone is arguably higher than their relationship to television broadcasting, the corresponding effect from smartphone-based campaign-efforts could be significantly bigger than the effects Stewart and Schubert isolated in 2006. Just how engaged individuals are with their smartphones has been shown in a number of studies. A study on smartphone usage in the U.S in 2011 revealed that "79 percent of smartphone owners check their device within fifteen minutes of waking up every morning." (Eyal 2014, 1) A study for the

German market published in 2018 showed that Germans between the age of 18 and 24 on average checked their smartphones 56 times a day. In the same study, 38% of the respondents said that they had at least tried once to reduce their smartphone usage - only 12% claimed to have been successful in doing so (Deloitte 2018). This last finding is of particular relevance for the paper at hand, as it suggests a certain pattern of human behavior that is smartphone induced but that has not been explored yet: addiction to technology and its effects on human behavior.

As I will argue, the omnipresence of the smartphone affects the capacity of the human brain in a way that could lead to affective decision-making. This in turn will affect individuals' perception of politically relevant information and thus affect decision-making in a political context. I will thus create a theoretical argument that links heavy smartphone usage to individual decision-making in a political context through neurological processes. This will lead me to presenting a theoretical model that explains individual behavior under the influence of smartphone-transmitted stimuli.

4.2 Social media, smartphones and political decision-making

Research on social media and its effect on human behavior so far has emphasized on phenomena that materialize on the societal level. Be it in the form of hate-speech (Matamoros-Fernández and Farkas 2021), fake news (Igwebuike and Chimuanya 2021), filter-bubbles and related phenomena associated with social media communication: scientific and public discourse has arguably taken place on aggregate level that focuses on the respective content and its distribution rather than conceptualizing the associated mechanisms that explain actions on the individual level. It is undoubtedly important to analyze and understand how various agents use social media in order to obtain their (economic, political, social, what-so-ever) goal. However, I propose that a central or maybe even *the central* aspect of social media usage and its effect on societies (and individual behavior) has yet received only scarce attention: the medium itself, namely the smartphone. With reference to McLuhans famous quote of "the medium is the message" (McLuhan 1964, 7), not Instagram, Facebook, Twitter or whatever app-based digital platform arguably affect human behavior and individual decision-making, but the medium through which the

corresponding contents are conveyed: The smartphone. In order to better understand corresponding societal changes that occur under the apparent influence of digitalization and social media, causes and effects of smartphone usage on the individual level need to be researched. Analyzing the individual user could help to isolate causal mechanisms that might or might not explain observed effects on aggregate levels.

Various papers have more recently assessed the effects of social media on political participation (Knoll et al. 2018), social media use and campaign participation (Ohme 2019) and social media and mobilization (Kligler-Vilenchik et al. 2020). However, in order to analyze if and how large-scale social media usage, targeted advertisement and digital campaign techniques arguably possess the means of changing individual behavior and thus affect the outcome of elections, it is necessary to get a better understanding of what drives political decision-making on the *individual voter-level*. As of March 2021, no study has yet established causality between social media stimuli and individual behavior, namely decision-making. I argue that there are *two* reasons for that:

First of all, and most apparent is the need for data on the individual level. Individual-level data is the necessary condition for establishing causality between social media stimuli and individual behavior. However, this data is hard to obtain given the restrictive data-policies issued by tech-companies like Google and Facebook. Both companies could provide insights into behavioral patterns under the influence of targeted advertisement and corresponding campaign techniques. However, in the absence of this data, individual behavior can only be derived from available public metrics within the social networks, i.e. shares, likes, comments and related. While this observational social media data can show user interactions on aggregate levels, the data cannot establish causality as it lacks controlled measurement on the individual level.

Second, individual-level data is a necessary but not the sufficient condition for establishing causality. Ohme (2019) showed that even when large-scale individual usage-data of social media use and smartphone media-diet is available, it is very difficult to control for artefacts in the data or endogeneity. In his recent study the author showed, how media exposure of digital native first-time voters affected “mobilizing

potential for their campaign participation" (Ohme 2019, 1). The studies' results suggested that "a digital media environment" (ibid., 1) would lead to a higher "exposure to direct communication from political actors" (ibid.) among young voters. This in turn would lead to a potentially higher involvement in elections. What appears as a causal link between media exposure and individual behavior is limited by the author due to methodological problems that derive from the data-source: "[…] the mobilizing media effects we find – especially in regards to content from political actors – is subject to potential endogeneity. It may well be that more politically active citizens are also more likely to follow politicians on social media in the first place. In this case, direct political communication would be the outcome of participation and not its predictor." (Ohme 2019,14)

Consequently, when aiming for causality, prior research designs have not been eligible as they could either leap towards hypotheses tests of aggregated social media as demonstrated in chapter 3, or get tackled by methodological hurdles resulting in excluding limitations and endogeneity problems (Ohme 2019). I argue that both problems have the same root, namely a too narrow perspective on specific social media outlets and corresponding theoretical foundations, arguments and research designs. In order to overcome those problems, I suppose to alter the research perspective from app-related influence and behavior to smartphone-related influence and behavior.

By emphasizing on smartphone-based stimuli, I can embrace theoretical arguments from neurology, behavioral psychology and economic decision-making theory to derive a research design that enables hypotheses testing under laboratory conditions and the potential detection of causality between political stimuli and (affective) voting behavior on individual level.

In this chapter, I will thus bring together largely separate literature. I will show that there is sufficient empirical evidence, that smartphone-centered communications and corresponding usage of social media apps significantly alter human perception and cognitive capabilities. I will embrace literature from neurology that provides additional explanation for the behavioral dual-system theories as of Kahneman (2011) and related scholars. I will argue that the combination of smartphone-screens, neurologically addictive app-design and the ever-increasing mediatization of individuals alter decision-making patterns. I will present a research design capable of establishing

causality between stimuli and behavioral change by minimizing variance among participants within a mock-up electoral campaign. Consequently, the research question of this paper reads as follows:

Does smartphone-centered social media consumption affect and (evidently) alter human decision-making in a political context?

4.3 Theory

In April 2019, a video went viral on social media. It showed how a chimpanzee used the Instagram-app on a smartphone. The chimp was able to watch videos, switch between the news feed and individual posts back and forth, scrolled through the feed and selected images by himself (Milman 2019). While the first sight induced a quick laugh, on second thought the laughter got sore.

How could a monkey be capable of using a smartphone-based social media app? The circumstances, under which the depicted behavior was recorded, are unknown. It is well documented that primates are capable of interacting with (touch)screens in laboratory experiments (Heekeren et al. 2008, 468), so the monkey could have been trained to use the app. But still: If a smartphone-based application, used by millions of people, apparently is so intuitive that even a monkey – trained or not – is cognitively able to grasp the operating principle of the app, then this sheds a light on broader questions of human cognition and behavior under the influence of smartphone-technology and corresponding decision-making. What if we are all just trained monkeys? This is of course a metaphorical question but as with all metaphors, it may identify similar characteristics between two ideas that otherwise would not appear to the eye of the observer (Cambridge 2020). I will thus have to stay in the animal kingdom for a little longer in order to make my argument *of smartphone-induced behavioral change in decision-making situations.*

In 1954 the neuroscientists James Olds and Peter Milner made a fundamental discovery for the understanding and analysis of how the brain of vertebrates processes rewards and how neurotransmitters are associated with the reward system of the brain (Rolls 1974, 74). In their experiment, Olds and Milner implanted electrodes into different areas of rats' brains and stimulated these areas. Their results indicated, that various places exist in the brain where "electrical stimulation is rewarding in the sense

that the experimental animal will stimulate itself in these places frequently and regularly for long periods of time if permitted to do so." (Olds and Milner 1954, 426) When a specific region of the brain was triggered, rats chose to self-stimulate this region of the brain over other rewards such as food or even water.

Or as Sapolsky (1994) put it: Whenever Olds and Milner stimulated this area of the brain, “the rat became unbelievably happy. So how can one tell when a rat is unbelievably happy? You ask the rat to tell you, by charting how many times it is willing to press a lever in order to be rewarded with stimulation in that part of the brain. It turns out that rats will work themselves to death on that lever to get stimulation. They would rather be stimulated there than get food when they are starving, or have sex, or receive drugs even when they're addicted and going through withdrawal.

The region of the brain targeted in these studies was promptly called the ‘pleasure pathway’ and has been famous since.” (Sapolsky 1994, 146) As additional research found, all vertebrates share this section in the brain, the described effect was attested in any species tested, including humans (Rolls 1974, 73).

What is critical here for the functioning of the observed behavior is the role of the neurotransmitter dopamine. Dopamine is released in a part of the brain called the ventral tegmentum or ventral tegmental area (VTA). From there, the neurotransmitter is projected towards different areas of the brain that account for various executive functions, such as the frontal cortex or the nucleus accumbens (Bressan and Crippa 2005, 17).

Both areas play a decisive role in the process of decision-making. I will briefly summarize the functioning of both the frontal cortex and the nucleus accumbens before putting their operations in a more specific context of human/smartphone interaction and corresponding behavioral patterns. Let’s begin with the nucleus accumbens and its associated functioning.

4.3.1 The nucleus accumbens

The nucleus accumbens is a “vaguely defined anatomical area of the basal forebrain” (Bressan and Crippa 2005, 17), located between two adjoining systems: The subcortical striatal system and the limbic system. It consists of neurons and is something common to all vertebrates. The nucleus accumbens consists of two parts, the central striatal core and the limbic shell. The limbic shell is part of the extended amygdala, a region in the brain "rich in dopaminergic neurons that are implicated in mediating substance abuse and possibly psychotic states.” (ibid.) Very generally speaking, the amygdala accounts for emotions (Gallagher and Chiba 1996, 221). More specifically, this region of the brain controls “internal emotional states that motivate behavior expressive of those states.” (ibid.) The rewarding feeling from – for example – substance abuse and related addictive behaviors is induced by the neurotransmitter dopamine, which is released by the neurons in the limbic shell of the nucleus accumbens. “While each substance of abuse appears to act on this circuit at a different step, the end result is the same: the release of dopamine, the primary chemical messenger of reward, at such reward sites such as the nucleus accumbens.” (Bressan and Crippa 2005, 17)

Like the wired-up brain of the rat from the Olds and Milner experiment, the human brain reacts to all sorts of things associated with positive attributes like a reward. This dopaminergic system is “associated with incentive, preparatory acquisition aspect of reward typically experienced as a sense of thrill, urgency, or craving. This notion is supported by humans and animals common experiences which show that waiting for the expected reward may be, at least, as pleasurable as the reward itself.” (Bressan and Crippa 2005, 17.) Put differently: The chase is better than the catch; the prospect of a future reward outruns the feeling that derives from the reward itself due to neurochemical reactions associated with certain cognitive processes in the amygdala/nucleus accumbens and the corresponding release of dopamine.

There are plenty of practical examples of daily situations where those dopamine-related cognitive processes alter human decision-making. Like the rat willing to press the lever an additional time in order to feel dopaminergic relief, everyone can relate to that feeling of saturation that kicks in after having affectively overruled internal constraints. Be it whether or not to have desert, another glass of wine, check Instagram

once more before starting daily duties or whatever induces this craving feeling associated with things we know we rationally shouldn't do but end up doing anyway. Sometimes, letting go of rational constraints for the sake of instant gratification just feels too good not to go for it. And, as I propose, this share of short-lived, irrational, affective decision-making rises under the influence of smartphone induced cognitive perception. Consequently, when asking for smartphone-induced behavioral changes in decision-making, it is important to note that individuals extort behavioral patterns that are resulting from neurochemical processes within the brain of which individuals are not aware. So how do these patterns work and why could they alter individual behavior in a political context?

Imagine the following: A monkey is trained to press a lever ten times once a bell is ringing. The sound of the bell hence initiates the start of the test-session. After successfully fulfilling the task, the monkey receives a food-reward. Measurements of dopamine levels show, that they are highest not when the monkey receives his reward, but when he hears the sound of the bell that initiates the start of the test-session. Consequently, dopamine is not about pleasure, but about the anticipation of pleasure (Sapolsky 1994, 172). When the experiment is changed, and the monkey does not receive his reward every time after he pressed the lever ten times, but only every second time or even randomly, dopamine levels exponentially grow even further. It is the uncertainty of the reward that makes up the excitement, which in turn initiates the action. Dopamine thus fuels behavior needed to get the reward associated with the dopaminergic relief (ibid., 173).

The described mechanism in the experiment is almost identical to the functioning of slot machines or most popular smartphone apps. What they have in common with the lever-pressing monkey is their design. It causes interactive behavior through a combination of a trigger, a corresponding individual action, a variable reward, and for social media apps, personal investment in the form of information-disclosure to feed the digital slot machine (Eyal 2014, 6).

Push messaging on the home screen of smartphones take the place of the bell in the monkey/lever experiment. They initiate a session and fuel excitement. Small, colorful changes in the app icons, like the red indicator of notifications prominent in Facebook and Instagram send a signal to the user that indicates a novelty. The visual stimulus

does not contain more information than the binary information of changed content related to the users profile. A corresponding sound and a potential vibration transmits the push notification to three out of five human senses. Think of the social media notification as a light bulb sitting at the door of your magically self-filling refrigerator. Now, every time the content of the fridge changes, the light bulb goes on. That's how notifications work. They trigger anticipation of a reward, without promising it.

Following the push notification, dopamine levels rise and initiate an urging need that can only be saturated by opening the app and check what caused the notification. Once learned, individuals will open the app from the same craving even without push notifications. By then, it is the sheer pleasure of anticipating a potential novelty that cues this behavior. A habit is formed, outrunning complex computations of expected value that result from a decision by the use of heuristics (Ariely 2009, 39). I will get into the effects of this habitual, guided behavior in more detail later on.

The key take-away for the moment is that the operating principle of smartphone-based social media apps has distinct similarities to the functioning of slot-machines and hence to addictive behavioral patterns. The smartphone and corresponding social media apps (portable slot machine) activate the same neurological regions and corresponding neurochemical principles that induce gambling addictions, substance abuse or addictive behavior in general. What hence is described is the general process where dopamine-related triggers overrule that part of the brain that is orchestrating planned behavior, i.e. rational thought, self-control and corresponding information processing, that is the frontal cortex.

4.3.2. The frontal cortex

The frontal cortex "plays a key role in executive function, decision-making and impulse control." (Sapolsky 1994, 172) "It is the most recently evolved part of the human brain, it is disproportionally huge in primates, and is the last part of our brain to fully mature. The frontal cortex is the nearest thing we have to a superego. Starting from toilet training, it helps you to do the harder, rather than easier thing – for example, thinking in a logical, sequential manner, rather than bouncing all over the place cognitively." (ibid., 119f) In decision-making, the frontal cortex lends will power to

individuals by controlling those impulses triggered through the amygdala (Bechara 2005, 1459). Decision-making – that is "the selection of actions based on the likelihood and potential value of possible outcomes" (Huettel et al. 2005, 3304) – is hence the product of the weighing between "two separate (sic), but interacting, neural systems [...]: an impulsive amygdala system for signaling pain or pleasure of immediate prospects, and a reflective, prefrontal cortex system for signaling pain or pleasure of future prospects." (Bechara 2005, 1458)

This reflective system in the prefrontal cortex develops behavioral patterns in accordance with social rules and corresponding learned behavior or habits. It hence controls the impulsive system through several mechanisms (Sapolsky 1994, 119; Bechara 2005, 1458), and enables the individual to reflect perceived stimuli and to put across rational decisions over affective heuristics when necessary. However, the reflective system can be overruled by hyperactivity in the impulsive system: "Drugs can trigger bottom-up, involuntary signals originating from the amygdala that modulate, bias or even hijack the goal-driven cognitive resources that are needed for the normal operation of the reflective system and for exercising the willpower to resist drugs." (Bechara 2005, 1458) The key mechanism by which these hyperactivity-inducing, bottom up signals work are pharmacological (ibid., 1460). Furthermore, already related cues like the sight of a needle can lead to hypersensitivity and attentional bias to rewards (ibid., 1461).

As outlined by Bechara (2005), addicts showed "exaggerated automatic responses to cues related to the substances they abuse" (Bechara 2005, 1461) which, from a neurochemical perspective, is very similar to, for example, the so-called phantom vibration syndrome (PVS). PVS is a condition where individual perceive a vibrating/ringing cell phone when it is not (Tanis et al. 2015, 356). As outlined by Kruger and Djerf (2017), the human signal-detection issue that is phantom cell phone activity is the product of high phone dependency. "Women, younger individuals, and those with lower conscientiousness and emotional stability (i.e. higher neuroticism) had higher symptoms of cell phone dependency." (Kruger and Djerf 2017, 360) The phone-dependency itself was a robust predictor of phantom cell phone experiences. These findings indicate a general correlation between high smartphone usage and impaired cognitive perception. Furthermore, this hypothetically implies, that heavy

smartphone users show similar behavioral patterns to addicts when triggered with a corresponding digital cue. This in turn would impair decision-making strategies as shown below: In clinical studies, patients with ventromedial prefrontal cortex (VMPC) damage showed similar behavior in decision-making tasks to that of drug addicts.

Both groups had significantly impaired abilities to make beneficial long-term decisions. In a corresponding Iowa gambling task (IGT) experiment, both groups kept "making disadvantageous choices despite the rising losses associated with their choices." (Bechara 2005, 1459) The reason for this was an over responsive amygdala which among addicts showed increased activity in response to drug-related cues. This exaggerated brain response would henceforth generalize to monetary reward (ibid., 1462). In other words, the immediate prospect of gaining money had the same effect on addicts' brains as cues related to their substance of abuse. Consequently, the observed impairment in decision-making is not a drug-specific phenomenon but a clinical, structural change in brain-functioning resulting from addictive behavior. This behavior is in line with observations made from heavy smartphone users. Assessing the driving forces of mobile technology habits, Wilmer and Chein (2016) found evidence for a correlation between heavy investment in mobile devices and a relatively weaker tendency to delay gratification and an increased penchant for impulsive behavior (Wilmer and Chein 2016, 1607).

As smartphones would regularly intrude ongoing cognition, the individual would stand under constant pressure to self-regulate those control processes that support the maintenance of goal directed behavior (Wilmer and Chein 2016, 1607). Smartphones hence would offer instant gratification through escape from ongoing tasks. The resulting engagement with e-devices might then "occupy basic reward-related processes and even impact the fundamental mechanisms through which we valuate and process rewards (Atchley and Warden, 2012; cited in Wilmer and Chein 2016, 1607)." Even though only correlational due to research design (self-report bias), the results from Wilmer and Chein (2016) show striking similarities to the clinical observations from Bechara (2005). With regard to associative decision-making, impulse control and reward sensitivity Wilmer and Chein conclude, "mobile technology habits, such as frequent checking, are driven most strongly by uncontrolled impulses […]." (Wilmer and Chein 2016, 1613) An experimental study by Ward et al.

(2017) provides further evidence for the effect that derives from those uncontrolled, smartphone-related impulses, resulting in impaired cognitive abilities. In a series of experiments, Ward et al. (2017) showed that the mere presence of one's own smartphone reduces the available cognitive capacity of the smartphone owner. Their so-called 'brain drain' hypothesis argues that the presence of smartphones occupies cognitive resources of the smartphone owner for the purpose of attentional control. "Because the same finite pool of attentional resources supports both attentional control and other cognitive processes, resources recruited to inhibit automatic attention to one's phone are made unavailable for other tasks, and performance on these tasks will suffer." (Ward et al. 2017, 141) Furthermore, the scope of the effect is dependent upon smartphone salience. The closer a participant was to his or her smartphone, the bigger the depletion of cognitive capacity i.e. the lower the corresponding test-results. Testing for three levels of salience (smartphone located on the desk, in the same room, in another room) the condition was coherent between subjects. Furthermore, in a separate test, it was shown that the depletion-effect was higher among individuals who self-reported a strong bond with their smartphone (ibid.).

The results by Ward et al. are of certain significance for the argument I am proposing whereas stimuli delivered via smartphone could affect and arguably alter individual behavior at all. As outlined in chapter 3, the increasing amount of media stimuli delivered on the individual level suggested a structural shift in cognition and decision-making. In view of an increasing amount of cognitive tasks through (over)mediatization and a corresponding amount of stimuli, the share of affective, heuristic decision-making would rise. Following dual-process theory, the responsible system 1 is "constantly making decisions based on heuristics that derive from subjective associations. […] This leads to decision-making patterns that prefer known/intuitive over unknown/counterintuitive solutions to decision-making problems." (Hügelmann 2021, chapter 3) The findings from Ward et al. (2017) lend proof to this line of thought. They show how the presence of one's smartphone diminish both working memory capacity and fluid intelligence among participants and hence arguably increase the share of affective decision-making based on heuristics. For the argument and research question at hand this translates into the following:

4.3.3 Interim conclusion

It was shown that heavy smartphone users show cognitive impairments similar to drug addicts. Addicts in turn suffer in the realm of strategic decision-making when triggered with a stimulus of immediate prospect (Bechara 2005, 1459). Both the studies of Wilmer and Chein (2016) and Ward et al. (2017) furthermore pointed out, how the presence of a smartphone affected cognitive capacities on individual level. The cognitive impairment was highest among those individuals who reported a strong bond i.e. investment in mobile devices, leading to a weaker tendency to delay gratification (Wilmer and Chein 2016, 1607), and to lower scores in corresponding working-memory and fluid-intelligence tests (Ward et al. 2017). This establishes a hypothetical link between addiction-related cognitive impairments, potential impairments from heavy smartphone usage and as a result a shift in individual decision-making.

At the core of my research lies the question whether or not it is – if at all – possible to persuade / nudge voters in a direction that increases the mobilizing capacity of a political campaign and hence could alter the outcome of an election. The paper at hand consequently asks if smartphone-centered social media consumption affect and arguably alters human decision-making in a political context. In order to answer this question, I will embrace the theoretical argument just outlined and first test it against the null-hypothesis:

In an experimental design that asks participants to take a political decision based on an information-stimulus, there should consequently be no significant change in the valuation of information and decision-making between a digital/smartphone-stimulus group and an analogue control group [**H0**]. In a subsequent step, I will further assess how smartphone-transmitted stimuli affect individual information assessment and corresponding behavior. I will now outline the research design capable of tracing smartphone-stimuli on individual level in a political decision-making situation before deriving additional hypotheses needed to investigate the research question in more detail.

4.4 Research Design

To answer the research question, I chose a between-subjects experimental study design. The between subject factor has two levels. The first is the exposure to political information transmitted via smartphone. The second is an analogue control-stimulus that transmits the same information via paper. The participants faced campaigning efforts of the fictitious politician Friederike Dostermann, an independent candidate running for office of mayor in the fictitious northern German small-town of Heisterfeld. The smartphone-stimulus was transmitted through Instagram, the analogue stimulus was a portfolio containing the same information masked as press-clippings (see Appendix 4 for stimuli). After having interacted with their stimulus, the participants completed a questionnaire asking for voting intention and personal judgement of the candidate. Given that the information both groups received was identical, and given that the entire decision-making situation was fictitious, the results from both groups should be identically arbitrary if no effect derived from the stimulus. [**H0**]

4.4.1 Participants: Pivotal groups

In order to establish a causal relationship between the stimulus and the corresponding individual action, I chose a distinct selection of individuals over a representative sample. The rationale behind this choice follows my theoretical argument.

It was shown that neurochemical receptors like dopamine fuel affective behavior. Smartphones in general, and social media apps in particular aim at those neurological predispositions by design. They form habits and thus affect human behavior in general. More specifically, I argued, that the omnipresence of the smartphone leads to behavioral patterns comparable to that of addicts. I argued, that this could result in clinical changes to the brain and thus affect cognition, perception and decision-making. The test results from Bechara (2005), as also the results from both Wilmer and Chein (2016) and Ward et al. (2017) strongly point in this direction. Consequently, if I hypothesize that the smartphone alters political decision-making at all, I assume that the probability of isolating a corresponding effect is highest among individuals that show traits that are in line with the theoretical argument. Accordingly, the

participants for the study had to comply with the following *two* attributes. *First*, heavy smartphone usage: If a causal relationship can be established, the level of personal engagement with one's smartphone is not only a predisposition for the hypothetical effect, but a potential predictor of corresponding outcomes. As self-reported smartphone usage intensity would bear the risk of bias, I made use of screen-time as a proxy measure as this could deliver an objective scale of individual smartphone engagement with lesser potential for distorting effects or biases.

The tracking of screen-time however posed a significant practical hurdle given that the usage of third-party apps to control for between-device alternations in measurement was not possible due to Apple's restrictive App-Store policy. In other words: For iPhones, no third-party app that measured screen-time was available. Due to availability-reasons during the pre-test phase, I chose an iPhone-only sample over an Android-only sample. A mixed-sample would have resulted in a slightly higher number of participants, but would have distorted the data given the potential variance in time-measurements between the Android and the iOS system.

Second, if individuals with addictions suffer from impaired decision-making (Bechara 2005), the probability of establishing causality should be higher when tested with addicts. Fortunately, or unfortunately, the probability of finding full-out addicts in the student-population I worked with was very low. For this reason, I enlarged this condition from addiction to addictive behavior. Given that addiction itself is not a binary condition but the product of a long-term neurological process (Bechara 2005), I expect only a small decrease in the observed effect.

At first sight, alcohol would be the obvious choice when searching for a self-reportable proxy capable of measuring vulnerability to addictive habits. However, this proxy was dismissed due to two reasons. First, alcohol consumption holds more possibly distorting effects given that alcohol can be consumed in countless differing ways and levels of intensity.
Second, facing a student-sample, I expected not enough variance among participants when asking for alcohol consumption. I consequently chose cigarette consumption as

a self-reported proxy for traces of addictive behavior. According to the German Federal Centre for Health Education (BZgA), the consumption of more than 10 cigarettes per day qualifies as a threshold between willful consumption and addictive behavior (BZgA 2019, 15). Among adolescents, however, already the consumption of more than 6 cigarettes per day would indicate nicotine addiction.

4.4.2 Recruitment

I recruited participants from a University-wide student-population that holds ready roughly 3.000 potential participants. A screening-process ensured to select a sample that matched the two described necessary conditions of heavy smartphone usage (i.e. iPhone usage) and tobacco consumption as a proxy for addictive behavior. The screening resulted in 267 potential participants that suited the experiment. In the end, 20 participants took part in the experiment.

4.4.3 Procedure

The experiment consisted of multiple sessions of up to five participants. The participants received invitations to join a session that suited their schedule. The sessions were exclusive smoker/non-smoker sessions. All the sessions followed the same routine considering the application of the corresponding stimulus. This procedure led to four sub-sets:

1) Smokers who received a digital stimulus
2) Smokers who received an analogue stimulus
3) Non-smokers who received a digital stimulus
4) Non-smokers who received an analogue stimulus

The actual experiment consisted of two steps. The participants were asked to have a seat at a workspace with a computer screen in front of them. At the workspace, participants found their stimulus. For the digital group this was a call to action on top of a portfolio to put their smartphone in front of themselves on the desk. The analogue

group found a portfolio in front of them that hold ready the analogue information. When seated, the participants were asked to pay attention to the laboratory personnel and received the following information:

"The fictitious northern German small town of Heisterfeld is holding regional elections for the mayor office. As a citizen of Heisterfeld, you are entitled to vote in the election. One of the candidates is 55-year-old Friederike Dostermann. In front of you are information on the candidate. Please assess the information carefully."
Afterwards, the participants received an initial task corresponding to the media-type they conceived. For the digital group, the task-description read as follows:

"Please pick up your smartphone and open the Instagram App. There you search for the profile of Friederike Dostermann (@f_dostermann). Please choose the post that you like best without liking it. Please mark the corresponding post with a sticker you find in the portfolio in front of you."

For the analogue group, the task-description reads as follows:
"Please pick up the portfolio lying in front of you and open it. In the portfolio, you find press-clippings and collected imagery of Friederike Dostermann. Please chose the piece of content you like best by marking it with the sticker that lies ready inside the portfolio."

The selection-task incentivized inspection of the provided content to a certain extent and did not play any further role in the course of the analysis. After inspecting the content, the participants were asked to fill out a questionnaire. Briefly summarized the questionnaire asked for voting intention, assessment of candidate and character traits of Friederike Dostermann, political attributes associated with the candidate, information on smartphone usage intensity, smoking habits, Instagram usage patterns and general interest in politics. The content of both stimuli was identical and only varied through the medium. Neither the digital nor the analogue information contained any hint or qualitative information that enabled the participants to take an informed examination of the candidate with regard to competency and related attributed. The

content-stimuli were highly generic providing as little qualitative information as possible. A comprehensive overview of all variables assessed throughout the experiment and the questionnaire are in Appendix 5 and 6.

4.4.4 Hypotheses

With reference to the research question, I will analyze if smartphone-centered social media consumption affects and arguably alters the individual decision-making process in a political context. The null-hypothesis henceforth expects no significant difference between the responses of both groups when asked for the outcome variables in general, and for *candidate traits*, *political capital* and *voting intention* in particular [**H0**]. In order to test the null-hypothesis, hypotheses that are more detailed are necessary to account for and operationalize the change in attitudes and voting intention. Concluding from the theoretic discussion and building on both the null hypothesis and the corresponding research design, I will therefore challenge the null-hypothesis with the following hypotheses:

1. Smartphone-transmitted content will result in higher *average* approval ratings of candidate traits [**H1**].
2. Smartphone-transmitted content will result in higher *average* evaluation of political capital of the candidate [**H2**].

By the use of these two hypotheses, I can isolate changes in information-processing and the evaluation of information between the stimulus and the control group. In addition, the following hypotheses will furthermore assess the scope of the effect that derives from smartphone media consumption, the hypothetical effect on voting intention and the general scope of the effect when combined with drug-related hypothetical amplifications:

3. Smartphone-transmitted content will result in a better election result and a higher willingness to vote for the candidate [**H3**].

4. Higher screen-time will amplify the effects that derive from the digital stimulus on the outcome measures [**H4**].
5. Nicotine dependency will amplify effects that derive from the digital stimulus on the outcome measures [**H5**].
6. If Instagram fosters affective behavior, then participants receiving the digital treatment should react quicker [**H6**].

4.5 Analysis

For challenging the null-hypothesis it is technically not relevant whether the expected approval rating within the smartphone-group increases or decreases when compared with the analogue control-group. However, I expect increasing values given how the smartphone-environment fosters the probability of affective decision-making (under the influence of ideal candidate frames) as shown by Muñoz and Towner (2017) and findings outlined in chapter 3.

H1 hypothesized that smartphone-transmitted content would result in higher average approval ratings of candidate traits. *Candidate traits* were assessed by asking for *competence*, *charisma*, *approachability*, *reliability* and *general appeal* of the candidate on a seven-point scale. In the post-production of the questionnaire results, the average across the five named *candidate trait* dimensions was also calculated. For the analysis, I chose OLS-regression and analysis of variance (ANOVA) to account for model benevolence and variance between the population means with regard to the stimulus.

Effect sizes were calculated using Cohen's d. Cohen's d expresses effect-size with regard to the standard deviation of the sample mean. A corresponding effect-size of .50 consequently equals a difference between the two groups of half a standard deviation. An effect-size of .75 equals a difference of three-quarter of a standard deviation and so on. As a rule of thumb the bigger the effect-size, the stronger the actual effect.[2]

[2] For the interpretation of Cohen's d, the following thresholds are common (Cohen 1988): Small effect $|d| \geq 0{,}2$; Medium effect $|d| \geq 0{,}5$; Large effect $|d| \geq 0{,}8$

The scale for measuring *candidate traits* was a seven-point scale with 1 being the lowest and 7 being the highest possible answer. The results from the analysis concerning **H1** are displayed in **table 8**.

Table 8: Ratings for candidate traits[3]

	Mean candidate traits	competence	charisma	approachability	reliability	General appeal
Smartphone	.82**	.9*	1.3**	1.1***	.2	.6
	(.32)	(.43)	(.58)	(.36)	(.49)	(.43)
Constant	4.72	4.2	4.3	5.2	4.9	5
	(.23)	(.30)	(.41)	(.25)	(.35)	(.30)
N:	20	20	20	20	20	20
R^2	0.2655	0.1971	0.2169	0.3408	0.0091	0.0989
Adj. R^2	0.2247	0.1525	0.1734	0.3042	-0.0460	0.0488
F (ANOVA)	6.51^{**}	4.42^{**}	4.99^{**}	9.31^{***}	0.17	1.98
Cohen's d	-1.14^{+++}	$-.94^{+++}$	-1^{+++}	-1.36^{+++}	-.18	$-.63^{+++}$

The dependent variable is named in the top row of each column. *Italics* indicate categories that make up the values of mean candidate traits. The independent variable for all models is *Smartphone.* OLS- regression, standard errors in parentheses. The Sample consists of individual laboratory data from 20 participants surveyed between 26th and the 30th of September 2019.

***: p<0,01; **: p<0,05; *: p<0,1

$^{+++}$: $|d| \geq 0.8$; $^{++}$: $|d| \geq 0{,}5$; $^{+}$ $|d| \geq 0{,}2$

As can be seen in the regression table, the results generated from the experiment are surprisingly strong/clear. On average, the group that received the information via smartphone rates the *candidate traits* 0.82 points higher than the analogue group. Both the R-squared and the F-statistic indicate a strong, statistically significant effect.

The F-value of 6.51 surpasses the critical F-value for 1/18 degrees of freedom of 4.4139 at $\alpha = 0.05$ (Dinov 2019)[4]; a Cohen's d-value of 1.14 indicates a large effect

[3] Partly reduced font size due to format.

[4] Critical F values for 1/18 degrees of freedom at three significance levels:

$\alpha = 0.1$: 3.00698; $\alpha = 0.05$: 4.4139; $\alpha = 0.01$: 8.285 (Dinov 2019).

size. The negativity of the coefficient of the Cohen's d-value has no impact on the effect itself and can be neglected. Of the five sub-dimensions that compose the average *candidate trait*-value, three show significant differences compared to the analogue group. Individuals of the smartphone group rate Friederike Dostermann a more *competent*, more *charismatic* and more *approachable* candidate than participants of the analogue group. Both *reliability* and *general appeal* seem to have no significant difference between the groups. I will discuss the results in more depth in the following chapter. For now, I confirm **H1**: Smartphone-transmitted content indeed led to higher average approval ratings of *candidate traits*.

H2 hypothesized that smartphone-transmitted content would result in higher average evaluation of *political capital* of the candidate. *Political capital* subsumes the valuation of statements that describe political capabilities of the candidate. The participants were asked to rate the following statements on a seven-point scale with 1 denoted as 'complete disagreement' and 7 denoted as 'complete approval'.

I) Friederike Dostermann is a politician with whom I can relate. *(Identification)*
II) Friederike Dostermann will take care of the important issues. *(Trust)*
III) Friederike Dostermann is a charismatic person. *(Charisma)*

Note that the third statement asked for the same information assessed via the charisma-rating. There are two reasons for that. For one, the repeated assessment of charisma poses as a control for internal validation within the individual answers. Second, the framing of charisma within a politically connoted assessment enables the isolation of charisma as a political phenomenon when compared with values that derive from a question without a direct political connotation. The results from the analysis concerning **H2** are displayed in **table 9**.
Again, the results show a clear trend in favor of the hypothesis. On average, the smartphone group rated Friederike Dostermann 1.237 scale-points higher than the analogue group. Of the three dimensions that constitute the *mean political capital*-values, two show a significant impact on the variance between the two groups.

Table 9: Ratings for political capital

	Mean political capital	Political capital: *Identification*	Political capital: *Trust*	Political capital: *Charisma*
Smartphone	1.237***	1.2**	.7	1.9***
	(.36)	(.46)	(.52)	(.50)
Constant	3.933	3.7	4	4.1
	(.26)	(.32)	(.37)	(.36)
N:	20	20	20	20
R^2	0.3952	0.2748	0.0923	0.4408
Adj. R^2	0.3616	0.2345	0.0418	0.4097
F (ANOVA)	11.76^{***}	6.82^{**}	1.83	14.19^{***}
Cohen's d	-1.53^{+++}	-1.17^{+++}	$-.60^{++}$	-1.68^{+++}

The dependent variable is named in the top row of each column. *Italics* indicate categories that make up the values of mean political capital. The independent variable for all models is *Smartphone.* OLS- regression + analysis of variance for F-statistic (ANOVA), standard errors in parentheses. The Sample consists of individual laboratory data from 20 participants surveyed between 26th and the 30th of September 2019.

***: p<0,01; **: p<0,05; *: p<0,1

$^{+++}$: $|d| \geq 0.8$; $^{++}$: $|d| \geq 0,5$; $^{+}$ $|d| \geq 0,2$

While the model benevolence and the effect-size on average already are remarkably high, the most apparent difference between the smartphone and the analogue group is in their rating of *charisma*. Here, the smartphone group rates Friederike Dostermann 1.9 scale-points higher than the analogue group. The corresponding test-statistics point in the direction of a genuinely strong, highly significant effect that necessitates further discussion in the following chapter. Consequently, I confirm **H2**: Smartphone-transmitted content indeed led to a higher average evaluation of *political capital* of the candidate. The two hypotheses just analyzed were used to challenge the null-hypothesis that expected no difference in approval-ratings between the smartphone and the analogue group. Given that the information both groups received was identical,

and given that the entire decision-making situation was fictitious, the results from both groups should have been identically arbitrary or at least neutral if no effect derived from the stimulus.
Apparently, that is not the case. Both hypotheses assessing the alleged effect on individual information processing associated with decision-making showed how the smartphone group systematically expressed higher approval for the candidate across 5 out of 7 possible dimensions. On average, the difference was even more significant, showing a positive deviation for *candidate traits*, and *political capital*. What is remarkable is the size of the effect and its level of significance. The results are very clear and stable across a series of tests.

I therefore can reject the null-hypothesis and conclude: Smartphone-centered social media consumption produced *significantly different results* when asking participants to rate a fictitious candidate on a series of dimensions. Consequently, transposing information via smartphone affected the process of individual valuation of information in a political context. Whether or not it also alters human *decision-making* in terms of voting intention and corresponding outcome-measures will be assessed now.

H3 hypothesized that smartphone-transmitted content would result in better *election results* and a higher willingness to vote (*mobilization*) for the candidate. Under the influence/presence of the smartphone, the share of affective decision-making should rise (Bechara 2005, Ward et al. 2007, Wilmer/Chein 2016). Furthermore, *smartphone-dependency* and/or *nicotine* as a proxy measure for addictive behavior should amplify this effect (**H4**+**H5**). Subsequently, if the share of fast-paced affective decision-making rises, this should lead to quicker *reaction times* in the corresponding answers (**H6**). In order to assess *voting intention* and *mobilizing effects* (**H3**) and associated *reaction times* (**H6**) the participants were asked whether or not they would take part in the election (*voting intention*), and if so, if they would vote for Friederike Dostermann (*mobilization*). The time it took each participant to answer those questions was recorded in. the LimeSurvey software I used for the survey. The results from the corresponding hypotheses tests can be seen in **table 10**:

Table 10: Electoral behavior				
	Election result	Mobilization	Time Vote	Time mobilize
Smartphone	.3 (.21)	-.1 (.1)	-7.29* (3.78)	-.94 (2.22)
Constant	.5	1	16.73	12.02
N:	20	20	20	20
R^2	0.0989	0.0526	0.1714	0.098
Adj. R^2	0.0488	0.0000	0.1253	-0.0452
F (ANOVA)	1.98	1	3.72^{*}	0.18
Cohen's d	$-.63^{++}$	$.45^{+}$	$.86^{+++}$	.19

The dependent variable is named in the top row of each column. The independent variable for all models is *Smartphone.* OLS- regression + analysis of variance for F-statistic (ANOVA), standard errors in parentheses. The Sample consists of individual laboratory data from 20 participants surveyed between 26th and the 30th of September 2019.

***: p<0,01; **: p<0,05; *: p<0,1

$^{+++}$: $|d| \geq 0.8$; $^{++}$: $|d| \geq 0{,}5$; $^{+}$ $|d| \geq 0{,}2$

In contrast to the clarity of the previous results, the results for *voting intention* and *mobilization* are rather weak. No effect materializes between the two groups. Both *voting intention* and *mobilization* remain completely insignificant. I will discuss the implications of these findings in chapter 4.6 in more depth. For now, in view of these results, I reject **H3**: There is no evidence that the presence of the smartphone affected the outcome of the individual voting decisions. With regard to the decision-making *process,* the results provide little evidence for the smartphone affecting the cognitive *process* associated with the decision of voting.

The smartphone group reacted significantly quicker to the question of whether or not to vote for the candidate. On average, the smartphone group responded 7.286 seconds quicker to this question than the analogue group. While this result is in line with the theoretical argument and lends proof to the alleged causal mechanism between smartphone-centered communication and individual behavior, the result itself is neither a clear nor a strong advocate for a genuine effect: The low significance level

of p=0.1 and a corresponding F-statistic limit the expressive value of the result. In addition, in the analysis of answering time for the mobilization question, the effect did not materialize. The same holds true for additional tests I ran with answering-times for other questions in the questionnaire. The voting-question was the only question where a difference between the two groups was present. When calculating mean reaction times across all questions, no effect could be ascertained either. Following these findings, I reject H6. No sufficient increase in decision-making speed could be witnessed in the experiment.

For the analysis of the two remaining hypotheses, this leads to the following scenario: While the smartphone-group showed robust and statistically significant deviation in the valuation of information, no genuine change in individual decision-making could be isolated. Put differently, I found that participants who received information via their smartphone through Instagram valued the content of political information more positively. The results are robust and in line with the theoretical argument. However, neither the scope, nor the nature of the observed effect is clearly visible yet.

Henceforth, assessing potential drivers of the effect might explain more of the root causes and mechanisms associated with the observations of smartphone-related differences in the valuation of politically relevant information.

Following my theoretical argument of smartphone-related cognitive impairments **H4** and **H5** hypothesized, that higher *screen time* [**H4**] and *nicotine consumption* [**H5**] would amplify the effects that derive from the digital stimulus on the outcome measures. As outlined by Bechara (2005) and Kruger and Djerf (2007), addictive behavior would result in pharmacological impairments of cognitive capacities. If this was the case, then the findings just gathered concerning approval rates of the candidate across various dimensions, as also the willingness to vote and decision-making-times would increase under the influence of the additional predictor variables *smartphone dependency* and *nicotine consumption*.

I will thus run further analyzes to test for the potential effects that derive from smartphone dependency (denoted as daily *screen-time*) and addictive behavior (denoted as *nicotine consumption*). I will use the mean value across all eight dimensions associated with Friedererike Dostermann (*mean traits)*, the mean value for political capital traits (*mean political capital)* and the mean value for candidate traits

(*mean candidate traits)* as dependent variables. In addition, I will use the decision-making time regarding the voting decision (*time vote)* as dependent variable to control for changes in decision-making times. As independent variable, I will use the smartphone-dummy as the factor variable combined with the respective continuous variable *screentime_day* (daily minutes spent with ones smartphone) to account for interactions within and between the smartphone and analogue group. The results from the analyzes are in **table 11**.

Table 11: Amplification effects from smartphone usage

	Mean candidate Traits	Mean political capital	Mean traits	Time Vote
Screentime_day				
analogue group	-.004 (.003)	-.009*** (.003)	-.006** (.003)	.06* (.03)
smartphone group	.0000 (.002)	-.003 (.002)	-.001 (.002)	.01 (.02)
Constant	5.43	5.59	5.50	7.21
N: R^2 Adj. R^2 F (2, 17)	20 0.1910 0.0959 2.01	20 0.4035 0.3333 5.75**	20 0.3084 0.2271 3.79**	20 0.2613 0.1744 3.01*

The dependent variable is named in the top row of each column.

0 = analogue group

1 = smartphone group

Factor-variable analysis, standard errors in parentheses. The Sample consists of individual laboratory data from 20 participants surveyed between 26th and the 30th of September 2019.

***: p<0,01; **: p<0,05; *: p<0,1

As can be seen in **table 11**, the results from the analysis of the factor-variable vary in level of significance and model benevolence. Most notably, the coefficients for the analogue group (denoted 0) are negative which stands in contrast to the original hypothesis. Following my theoretical argument, an amplifying effect should have resulted in a significant and positive coefficient for the smartphone group (denoted 1). However, the actual results paint a different picture. I will explain the observed results using the example of *mean traits*.

Here the coefficient for the analogue group lies at -0.006 (rounded up). This translates to the following: For every additional minute of *screen-time*, the rating of *mean traits* decreases by 0.006 scale-points. Consequently, for every additional hour of *screen-time*, the *mean traits* rating decreases by 0.36 scale-points and so on. This leads to the following interpretation:

The more time an individual spends with his or her smartphone, the lower the average *mean trait* rating for Friederike Dostermann when the corresponding information was administered on paper. Smartphone dependency henceforth would not lead to higher approval for information within the smartphone environment, but for bigger disapproval for analogue information. The same trend materializes for *mean political capital*: Here, for every additional minute of screen-time, the approval decreased by 0.009 (rounded up) scale-points.

On the one hand, this interpretation creates a link between media-type and screen-dependency. On the other hand, the hypothesized effect of amplified smartphone-related rating increases did not materialize. In addition, the small N generally limits the quality of the results from the factor analysis. Consequently, I reject **H4**: Smartphone-dependency did not amplify the rating-differences between the analogue and the smartphone-group.

H5 hypothesized that nicotine-consumption as a proxy for addictive behavior would amplify the rating-differences between the analogue and the smartphone-group. A series of tests provided no results from the incorporation of nicotine consumption as an amplification which is why I will not provide detailed information on the hypothesis-test. The corresponding regression-table (**table 12**), however, is in the Appendix. 7

I will now summarize the results from the hypotheses-tests before discussing follow-up questions in the next chapter. Primarily, I can reject the null-hypothesis which expected no difference in approval-rates between the two groups: The smartphone-group rated Friedrike Dostermann significantly higher in 5 out of 8 categories and consequently showed deviating behavior from the analogue group.

The two biggest observed effects were in the realm of *charisma*. Both political charisma (+1.9 scale-points) and *charisma* without the political connotation (+1.3 scale-points) issued the biggest differences in approval from the smartphone over the analogue group. The third-largest effect was observed when assessing *identification* with the candidate (+1.2 scale points), followed by candidate *approachability* (+1.1 scale points). The smallest individual effect was observed in the valuation of *candidate competence* (+0.9 scale points). The individual dimensions *candidate reliability*, *general appeal*, as also *trust* showed no significant deviation between the smartphone and the control group. On average, the smartphone group rated the candidate 0.82 scale points higher when asked for *candidate traits* and 1.237 scale points higher when asked for *political capital*.

In contrast to the clarity of the results just summarized, the findings gathered from the additional hypotheses-tests were not in line with the theoretical argument: Neither a change in voting-intention, nor a genuine amplifying effect that derives from addictive behavior was ascertained. Even though the results from **H4** and **H6** showed traces of a genuine effect in tune with the theoretical argument, the results were neither strong nor convincing in terms of model benevolence and expressive value. With regard to the research question if smartphone-centered social media consumption affects and arguably alters human decision-making in a political context, this leads to the following interim-conclusion:

Yes, the results gathered in the laboratory experiment suggest, that smartphone-centered social media consumption affected human decision-making in such a manner as to affect approval ratings for the fictitious candidate. However, a genuine alternation of individual decision-making in the form of voting was not observed. I will now discuss the nature and the context of the presented results and limitations of the study, before closing this chapter with concluding remarks on the research question, its relevance and future research to enhance the findings presented here.

4.6 Discussion

Following the analysis of the presented data, two questions remain that need further discussion. First, what do the results imply for the research question? Second, how can the scope and level of significance of the valuation of the charisma-dimension be interpreted? I will discuss these questions before concluding remarks will answer the research question and close this chapter.

First, what do the results imply for the research question? As presented in the previous paragraph, the results from **H1-H2/H0** clearly show that individuals valued information differently when the corresponding information was received via smartphone. On the one hand, this observation is in tune with my theoretical argument of a neurologically induced shift in behavioral patterns associated with the formation of a political opinion. On the other hand, the hypothesized alternation of individual behavior in the form of political decision-making did not materialize. Additional tests controlling for age, gender or political sophistication neither changed the outcome, nor provided additional explanatory value to the nature of the observed effect.

Especially the analysis of smartphone usage patterns as a way of predicting and amplifying the effect that derived from smartphone-usage on individual behavior proved difficult. For one, the hypothesized amplification effect did not materialize. Furthermore, the results of the corresponding analysis showed no amplification effect in terms of increased ratings within the smartphone-group, but a discrimination-effect in the analogue group in relationship to individual smartphone usage-intensity. While the overall robustness of the results from this factor-related analysis suffers from the small sample size, this result necessitates additional research: If the discrimination-effect was replicated in a larger sample, then this would indicate a structural deficit in consuming analogue information by heavy smartphone-users.

Second, the corresponding results from **H1-H2/H0** need further discussion given the outstanding effect-size and robustness of the divergent evaluation of *charisma* between the two groups. Asked for in the context of political capabilities, *charisma* was rated 1.9 scale-points (+31.6%) higher in the smartphone group. Asked for in a more open context, the difference was still at a highly significant +1.3 scale-points (+21.6%). Again, I want to highlight, that the information both groups received was identical. There was no qualitative difference in the information given to the two

groups, and there was no possible way of substantially assessing the traits asked for. The answering scales were seven-point scales, with 1 denoting the worst and 7 denoting the best possible answer. Theoretically, a rational and deliberate answer to all the questions asked could have been the neutral value of 4.

This baseline-score contrasts the ratings issued by the two groups and hence could explain the nature of the observed effects. Pictured below in figure 4 is the answering behavior of the two groups for each *sub-dimension* and corresponding mean values in contrast to a neutral baseline-score of 4.

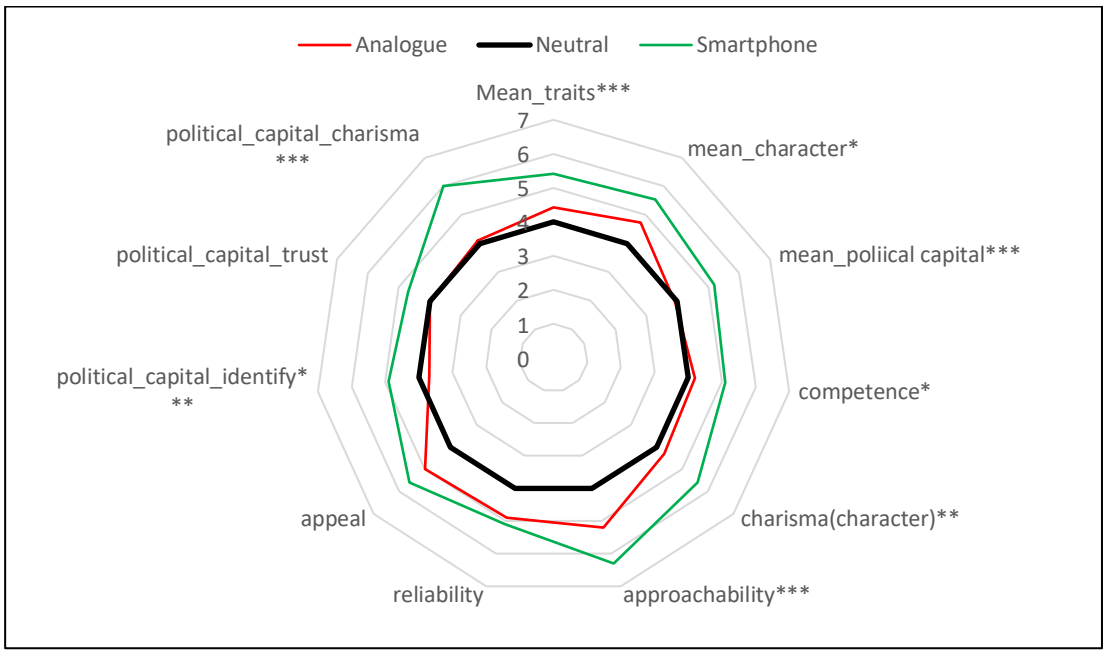


Figure 4: Mean values across all dimensions vs. neutral baseline

It is interesting to see how the ratings between the analogue and the digital group deviate from the neutral baseline-score. Apparently, the rating-difference between the two groups is highest in those sub-dimensions, where the analogue group issues a neutral rating of around 4. Those are charisma (*political_capital_charisma),* identification *(political_capital_identify),* competence (*competence)* and charisma without political connotation *(charisma(character)).* For the rating of *charisma*, *identification* and *competence*, one could argue that the analogue group behaves rational in terms of issuing a neutral rating which is in tune with the objective

information they received. The behavior of the smartphone-group on the other hand could be interpreted as affective given that there is no possible hint within the received information that would lead to a substantial shift from a neutral rating to a favorable rating of the candidate. The question thus remains *why* this happens.
One explanation for the observed effect could be that the delivery via smartphone might be perceived as a rapid and automated process, which operates without deliberation (System 1). As outlined by Kahneman (2011), the affective, fast-paced system 1 is "constantly making decisions based on *heuristics* that derive from subjective associations" (Hügelmann 2021, chapter 3). The environment of Instagram could favour this behavior as it may provide a familiar setting whereby the task is perceived. Consequently, increasing values in response to a subjective assessment-task make perfect sense as the task itself suggests affective, *heuristic* decision-making.

This is best explained using a specific example. Take the ratings for approachability (*approachability)*. Here we can see how both groups rate Friederike Dostermann higher than the neutral value of 4. The content of the stimulus elicits this outcome. Apparently, all participants in the sample attribute Friederike Dostermann with an above average amount of approachability. In addition, the presence of a smartphone-transmitted Instagram-Account apparently increases this notion of *approachability* when compared with corresponding information masked in analogue newspaper articles.
Now, let's switch to competence (*competence)* which denotes the perceived competence of the candidate. As can be seen, the rating of the analogue group is slightly above the neutral rating of 4 (group-mean 4.2), while the digital group rates *competence* at an average of 5.1. This deviation is the product of the following process: The question that the participants were asked to answer reads as follows: *"On a scale from 1 to 7, where 1 denotes the lowest and 7 denotes the highest possible score, how do you rate Friederike Dostermann in the following dimension: competence?"* The question arguably necessitates deliberate cognitive effort, as the assessment of competence theoretically facilitates an objective rating. What happens now could be the following:

Participants of both groups are faced with the same task of rating the competence of the candidate based on the information received prior to the task. Following my theoretical argument where after the presence of the smartphone affects cognitive capabilities of individuals, the smartphone-group takes the rating-task on an intuitive, heuristic approach, while the analogue group recourses to deliberate thinking in order to answer the task. The heuristic, fast-paced system-1 operation within the smartphone-group consequently leads to increased ratings whereas the analogue group gives a rational answer to the question.

The presence of social media profile hence acts as an anchor to guide the individual through the corresponding task. As individuals arguably consume contents on Instagram that carry positive attributes, there could well be a spill-over effect engaged in the evaluation of new information received via Instagram. The positive anchor associated with Instagram-usage hence affects the evaluation of the political candidate. Put differently, the interaction with a political candidate via smartphone-based social media increases the possibility of a fast-paced system-1 denoted valuation of the candidate in a corresponding evaluation-situation.

Given that political candidates present themselves on social media in "the ideal candidate frame" (Muñoz and Towner 2017, 290) the corresponding evaluation/rating increases. I argue that this effect materializes in the presented results and that this explains the significant increase in the *charisma*-ratings from the smartphone group.

To summarize: The results from the charisma-ratings indicate that the perception of charisma depends upon media type and presentation. Especially with regard to the functioning of Instagram, the artificial creation of visual imagery by a candidate could boost the perception of charisma by potential voters who follow the corresponding profile. Regarding the formation of a political opinion under the influence of digital communication however, these results paint a different picture. On the one hand, it is visible how digital communications and smartphone transmitted stimuli positively affect the evaluation of something as relevant for political figures as charisma. On the other hand, no change in political support through the act of voting materialized. This finding could be interpreted as follows: The information received via smartphone is processed on fast-paced system 1. This explains the increased ratings as outlined

above. However, when it comes to the important part of political decision-making i.e. voting, the decision-making process stays unaffected. Put differently: System 1 is in charge during the evaluation of misc. categories like charisma or approachability. System 2 on the other hand takes over when it comes to voting and corresponding decision-making.

Another explanation for the absence of any choice-related evidence could also lie in the binary nature of the voting variable. It would have been better not to ask for the act of voting itself, but to ask for political support on a more specific ratio scale. This would have visualized changes in individual support in relation to media type and stimuli.

4.7 Limitations

The aim of this chapter was to isolate a causal mechanism between smartphone-centered social media communications and individual behavior in a political context. The results presented are on the one hand robust and promising given the effect sizes and the clarity of the hypotheses-test of **H1**, **H2** and consequently **H0**. However, the study at hand holds a couple of limitations that narrow the results just discussed. First of all, the sample used in this study was a student sample and henceforth not representative by any means. Given that the task of this study was to isolate – if at all – a causal mechanism on individual level, participants were recruited to fit a certain pattern which provided the most promising results for the cause of the research. This excluded representability from design.

However, the student sample above all remains homogeneous in terms of education, to a certain extent social status and smartphone-usage. The participants in the sample interacted on average 192.45 minutes with their smartphones per day. In retrospect, a more divergent smartphone usage-pattern would potentially have increased the quality of the analysis. Furthermore, the recruited sample was very small. With only 20 participants the analysis could be more robust. However, for the hypotheses test **H1**, **H2** and **H0**, the sample size should not be a problem given that only one independent variable was used at the time for each analysis. Another limitation derives from the media-type for the smartphone-group. It made sense to use Instagram in the first place

as this creates a link to my previous work. Yet, one could argue that the change in media-appearance through the inclusion of a social network dilutes the original effect which derives from the smartphone. Henceforth, presenting the analogue treatment as a digital pdf-file or in any other neutral format via smartphone maybe would have been a better choice in terms of analytical rigidity.

To summarize, the results show a trend/pattern of how digital communications and corresponding individual behavior are intertwined with one another in the process of forming a political opinion and ultimately decision-making an. How this adds up to answering the research question will be discussed in the following paragraph.

4.8 Conclusion

This chapter takes a step toward isolating a causal mechanism between information-processing, campaigning-efforts and individual decision-making. I asked if smartphone-centered social media consumption affected and evidently altered human decision-making in a political context.

With reference to previous work by Stewart and Schubert on precognitive primes (2006) I argued that the presence of the smartphone and social media campaigning efforts could substantially alter the way how individuals perceive political information and how voting-decisions are made.

I showed that there are striking similarities between cognitive impairments of addicts and heavy smartphone users. Under the influence of dopamine-induced behavioral patterns the share of individual affective decision-making therefore could rise. I argued that the combination of smartphone-screens, neurologically addictive app-design and the ever-increasing mediatization of individuals (through social media) would alter decision-making patterns. A research design was presented that aimed at isolating a causal relationship between digital stimuli and individual decision-making within a survey-group that promised the greatest chance of success with regard to the theoretical preconditions outlined in the literature. The results painted a diverse picture of causes and effects from smartphone-transmitted social media communication on individual behavior. I showed how the usage of Instagram versus an analogue control group led participants to evaluate a fictitious political character significantly better

than their control. Friederike Dostermann received higher approval ratings on personality traits and political capital when respondents "met" her in the surrounding of her Instagram profile. However, neither an individual behavior-change in terms of voting, nor the hypothesized amplification effect that theoretically should have derived from heavy smartphone-usage or nicotine consumption materialized. While there were traces for fast-paced affective decision-making in the analyzed data, the results from the corresponding analysis were not sufficient to confirm the alleged effect.

There are two reasons that could explain this particular non-result at hand: For once, the non-result in terms of voting-decisions could indicate that system 2-related deliberate thinking (still) prevails over the fast-paced system 1-related heuristic decision-making when an individual is faced with the act of voting. As outlined by Kahneman (2011), system 2 accounts for those processes within our cognitive apparatus that "make deliberate choices between options. The automatic system 1 does not have these capabilities. System 1 detects simple relations [...] and excels at integrating information about one thing, but it does not deal with multiple distinct topics at once, nor is it adept at using purely statistical information (Kahneman 2011, 36)." Consequently, the observed rating-increase by the digital group could be system 1-related while the question of casting a vote "activates" deliberate system 2-thinking and hinders consequent affective decision-making.

The second reason for why I couldn't observe any change of individual action between the two groups could lie in the binary scale-level of the corresponding outcome variable. Having to choose between a vote/no-vote option could well absorb any change in political support induced by the digital stimulus. In other words: Even if political support as a precondition for casting a vote was (positively) affected by the digital stimulus, it could well be that the critical threshold for deciding to vote in favor of the candidate was not reached. This increased political support would henceforth not be measured by the binary voting-variable. A higher level of measurement consequently would have been the more precise outcome variable when analyzing predispositions of voting: Political support and willingness to vote. For answering the research-question, this leads to the following conclusion: Yes, smartphone-centered social media consumption affected human decision-making to the extent that individuals valued information differently when received via smartphone. No, human

decision-making was not altered given that no change in voting intention was measured. So, what does this imply for the broader context of political communications in a digital age and the alleged persuasion of voters through corresponding digital (advertisement) means?

Even though no direct change in voting behavior between the two groups could be measured, the findings have relevant implications for the understanding of how digital communications can be used within political campaigns to strategically mobilize/align potential voters. It would be interesting to see, how individual voting intention changes over time if the experiment would be repeated over the course of a longer time-period. This could be subject to a follow-up study. More importantly, future research would need to adapt the outcome variable to measure political support and willingness to vote on a corresponding ratio scale.

The findings furthermore underline how active social media usage can build the foundation for future political alignment and support between politicians and the electorate. Most notably in the realm of *charisma*, the difference between the two groups was biggest and most robust. But also the political *identification* with the candidate, as also *approachability* and *competence* proved significantly better when the information was conceived via smartphone. While the study cannot isolate a causal mechanism that proves how the smartphone-stimulus affected the act of voting, it was demonstrated how the presence of the smartphone and the corresponding social media account improved the relationship between the candidate and the electorate.

It hence remains subject to future research, if a direct causal relationship between social media usage and individual decision-making can be isolated. For the time being, and against the impression of small electoral margins I find it highly likely, that on aggregate level social media marketing within the political realm already exerts influence on the outcome of elections. The proof, however, still needs to be delivered.

5. Self-Marketing and Political Support. Evidence from Social Media, Experimental, and Survey-Data

5.1 Introduction

Previous work showed, how the utilization of smartphone-based social media altered the valuation of a fictitious political candidate in a laboratory experiment. Participants were asked to evaluate a candidate in various dimensions after having received corresponding information as a stimulus. When the information was transmitted via smartphone (delivery through Instagram), participants valued the fictitious candidate more charismatic, more accessible, more reliable and more competent opposing the analogue control group.

The results were in tune with a corresponding theoretical argument that linked dual process theory of thought (Kahneman 2011) with clinical evidence on smartphone-related cognitive impairments in decision-making situations and related tasks (Bechara 2005, Kruger and Djerf 2007, Wilmer and Chein 2016, Ward et al. 2017). These findings indicate, that the formation of a political opinion could be influenced by two factors:

First, with the advent of social media and the smartphone, the share of digital stimuli an individual receives on a daily basis dramatically increased. As evermore communication and information-processing is being done via smartphone, this draws questions on corresponding cognitive processes. There exist numerous studies to date that show, how the presence of the smartphone negatively affects both human cognition (Wilmer and Chein 2016) and attention span (Lorenz-Spreen et al. 2019). There is hence reason to assume that the transposal of content via smartphone significantly alters individual perception of corresponding information and thus affects decision-making in the long run.

Second, also due to the advent of social media and the smartphone, politicians can promote and market themselves in an unforeseen extent and scale. The creation and nurturing of a social media profile creates a direct link between politicians and potential voters. Especially on Instagram politicians find a plethora of tools to present themselves in the most favorable manner – That is: The image they want to create of

themselves by which they are perceived by their followers. This combination of deliberate and direct political self-marketing and smartphone-related cognitive impairments draws questions on the causes and effects of political will formation in a digital age. Especially for young and first-time voters, smartphone-centrist, direct political self-marketing indicates a fundamentally different starting point for the development of political convictions.

At this very moment, smartphone-centrist communications shape the collective perception of politics by an entire generation. At the same time, this perception is based on personalization, direct communication, new gatekeepers and the latent absence of journalistic classification. It thus stands to question, how this digital status-quo affects voters in general and first-time voters in particular, and how individuals develop and exert political support, when the share of digital information-processing and political self-marketing increases.

Given that ever more politicians pursuit social media with significant and continuous effort irrespective of campaign-seasons, the consequences of deliberate self-marketing necessitate further assessment. This leads to at least two questions: *First*, which role does personalized social media play in the formation of a political opinion? *Second*, does personalized social media alter individual decision-making in a political context? The current chapter seeks to address these questions in four steps:

First, I will develop a theoretical argument that modulates the formation of a political opinion by the use of a marketing-funnel approach. By applying proven concepts from online-marketing and individual behavior to the realm of political communications I will present a contemporary approach for modelling political self-marketing techniques and its corresponding effect on citizens. As I will argue this will contribute to better understand the role of personalized social media in political communications and hence political will formation in a digital environment.

In a *second* step I will present evidence to validate my theoretical argument. I will therefore provide exemplary data that comprises of social media and google search index-data. I will show, how political Instagram profiles grow under the influence of public attention and how this indicates individual user-behavior in accordance with my theoretical argument.

In a *third* step, I will further validate my theoretical argument by providing insights from a quasi-experiment on social media and individual information processing. In a *fourth* and final step I will present evidence from GLES survey-data to transfer the experimental findings into representative data.

The present chapter is thus a proof of concept for the alleged causal relationship between political self-marketing, and individual assessment of the corresponding input. Consequently, the overarching research-question of this chapter reads as follows:

Does political self-marketing (positively) affect the individual notion of politicians by potential voters and how does this happen?

5.2 Theory

The scope of political self-marketing and personalization is unprecedented. Never before had politicians so many possibilities to present themselves and their political ideas to potential voters. Most notably social media and with it the omnipresence of the smartphone fundamentally altered the public sphere and hence the rules of the game for political communication. As of April 2020, according to the Reuters Digital News Report (DNR), the "smartphone has overtaken the computer as the main access-point for news" (Newman et al. 2020, 71) in Germany. A share of 58% of the German population consumes news via smartphone, opposing 49% on computer. For 2020 the DNR sees social media as a source for news overtake print media for the first time. These figures illustrate the extent of the change in media usage behavior that has occurred due to digitalization. For political communications, this digital transformation of the media landscape changed two things.

First, political actors gained access to countless new ways of directly emitting content and messages to different target audiences. This advent of online communication both shifted and diluted the boundary between public and private communication (Schemer und Geiß 2020, 158).

Second, the possibility of direct peer-to-peer communication diminished the influence of former gatekeepers like journalists. Prior to digitalization, journalists would review messages emitted by political actors. The process of journalistic processing would

ultimately alter the original messages, at last through the creation of context (Raabe 2018, 167). In digitalized media-systems, political actors can address the public directly and thus circumvent the journalistic gate. Social media provides a plethora of channels and tools to do so (Eberl and Boomgaarden 2020, 165-166). As a direct consequence, ever more politicians choose to constantly present themselves on social media in order to create an own community of followers.

This is an act of deliberate self-marketing which increases the share of personalized messages that potential voters consume in the process of opinion-formation. Political self-marketing consequently has become a significant part of public discourse in general, and in the digital public sphere in particular. Take State Minister for Digitization Dorothee Bär or chairman of the German Green party Robert Habeck as examples.

On their Instagram feeds both share personal insights into who they 'are'. The present themselves supporting a regional football club (Dorothee Bär) or shaving in front of a chair (Robert Habeck). However, both posts are acts of deliberate self-presentation as they otherwise would not have been uploaded in the first place. Consequently, both politicians make use of the Instagram-environment by presenting themselves in a 'personal' fashion to their followers. Instagram plays a special role here, as the platform incentivizes self-marketing like hardly any other.

Figure 5: Screenshot Instagram profile Dorothee Bär: Ms Bär celebrating football

Figure 6: Screenshot Instagram profile Robert Habeck: Mr Habeck shaving in the sun

5.2.1 Political communication on Instagram

The image-sharing platform has witnessed a mere surge of attention by members of parliament in Germany over the current legislative period. Prior to the last federal election of 2017, roughly 48% of the successful candidates had Instagram-Accounts (Hügelmann 2021, chapter 3). As of today, this share has risen to approximately 80%. The platform itself has more than 500 million daily active users worldwide, more than 65% are "aged 34 years or younger. In view of its visual nature, Instagram is per se a suitable platform for candidates' visual self-presentation and may be used to address young voters" as Steffan (2020, 3101) outlines. But besides addressing young voters are numerous reasons why Instagram has gained attention from politicians: Be it freeriding active online-communities (Sylvester 2012), to "broadcast election messages, to mobilize supporters, to manage the party's image, and to amplify and complement other campaign material" (Filimonov et al. 2016, 3) or the possibility to address different target audiences (Liebhart and Bernhardt 2017, Kreiss 2016). Eckerl and Hahn (2018) furthermore isolate personal interest and a positive community spirit as one of the key factors that motivated politicians to use Instagram in the 2017 German Federal Election campaign.

As I argue, all of the arguments above are subsumed under the following core principle: Instagram enables its users better than any other social media platform to create a personal brand (Peters 1997, Aaker 1997). As I will show, this increases the efficacy of political marketing significantly.

Olins (2003) defines a brand as "a symbolic embodiment of all the information connected to a company, product or service" (Olins 2003, cited in Harris and Rae 2011, 16). A *personal* brand subsumes the efforts that individuals apply in the pursuit of marketing *themselves* to society (Johnson 2017, 21).

For Aaker (2012) "every person has a brand, represented by a name and face that has a host of associated characteristics, such as: professional skills and assets, career paths, communication styles, appearance, personalities, interests, activities, friends, family and more. The brand influences all relationships by affecting how a person is perceived and whether he or she is liked and respected. The 'personal brand' can be actively

managed with disciple and consistency over time, or it can be allowed to drift." (Aaker 2012) In political science, this concept of personal branding has not been applied yet. While the personalization of electoral campaigns and voting decisions is of course a prominent field of study within electoral research, its focus lies in the assessment of candidate traits in relation to candidate success. Personal branding on the other hand focuses on the act of image creation itself that is performed by the candidates in order to increase electoral success. I will get into differences and similarities between commercial and political branding activities later on. For now, I note that Instagram enables its users to create an artificial i.e. *branded* version of themselves, personas, so to speak. And politicians – as shown at the example of Dorothee Bär and Robert Habeck – make use of corresponding techniques: Studies by Muñoz and Towner (2017) and Voigt et al. (2017) outlined that politicians most frequently employ an ideal candidate frame in their images on Instagram.

The concept of the ideal candidate frame goes back to a study by Grabe and Bucy who analyzed the visual coverage of U.S. presidential election campaigns between 1992 and 2004. In doing so, the authors identified three visual frames used by the observed candidates: the ideal candidate, the populist campaigner, and the sure loser (Steffan 2020, 3100). "The ideal candidate frame refers to characteristics that are crucial for the exercise of the office and consists of two dimensions: statesmanship and compassion." (ibid.)

The depiction as a statesman and as a compassionate leader was based on the candidates' assumption that voters would have "a mental picture of specific characteristics that an ideal presidential candidate should have" (Grabe and Bucy 2009, 102; cited in Steffan 2020, 3100). Put differently: the visual appearance of political candidates shapes the electorates' perception of the candidates' eligibility to hold public office. As the conception of eligibility is inherently connected to the evaluation of competence i.e. "intelligence, leadership, and competence per se" (Antonakis and Dalgas 2009, 1183), the voters' notion of competence consequently is related to the image political actors maintain of themselves. This theoretically suggests that self-branding could have a major impact on the individual perception of political competence and ultimately decision-making in the context of voting.

5.2.2 Increasing contact, creating an image: The politicians' side

Self-branding can be defined as the capturing and promoting of an individual's "strengths and uniqueness to a target audience" (Kaputa 2005, 8; cited in Labrecque et al. 2011, 39). A central aspect within the process of self-branding is hence the creation and nurturing of a distinctive image. This process is congruent to political marketing and public relations (Herbers 2018, 322). Especially in electoral campaigns, political candidates ever since embraced methods of personalization to create compelling imagery or other assets relevant to the success of their campaigns. Under the influence of social media in general, and Instagram in particular, this process of political (self)-marketing has changed in three ways.

First, social media alters the incentive for politicians to engage with online communities through direct communication. As the sender exerts total control over the messages he or she wants to emit, social media furthers active communication with potential voters outside of campaign-season (Pontzen 2013, 147). Research interest on how politicians make use of these possibilities has increased over the past years. Studies by Farci and Orefice (2015) or Liebhart and Bernhardt (2017) find, how candidates use visual self-presentation in social media for self-promotion and the crafting of a self (Farci and Orefice 2015) or how political candidates use Instagram to "visually present themselves as legitimate office holders." (Steffan 2020, 3) In addition, social media simplifies the act of communication between political actors and the electorate (Eckerl and Hahn 2018, 255). Both aspects lead to an increasing amount of political messaging within social media and the corresponding media-diets on individual voter level.

Second, social media in general and Instagram in particular dilutes the boundary between advertisement and public relations (PR). As a consequence, the share of communication for promotional purpose increases. Advertisement on the one hand subsumes non-personal communication that is transmitted in exchange for money by third-party media. PR on the other hand includes efforts to influence the public or relevant target-audiences through the self-presentation of interests (Donges and Jarren 2017, 143). More specifically PR subsumes the strategic, selective and specific disposal of information. PR is intended to draw attention to certain actors, events,

problems or problem solutions, and vice versa to distract attention from negative events or processes (Donges and Jarren 2017, 145). While advertisement creates media exposure in exchange for money, PR creates media exposure through addressing journalists and other media-actors via press releases or the creation of newsworthy events. Social media henceforth combines advertisement and PR at it produces messages and imagery that normatively would fall into the realm of PR but which on the other hand can be used within professional social media marketing campaigns in the respective networks. This applies particularly to Instagram.

Here, profile-holders have the possibility to take single posts they uploaded to their profile and transfer them into a piece of paid advertisement within a corresponding marketing campaign. These so called 'sponsored posts' look like regular Instagram-posts but are displayed in exchange for money to whatever target-audience the profile-holder wants to reach.

In other words, Instagram enables political actors to take a piece of – say – personalized imagery that follows the ideal candidate frame from the respective profiles' feed and present it to a clearly defined target-audience within Instagram who otherwise would have not seen the content-piece. So basically, a piece of PR is taken and turned into a piece of advertising. This leads to an increased share of promotional messages emitted towards the electorate and poses a direct gateway for personalized messages and self-branding measures within political marketing campaigns.

It is therefore *third*, that Instagram in contrast to other social media holds a unique spot in the media-mix and content-distribution of political actors. In PR, content distribution is separated into four categories that account for the way how a given topic reached media exposure. There exist different approaches for categorizing media-types but the so-called PESO-model is arguably the most prominent and accomplished one as its being used both by practitioners (Auler and Huberty 2019) and in academia (Lovett and Staelin 2016; Elving and Postma 2017) alike. PESO is an acronym that summarizes four categories of media-exposure, namely *paid*, *earned*, *shared* and *owned* media (Macnamara et al. 2016; Auler and Huberty 2019, 30).

Paid media is media exposure that is given in exchange for money (Fröhlich 2018, 114). Typical forms are display and banner ads, advertorials and related. *Earned media* however subsumes coverage that comes about in the absence of media spending. To give a practical example, every newsworthy mention of a politician in the evening news can be labeled *earned media*. *Shared media* refers to every form of publicity that can be shared as in social media. Last but not least, *owned media* includes every way of self-publishing. Be it a blog, a newsletter, a website or other related outfits. *Owned media* is *owned* by the originator in the way that no other entity has influence on the content of *owned media*.

As a hybrid between *owned* and *shared* media, social media generally derives its uniqueness from both media types it accompanies: *Owned* media because in social media, the speaker is in total control of his own messaging. And *shared* media, because other users can share the content-pieces they find in social media and hence increase the audience reach of the corresponding message. However, compared to the other politically relevant social networks Facebook and Twitter, Instagram is the most *owned* media of them all, as its design does not encourage wide and open discussions for other users to see in the comment section below a content-piece.

This detail is important as it explains why researchers like Eckerl and Hahn (2018) report in their survey how politicians praise Instagrams' tender atmosphere: The way how users interact with one another on Instagram does not spark controversial or ill-mannered discussion with non-followers given that they don't 'see' content from non-followed profiles in their newsfeed, irrespective of third parties. Furthermore, due to the increased usage of the 'story' function, the disposal of content on Instagram has further shifted from an open to a closed broadcasting format.

Instagram stories are a vital part of the platform. Stories are series of pictures and videos the profile holder uploads to a separate scheme and thereby creating a 'story' of the profile holders' daily routine. After 24 hours, the content disappears. Especially social media personalities like influencers use the story-function to speak directly to their followers. And many politicians follow in their wake.

Both the tender atmosphere and the possibility to communicate directly increase the relevance of the channel for political communication as it facilitates/unburdens the initial involvement with politics. „The image service can score points, particularly when it comes to reducing inaccessibility and building personal brands" as Eckerl and Hahn conclude (2018, 255).

To summarize, social media in general and Instagram in particular provide political actors with both the possibility to create a digital self-portrait that is perfectly suited for emitting personalized and promotional messages at the direction of the electorate. It is therefore that the notion of competence on voter level is subject to self-marketing and the framing as an ideal candidate. On Instagram, this leads to the creation of mostly positive communities that are built around a distinctive aesthetic and a high degree of personalized imagery and messaging. It thus stands to question, how this change of style in political communication affects individual notions of politicians and hence decision-making.

5.2.3 The logic of affective decision-heuristics: The voters' side

It is well documented how voters rely on informational shortcuts, cues and heuristics in political decision-making (Lodge and Stroh 1993; Lupia and McCubbins 1998; Popkin 1994; cited in Hardy 2018, 5). As Hardy (2018) put it, visual cues like candidate traits are "particularly useful heuristics because they are relatively easy to assess compared to intricate policy positions" (Hardy 2018, 5). In addition, candidate traits would "offer an appealing shortcut for citizens to evaluate candidates on their performances without having to invest considerable time and energy into following public affairs or uncovering candidate issues" (Funk, 1996, 97; cited in Hardy 2018, 5). Referring to various authors, Hardy outlines how voters would use candidate traits "as a relatively inexpensive way to gain information about the candidates and simplify vote decisions." (Hardy 2018, 5)

The proportion of the influence deriving from visual cues on the overall decision-making process can hardly be isolated. However, several studies have shown how even the face of politicians alone influenced people's voting decisions: Antonakis and Dalgas (2009) showed in two experiments, how children and adults predicted actual

election outcomes only from judging pairs of faces. Adults were asked to say who of both faces looked more competent; children were asked whom they would prefer to have as captain on their boat. The pairs to choose from consisted of pictures of the winner and runner-up from the 2002 French parliamentary election (Antonakis and Dalgas 2009). By choosing either a more competent person or the 'captain of your boat', both adults and children predicted the actual winner in the corresponding pairs. "Evidently, young children, who are less experienced than are adults in observing performance in complex domains, playing an innocuous game can predict election results retrospectively." (ibid. 2009, 1183)

Apparently, the anchor of the first impression stuck with adult voters as with children on their decision-making task. One could conclude that voters are using the same basic decision-making heuristic that children use in comparable tasks (Antonakis and Dalgas 2009, 1183). "These findings suggest that voters are not appropriately weighting performance-based information on political candidates when undertaking one of democracy's most important civic duties", as Antonakis and Dalgas conclude their findings. (1183) Todorov et al. (2005) showed "that inferences of competence based solely on facial appearance predicted the outcomes of U.S. congressional elections better than chance (e.g. 68.8% of the Senate races in 2004) and also were linearly related to the margin of victory. [...] The findings suggest that rapid, unreflective trait inferences can contribute to voting choices which are widely assumed to be based primarily on rational and deliberative considerations." (Todorov et al. 2005, 1623)

An experimental study on individual decision-making showed how branding directly affected the neural process associated with decision-making: Analyzing the psychological mechanisms associated with branding in decision-making tasks, Philiastides and Ratcliff (2013) find that "branding information and subjective preference are integrated into a single source of evidence in the decision-making process, thereby altering choice behavior." (1208) With regard to personalization in social media, McGregor (2018) showed how personalization fosters a "sense of intimacy with the public figure" (Mc Gregor 2018, 1156) who is emitting personalized content at the direction of the electorate. "An electorate who feels connected, particularly if they feel the candidate is speaking to them (via social media), may be

more likely to act on behalf of the candidate." (Mc Gregor 2018, 1156) Corresponding social media strategies could "evoke feelings of mediated yet intimate relationships with the public, which in turn lead to increased support for the candidate." (ibid.) Remember that Instagram provides politicians with this exact feature.

Now, what happens if a first time or undecided voters' first point of contact with a political candidate is on Instagram, where the candidate presents him or herself in the best possible manner? This is on the one hand a rhetorical question. On the other hand, this line of thinking leads to the research-leading assumption of this chapter and its corresponding proof of concept: Self-branding on Instagram positively affects the individual notion of politicians and henceforth facilitates political support. In order to test this, I will now do the following:

I will adapt the theoretical concept of the marketing funnel to political communications. By doing so I will provide a theoretical framework that explains, why self-branding could positively affect the individual perception of politicians. This will hence answer the question of the role that personalized social media plays in the formation a political opinion. In a consequent step, I will cultivate the corresponding argument by empirically testing the hypothesis in a quasi-experiment. In a subsequent step, I will adapt the findings to representative survey data to increase the scope of the findings. I will therefore now introduce the concept of the marketing funnel before demonstrating Instagram's role within political communications during the outbreak of the corona pandemic in Germany on state level.

5.2.4 The funnel that is rather a journey

Here's my current situation: I am a white, heterosexual male in my thirties who lives in one of the big German cities in an urban neighborhood. Me and my partner want to have kids someday, but not immediately. Why is this personal information relevant for this chapter? Because it matters for the argument I am about to make: I am aware of my personal situation and you, dear reader, are now aware of this, too. But there is a third entity that obtains some of this information about me, namely online marketers. Every Internet user leaves digital trace data that contains personal information about the corresponding individual. Search-requests, likes and shares on social media or

buying habits only are the most prominent examples of online trace-data. And this data is being used in online marketing (Oliver and Vayre 2015, 7). Which is why a little while ago I started seeing advertising for *diapers* in my online media diet. Be it on Facebook, related to a Google-search or on YouTube. Statistically, I fit the demographic segment that has kids or is about to have kids. From a marketing perspective, it consequently makes perfect sense to target me, because: If everything goes to plan, I will sooner or later be in a situation where I will have to choose between *diaper A* and *diaper B*. And if the marketers for *diaper A* got their job right, I will most likely choose their product. In the end, the *brand* will help me take this decision over two otherwise identical products (Philiastides and Ratcliff 2013, 1208).

The rational that underlies these online marketing and advertisement strategies could help to further explain how personalized social media affects individual decision-making on the voter side.

The following two conditions apply to the voter or how he or she is mainly considered in this chapter: In order to plausibly assume an influence on individual behavior in the context of social media and related marketing-patters, two things are necessary conditions. The individual should have some interest in politics and should have no party ties or related political preferences. It is well documented how interest in politics and party-ties are lowest among the group of young-voters.

For the case of Germany, the cohort between 21 and 30 years of age historically has been the voter segment with the lowest turnout on federal level (BPB 2013). In addition, both first-time and young voters show a particularly close proximity to smartphones and digitalization phenomena. It can therefore be assumed that the behavior and usage patterns in those areas of (digital) everyday-life have an impact on the formation of political preferences. In this chapter, therefore, I am assuming the voter to be a somehow interested individual who is characterized by a low level of political sophistication and high smartphone-usage intensity. With that out of the way, I can now turn to the question of how digital marketing and advertisement could explain social-media related effects on the formation of a political opinion and ultimately decision-making. And here is how: In commercial terms, "advertising

generates revenue by inducing a costumer to begin the purchase process at a particular firm and helping him or her progress through the firm's purchase funnel until a product or service is finally purchased." (E. de Haan et al. 2015, 493) What's central here is the concept of the purchasing or marketing funnel. The marketing funnel is a framework that guides a potential costumer through different stages. From interest over engagement to the act of purchasing itself. It follows the underlying idea that marketing has the ability to nudge individuals in a certain direction and that this process consists of certain touchpoints. Those touchpoints are valuable to the marketing/sales-campaign as they provide a specific moment where the marketer can pro-actively exert influence on his target audience.

The concept of touchpoints arose in the 1980s (Jenkinson 2007) and refers to a "point or moment of contact/communication between an organization or brand and an individual consumer or stakeholder." (ibid., 165) Or as a study by McKinsey put it: "People form impressions of brands from touchpoints such as advertisement, news reports, conversations with family and friends and product experience." (Court et al. 2009)

Consequently, whether or not an individual takes a purchasing decision depends to a certain extent upon the quantity and quality of the touchpoints the individual faces during his or her decision-making process. However, with an ever more diversified and personalized media landscape, the linearity that underlies the original funnel-theorem is hardly given anymore (Court et al. 2009). Studies that are more recent have begun labelling the process as a costumer/marketing *journey*. One of the main conceptual differences is the inclusion of concurrency that underlies and affects the online buyer decision-making process (ibid.).

This *journey* is by no means linear but resembles an iterative scheme that consists of various research-loops during a phase of consideration before the initial purchase is made. "The consumer decision journey is structured in loops, representing consideration, enjoyment, and loyalty (different authors may use other terms). The model of a consumer journey appreciates the fact that todays' consumers have many options, and many of them may get into the picture during the evaluation phase, hence

creating a far more dynamic and agile process than traditional funnels", as Braun and Garriga (2018, 664) put it. This theoretical approach can be applied to the formation of a political opinion under the influence of digitalization. There are three reasons why.

First, many western democracies more recently pass through a dealignment process: parties lose base-voters and the electorate becomes more volatile. For the case of Germany, Dalton (2014) finds that "a generational decline in partisanship is contributing to this dealignment trend, and virtually all of the new independents are more sophisticated apartisans who are politically engaged even though they lack party ties." (Dalton 2014, 134)

Second, while traditional parties suffer from weakened ties, new and often right-wing populist parties emerge with significant speed and efficacy. A prominent example is the Alternative für Deutschland (AfD) in Germany. The AfD gained a massive following in the wake of the so-called Refugee-Crisis of 2015 and some scholars have attributed this electoral success partly to the AfDs extensive use of social media (Schumann et al. 2019; Serrano et al. 2019).

Third, a new phenotype of politician emerged in the wake of personalization and social media: Both Emmanuel Macron and Sebastian Kurz – to give only two examples – crafted a personal brand around their take on politics. In doing so they both circumvented traditional party politics and corresponding ties which enabled them to appeal to a broader audience.

In view of these three arguments, modelling the process of political will-formation and decision-making as an iterative scheme similar to consumer-habits appears plausible. Furthermore, especially young and first-time voters already have been shaped by digital consumer-habits. First-time voters who will be aged 18 in the German Federal Election of 2021 have grown up under the omnipresence of the smartphone, social media and extensive anywhere/anytime consumption of goods and services.
It hence seems likely that decision-making patterns adapted in the commercial/everyday- world are cognitively applied to the formation of a political opinion. As I will show, social media acts as a hinge between the initially interested

and politics by creating a central touchpoint within a digital marketing funnel. The contact made via the touchpoint (personalized and direct communication in the absence of journalistic classification) arguably affects the individuals' notion of the respective politician and henceforth could affect the initial voting-intention.

5.2.5 The role of personalized social media for political will-formation

Transferred to the realm of politics, a marketing funnel then would look like this: A (media) event initiates interest in a certain politician. Following this impulse, the individual translates the interest into his or her media-routine. For many fist-time and young voters, Instagram is a substantial part of their media-diet. Consequently, the app is opened and the name of the politician is entered into the search bar. Once the profile pops up, a first touchpoint between a politician and an interested individual is created.

Even though there exists no reliable data on the *intention* behind the act of following a social media profile, it is absolutely plausible that the act of becoming a *follower* prompts a positive attribute towards the profile. It is therefore that new followers could well be future (political) supporters of the respective politician.

And there is evidence, that (German) citizens show this exact behavior as I will demonstrate at the example of North Rhine-Westphalia's Prime Minister, Armin Laschet, and Bavaria's Prime Minister, Dr. Markus Söder. Due to Germany's federal organizing principle, the federal heads of state-government became key-figures during the initial outbreak of the Corona-crisis in the spring of 2020. This resulted in increased media-attention and therefore public interest. Both Mr. Laschet and Mr. Söder hence were subject to extensive news coverage in Germany, mostly because of their style of handling the crisis while simultaneously using crisis-prevention for inner-party campaigning.

In order to analyze how this increased media attention would affect their social media, I scraped both profiles during the Corona-lockdown in Germany. It was furthermore to analyze how both federal heads of state-government would use their Instagram-channel for crisis-communication. The data-collection took place between the 22nd of

April and the 20th of May 2020. I focused on the number of followers in order to calculate daily growth-rates. In addition, I downloaded Google-Trends (GT) data to combine the Instagram-growth data with Google-search volume.

Being a normalized index, the GT data does not provide absolute numbers of search-requests, but the relative popularity of search-requests over geography and time-range. "The resulting numbers are then scaled on a range of 0 to 100 based on a topic's proportion to all searches on all topics." (Google Trends FAQ 2020) Given that the Google search engine dominates the market with an approximate search traffic share of 90% of all internet search-requests (as of 2016), it provides a sound data-basis to draw general implications from (Dinis et al. 2016, 67).

I use the GT data as a proxy-measure for public interest. Numerous studies used GT in a similar way before (Funk and Rusowsky 2014; Nghiem et al. 2016; Dinis et al. 2016). The rationale behind this proxy-measure is as follows: If the GT data shows an increased search-volume, then this indicates an increased interest in the given topic. Following the funnel-theorem, this increased interest translates into the individual media-diets and results in increasing Instagram channel-growth. Pictured on the following page are the growth rates of the Instagram profiles of Armin Laschet and Markus Söder between the 22nd of April and the 20th of May 2020.

The blue line indicates daily growth of the respective Instagram profile in percent (right y-axis). The orange line indicates nation-wide Google-Search volume, reported on the Google Trend index with zero denoting the least and 100 the biggest search volume respectively (left y-axis). The x-axis shows the time by day.

As can be seen in the plots, both profiles show excessive growth rates at a certain date. These peaks in the plots result from two public announcements by the profile-holders: On the 5th of May 2020, Markus Söder presented measures to loosen Corona-restrictions for Bavaria (Bayern.de 2020).

On the 6th of May 2020, Armin Laschet presented his measures to loosen Corona-restrictions for Northrhine-Westphalia (land.nrw 2020). Both events triggered nation-wide interest in both political figures due to the momentousness, which was attributed to the state's future handling of the Corona-crisis. As seen in the data-plots, there is a correlation between Google search volume and profile growth. Results from a respective times-series regression (**table 13** on page 121) show a statistically

significant, strong correlation between Google search volume and Instagram profile growth. An increased search-volume (and hence public interest) leads to increased Instagram-channel growth. For the profiles of Dr. Markus Söder and Armin Laschet an increase of 1% Google-Trends index facilitates 0.01% profile growth on Instagram.

The observed link between public interest and Instagram profile growth might appear marginal at first. However, as can be seen on the trend lines in figure 7 and figure 8, Google search volume changes in relatively pronounced amplitudes. In this respect, the percental increase is less relevant than the general observation of a correlation between Google Trends and the growth of Instagram profiles. The results indicate that Instagram could in deed function as a touchpoint and that the observed user-behavior suggests behavioral patterns comparable to consumer decision-making.

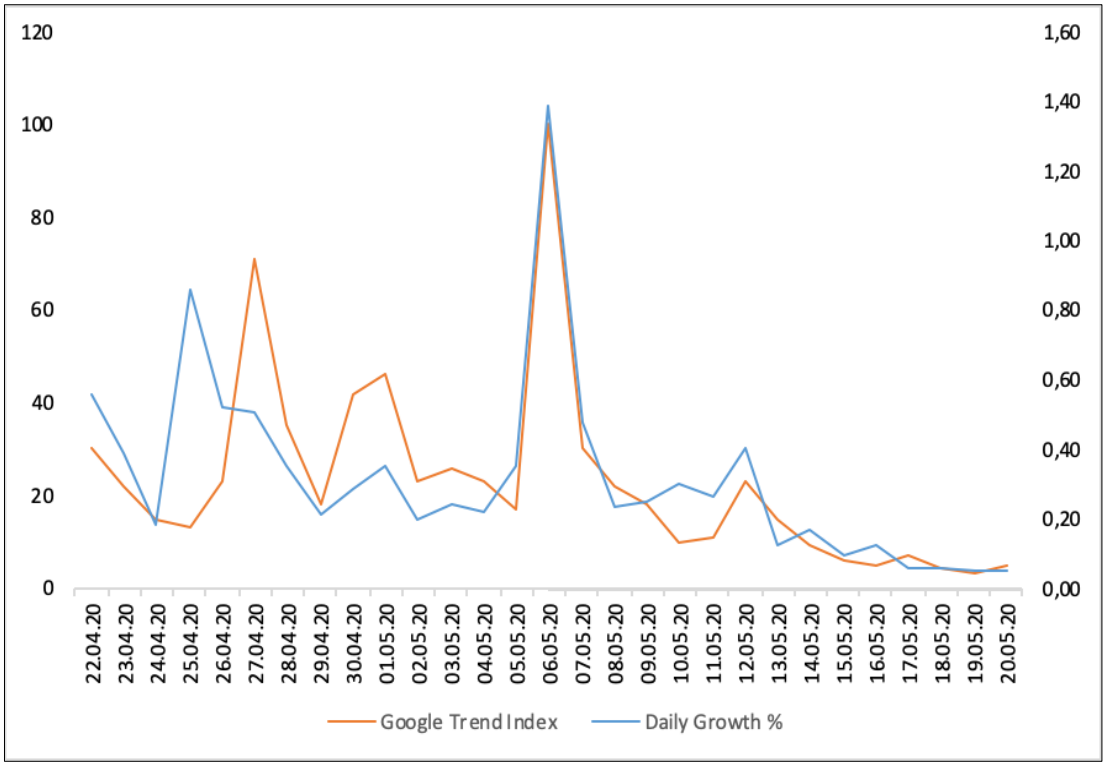


Figure 7: Instagram profile growth: Armin Laschet

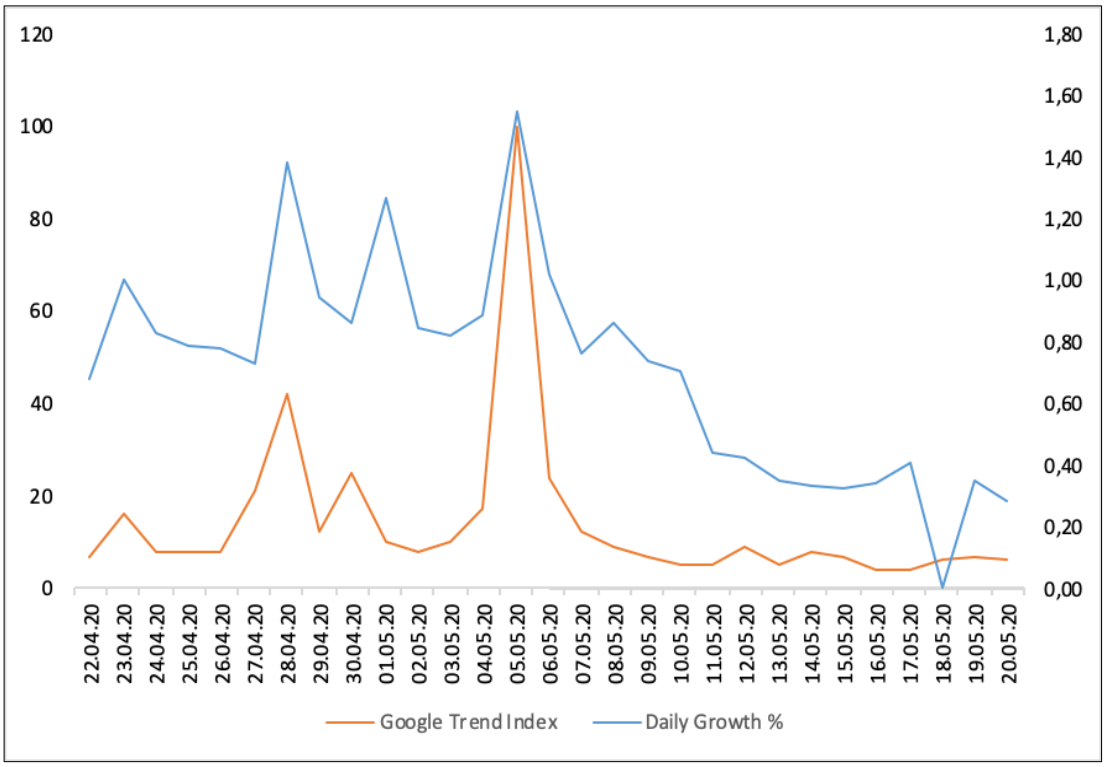


Figure 8: Instagram profile growth: Dr. Markus Söder

These findings consequently underline the strategic importance associated with the nurturing of an Instagram-account as they show how a touchpoint is created. The individuals who proactively search for the respective profiles arguably come with the best intentions or at least with unbiased interest. If the individuals like what they see on the profile, they stay and might become a follower. If the content does not appeal, they don't follow and leave. This decision is made within (milli)seconds (Lindgaard et al. 2006) which is why adapting to the expectations of the platforms' community is crucial for success and why this touchpoint is so valuable.

If an individual decides to stay and to become a follower, then a direct link is created between the profile holder and a potential political supporter. By applying personal branding strategies, the profile holder then can exert influence on the individual by presenting him/herself in the best possible manner. Or to stay in the funnel-analogy: Winning a new follower creates revenue, that is: a communicative lead.

***Table 13*:** Effect on Instagram profile growth induced by Google search volume	
	Daily Instagram Growth Markus Söder + Armin Laschet
Google-Trend Index	.01*** (.002)
Constant	.307 (.042)
Profiles: Days: n= R^2 within R^2 between R^2 overall F (1,55)	2 29 58 0.4878 1.0000 0.2040 52,38***
The dependent variable is daily profile growth of the Instagram profiles by Dr. Markus Söder and Armin Laschet. Panel data. GLS- regression, fixed effects, standard errors in parentheses. ***: p<0,01; **: p<0,05; *: p<0,1	

5.2.6 It's the brand that makes the difference

As outlined above, commercial advertisement aims at inducing a process on individual level at the end of which the individual fulfills a certain action; that is: the purchase. In politics, advertisement follows three goals, namely: the activation, reinforcement and conversion of certain target-audiences i.e. voter-groups (Eberl and Boomgaarden 2020, 169). Political advertisement consequently aims to influence the attitudes, values and behavior of the addressees in the interest of the advertiser (Podschuweit 2016, 636). Political advertisement is henceforth comparable to commercial advertisement as both branches subsume communicative techniques to achieve a certain goal and a certain action on individual level.

However, the advertised ‘products’ differ significantly. Amongst a plethora of nuanced differences, one main difference outstands the others, namely the nature of the product and length and iteration of the average consumer decision-making process. I will explain this argument again using the *diaper*-analogy:

Imagine you just became parents. The birth of your child changes your pyramid of needs. All of the sudden, *diapers* become a crucial product within your households’ consumer basket. This change of needs initiates the start of your customer journey at the end of which you will have bought diapers for the first time. Which ones you buy will depend on the number of touchpoints and brand-values attributed with the brand of your choice. As outlined above, this process of decision-making is labelled consumer decision-journey given the possibility of iterative loops within the scheme.

The difference now between marketing a product such as diapers and marketing a political actor lies in the temporal component of both marketing processes. Put differently: A political actor is at best a ‘product’ that is created under public surveillance. The individual perception of a political actor is shaped over time through continuous (laymen) assessment of relevant skills and (political) attributes by the electorate (Beierlein and Burger 2020, 100).

This holds especially true for political candidates that aim for government level jobs. Once the candidate i.e. the ‘product’ has made it to the starting point of a (federal) campaign, the corresponding image of the candidate inevitably will have been shaped to a certain extent by public perception. Or to stay in our example: Marketing a political candidate equals marketing diapers, but beginning with the logging of trees and the processing of plastics necessary to produce them. In commercial marketing it is hence the marketing itself that creates the values attributed with a certain brand. In electoral politics, marketable brands i.e. parties and politicians always come with an intrinsic value that predetermines the marketing opportunities for the political brand.

With the advent of web 2.0 and interpersonal communication through social media, the predisposition of politicians has changed significantly. While the association with a political party still sets the root note of a political brand, the individual politician now has much more control over the image created around his political persona then

before social media. Political actors are now more than ever capable of crafting their own image and henceforth market themselves as a personal brand to an interested public. This, however, could significantly affect the individual notion of politicians, given that the share of branded-messaging increases while heuristics tend to favour affective decision-making anyway (Antonakis and Dalgas 2009).

If this was to be the case, then corresponding individual behavior should be observed in an experimental survey. If personal branding positively affects the individual notion of political actors, then survey-participants should rate the relating politician accordingly. I will therefore now do the following:

I will run a quasi-experiment to isolate the alleged effect on the process of opinion-formation on the individual voter-level. The experiment will show, how the usage of self-branding via Instagram affects the rating of politicians. I will use this evidence to support my presented funnel theorem. In a consequent step, I will transfer the results from the quasi-experiment to a representative survey-data set. This will allow me to test my main hypothesis and to answer the research question of this paper:

Does political self-marketing positively affect the individual notion of potential voters and how does this happen?

5.3 Explorative test: A quasi-experiment to analyze the efficacy of political self-marketing

As shown above, media interest generates interest in the Instagram-accounts of politicians. But how does this interest and the act of following affect the individuals' notion of the respective politician? The following quasi-experiment will give answers to this question and henceforth underline the potential influence on individual decision-making that accompanies the touchpoint that is Instagram.

5.3.1 How individuals rate politicians: Self-marketing and its impact on potential voters

To further assess the relationship between self-marketing and individual assessment of political actors, I ran a quick experiment with some students that took a class I gave during the winter-term 2019/2020 at the University of Hamburg. The study was run in class to demonstrate – among other things – political science research methods and we discussed the results afterwards. So, presumably, no experimenter-demand effect in the documented results. However, due to the circumstances under which the experiment was run, it can only serve as an explorative test, highlighting trends.[5]

The experiment intentionally built on previous findings that showed how information conceived via Instagram let individuals rate a fictitious politician more favorable when compared with an analogue control group (Hügelmann 2021, chapter 4). Consequently, I was curious to see how far this positive bias from social media would reach in the context of a more concrete situation.

The then recent election of a new party-leader for the Social Democratic Party of Germany (SPD) provided a practical example: Saskia Esken, who just had been elected co-chairwoman of the SPD was facing here first media scandal at the time. Allegedly, Ms. Esken had blackmailed a former staffer of hers and the accusations were all over the German media and used by political adversaries (Die Zeit 2019). The story broke, spins were put forward on Twitter and henceforth dominated the most prominent takes in consequent media coverage. A typical showcase of public discourse under the influence of digital and social media.

The question thus remained how this negative frame would affect individual ratings of trust and support, and if the expected (and logical) rating-backlash would be mitigated by personalized social media. To address this question, I borrowed off the Esken-case and transferred it to a neutral setting. I used the fictitious persona of 'Friederike Dostermann', a character I developed to be used in a series of experiments to analyze the interaction with social media content in a political context. As 'Friederike Dostermann' had not made any 'public' appearance on my blog or outside the

[5] Initially, the results from the explorative test should have led to a proper laboratory experiment. Due to the outbreak of the Corona-Virus, this idea had to be canceled as no experimental research was prohibited during the given time-period.

laboratory where I worked with the persona beforehand, the character was suitable for further experiments with no potential risk of biases or related problems. So, how would the students rate Ms. Dostermann in face of a negative frame about blackmailing and abuse of power? And could the expected negative backlash be mitigated through personalized social-media? In class, I split the students in to two groups (A and B) according to where they were seated. As the tables in the class-room were u-shaped, this resulted in two physically separated groups. Both groups were more or less facing each other with no clear view of what was on the other groups table. In a second step, I handed out a sheet of paper with its face down.

The sheet of paper contained information about a politician I was going to present to the class, Friederike Dostermann. Then, I put a picture on the wall for all students clearly to see. The pictured showed a commercial flyer (see Appendix 9) announcing the campaign kick-off of Ms. Dostermann, whom I then introduced to the class by giving the following verbal input:

"The woman you see on the picture is the fictitious politician Friederike Dostermann. Ms. Dostermann just got elected mayor in the fictitious small town of Heisterfeld. She is not associated with any party but an independent politician who ran for office without party-support. Now, with a few weeks into the new office, Ms. Dostermann is facing her first media scandal. According to a local newspaper, Ms. Dostermann blackmailed one of her campaign staffers and forced her to hand-out the password for the staffers' private e-mail account. As of today, Ms. Dostermann has not issued any statement on the accusation."

After setting the scene I asked the students to turn over the sheet of paper which I just handed-out. The students then were asked to take the following task: They should rate Ms. Dostermann in two categories, namely *approval* and *trust*.

For *approval*, the students were asked to rate Ms. Dostermann on a scale between 0 and 100 with 100 denoting the highest possible score. For *trust*, the students were asked to issue a school-grade between 6 and 1, with 1 denoting the best possible grade. The sheet for *group A* contained a screenshot of the Instagram-account from Friederike Dostermann and a stand-alone picture. The screenshot showed an overview of the

profile, enclosing the profile picture and the last three posts issued by Ms. Dostermann. Two of the three posts are high-quality editorial photographs of Ms. Dostermann that resemble the iconography of personalized social media usage prominent on Instagram. The stand-alone picture showed one of the three posted images, adjoined by a corresponding post-description. The image shows a woman holding some kind of sign on a typical market square. The content of the sheet for *group A* is seen below:

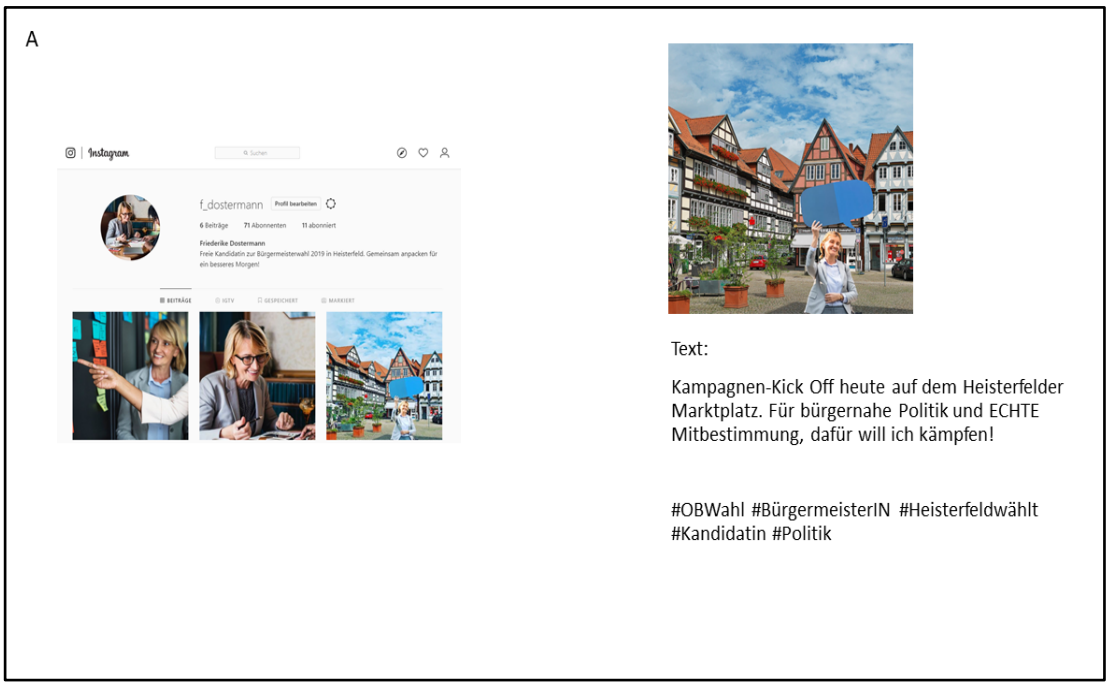


Figure 9: Information sheet for group A

Group B received the same image of Ms. Dostermann holding a sign, but within the context of mock-up newspaper reporting on Dostermanns campaign kick-off event. The information transmitted via text is almost identical as both text segments highlight Ms. Dostermanns take on politics. Both texts transport the same core-message of citizen-centered politics and participation. More importantly, the additional information of the personalized Instagram-account is missing on the sheet for *group B*. The information presented to *group B* is seen on the next page:

B


Heisterfelder Bote

Wahlkampfauftakt: Dostermann will mit Bürgerbeteiligung punkten

Text:

Wahlkampfauftakt: Dostermann will mit Bürgerbeteiligung punkten

Das Rennen um das Bürgermeisteramt ist eröffnet. Die parteilose Kandidatin Friederike Dostermann eröffnete mit ihrer Auftaktveranstaltung auf dem Heisterfelder Marktplatz am Wochenende den Wahlkampf. In den Fokus ihrer Kampagne rückt die Kandidatin das Thema Bürgerbeteiligung. "Ich stehe für bürgernahe Politik und echte Mitbestimmung", sagte Dostermann. "Dafür will ich kämpfen." Der ganze Bericht:

Figure 10: Information sheet for group B

To summarize, both groups received politically relevant information about Ms. Dostermann. However, *group A* received an additional glimpse into a personalized Instagram-feed of Ms. Dostermann. How would this additional node of information affect the individual perception of Ms. Dostermann? After a few minutes I collected the sheets – 22 in total – and ended class. Heading back to my office I was curious to see how the results came about. Surprisingly, the results painted a very clear picture. *Group A* who saw the Instagram-account of Ms. Dostermann was significantly more forgiving with her than *group B* who only saw the mock-up newspaper article. On average, *group A* issued 20% higher *approval* (44.55% vs. 24.55%) and one school-grade better in the *trust*-dimension (4 vs. 5). To exclude the eventuality of chance, I ran an analysis of variance and an OLS regression. The results are pictured in **table 14**.

***Table 14*:** Rating of trust and approval in relationship to media-type.		
	Trust	Approval
Instagram (Group A)	-1.1**	20**
	(.40)	(8.05)
Constant	5.27	24.55
	(.28)	(5.69)
N:	22	22
R^2	0.2687	0.2358
Adj. R^2	0.2321	0.1975
F (1, 20)	7.35^{**}	6.17^{**}
Cohen's d	1.16^{+++}	-1.06^{+++}

The dependent variable is named in the top row of each column. The independent variable is the type of stimulus, here "Instagram" for Group A. OLS regression + Analysis of variance for F-statistic (ANOVA), standard errors in parentheses. The Sample consists of experimental data from 22 participants surveyed in a non-laboratory pre-test on December 16th 2019.

***: p<0,01; **: p<0,05; *: p<0,1

$^{+++}$: $|d| \geq 0.8$; $^{++}$: $|d| \geq 0{,}5$; $^{+}$ $|d| \geq 0{,}2$

As can be seen the results are statistically significant. The corresponding F-values for both models surpass their respective thresholds for 1/20 degrees of freedom for $\alpha = 0.025$ at 5.8715 (Dinov 2020); both models also issue a Cohen's d-value above 0.8 which indicates a large effect size (Cohen 1988).

The results are remarkable as they show how the knowledge about the Instagram account affects the individual assessment of the corresponding politician. Both the *trust* and *approval* ratings suffered less from the negative frame under the visual presence of the Instagram account. Apparently, receiving information in an Instagram-context is sufficient to positively affect the notion of the politician on individual level. The findings implicate that already the visual cue of self-branding measures is sufficient to activate affective information-processing and corresponding heuristics. Consequently, knowing about a politician using Instagram creates an image that

consists of positive attributes. This image serves as a cognitive shortcut within the decision-making or information-processing task. Against this background, a social media presence and the corresponding *image* it entails translate into greater goodwill on the voter side. Given how little information the participants received about the candidate, the negative spin was very powerful. Nevertheless, the Instagram group rated Friederike Dostermann significantly better. These results point strongly in the direction of a positive effect between self-branding on Instagram and the individual notion of corresponding politicians.

5.3.2 Interim conclusion

As I argued with reference to Aaker (1997, 2012), creating a personal brand through the usage of Instagram could significantly increase the efficacy of political marketing. This theoretical argument – to some extent – reflects in a first empirical test given the results presented. At this point, I can conclude two findings:

First, Instagram acts as a touchpoint between interested individuals and politicians. I showed, how the profiles of politicians grew bigger in the context of increased public interest. Instagram consequently takes the role of a hinge between interested individuals and politics. Instagram itself is driven by a certain aesthetic that facilitates personal-branding and personalization – i.e. the focus on the 'personal' or 'private' side of a politician.

This in turn, *second*, increases the likelihood of political support on individual level. The results from the quasi-experiment showed, how the presence of Instagram and the notion of personal-branding increases the support for an unknown politician – even in face of a powerful negative frame. The inherent personalization that comes along with the Instagram-account arguably creates a sense of "intimate relationships", as McGregor (2018, 1156) already described it in the context of personalization on Twitter.

The overarching research-question of this paper asks for the affective influence on individual behavior as exerted through political self-marketing. The results so far indicate a measurable effect in the broader context of political will-formation. In order to finally answer this question, I will now conduct a hypothesis-test using representative survey-data from the German Longitudinal Election Study (GLES). In a final step I will summarize and transfer the findings into a comprehensive scheme that modulates a political marketing funnel.

5.4 Analysis

It was shown, how individuals search for politicians' Instagram profiles under the impression of increased public attention. By eventually becoming a *follower*, the individuals become target of increased self-marketing. As a direct consequence, the share of advertorial and personalized content in the process of political information-seeking increases.

Furthermore, I showed how personalization through Instagram affected the individuals' notion of politicians in a quasi-experiment. The question remains, however, if these findings can be generalized. If political self-marketing through Instagram affects the individual notion of politicians, then the results gathered in the quasi-experiment should be replicable in representative survey-data. I will therefore now use data from the German Longitudinal Election Study (GLES) to test the following hypothesis:

If self-marketing on Instagram positively affects the notion of politicians on the individual level, then those politicians who make use of self-marketing should receive higher approval ratings by Instagram-users.

To test this hypothesis, I use representative data from the GLES data set za6824 (Roßteutscher et al. 2018). The data was collected between the 19th and 23rd of September 2018 by using a standardized online questionnaire and is a representative sample for the German electoral population. In addition to socio-demographic data, the questionnaire asks for attitudes towards individual politicians and the media usage

behavior of the participants. The data set also has numerous questions on the use of social media. This makes it possible to statistically test whether the use of Instagram influences the evaluation of individual politicians. If so, this would correspond to the results from the quasi-experiment. I will now describe the data before running statistical tests to address the hypothesis.

5.4.1 Data description

The data set provides individual ratings of seven (at the time) leading politicians: Angela Merkel (CDU), Andrea Nahles (SPD), Horst Seehofer (CSU), Alexander Gauland (AfD), Christian Lindner (FDP), Sahra Wagenknecht (DieLinke) and Katrin Göring-Eckhardt (Bündnis 90 / Die Grünen).

The rating for each politician is based on an unbalanced Likert-scale between -5 and +5. The ratings for each of the politicians comprise the dependent variables in the statistical analysis. A dummy variable for Instagram-usage will serve as the independent variable. The dummy denotes 1 when individuals stated they used Instagram and 0 respectively when they didn't. In total, 325 of 1103 respondents said they used Instagram. **Table 15** on the following page shows descriptive statistics of the data and variables used.

Of the seven politicians surveyed, five had Instagram-accounts. Four of which were used regularly. While the account of Andrea Nahles still exists, its last post dates back to 2012. Apparently, the account has been abandoned. Horst Seehofer and Alexander Gauland don't have Instagram-accounts. That leaves the accounts of Angela Merkel, Christian Lindner, Sahra Wagenknecht and Katrin Göring-Eckhardt for analysis. The profiles of Lindner (@christianlindner), Wagenknecht (@sahra_wagenknecht) and Göring-Eckhardt (@goeringeckhardt) are well-suited for comparison as they have at least *three* things in common:

First, the profile holders have leading roles in smaller opposition-parties which suggests comparable strategies in using Instagram. *Second*, the presence of selfies indicates, that the profiles are at least partly managed by the profile-holders in person.

Table 15: Descriptive statistics for relevant variables: Ratings and Instagram-usage

Variabe	**Code**	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Rating Angela Merkel	rating_am	1085	-.88	3.51	-5	5
Rating Andrea Nahles	rating_an	1016	-1.42	2.92	-5	5
Rating Horst Seehofer	rating_hs	1069	-1.60	3.06	-5	5
Rating Alexander Gauland	rating_ag	999	-2.56	3.08	-5	5
Rating Christian Lindner	rating_cl	1007	-.79	2.89	-5	5
Rating Sahra Wagenknecht	rating_sw	1018	-.32	3.07	-5	5
Rating Katrin Göring-Eckhardt	rating_kge	904	-1.07	2.86	-5	5
Instagram-Usage (dummy)	t1023c_insta	1103	.29	.46	0	1

Descriptive statistics. Rating for each politician on unbalanced Likert-scale. Instagram-usage as independent dummy-variable.
Data-source GLES za6824 (Roßteutscher et al. 2018).

And *third*, all three profiles are directly associated with the *person* behind the politician as they all have a personal handle that consists of the name of the profile holder. The account of Angela Merkel, in comparison, does not relate to her in *person*, but to the office she is holding. The Merkel-account goes by the handle @bundeskanzlerin which initially sets the stage for the general appearance of the channel. It is not to exhibit the individual *Angela Merkel*, but the office she impersonates. Consequently, the account is not run by Angela Merkel herself, but by the federal press office (Bundesregierung 2020).

In the following analysis, 'Instagram-usage' serves as a proxy for deliberate self-marketing and personal-branding efforts by politicians. On the one hand, this procedure is consistent with the theoretical argument I developed. On the other hand, *personalization* and personal-branding could theoretically be carved-out of the individual profiles in more detail. However, I decided against a more in-depth analysis of the present profiles as the corresponding social metrics (likes and comments, development of followers) are hard to obtain and do not add to the explanatory value

of the present research. It furthermore stands to question, if observational social metrics as of likes and comments should be integrated into representative survey-data given that the observations derive from an uncontrolled environment and population.

5.4.2 Method

To test the hypothesis, I use OLS-regression to investigate the relationship between Instagram usage and the rating of politicians. If the hypothesis holds true, then politicians who use Instagram should be rated higher by Instagram-users when compared with non-users. Furthermore, if the theoretical argument holds true, then there should be no statistically significant link between Instagram-users and the rating of politicians who don't use Instagram. I test for p-values and F-statistics. The coefficients indicate the actual rating-difference between the Instagram and the Non-Instagram group on average. The results from the analysis can be seen in **table 16**. In order to increase robustness of the analysis, I provide additional models that include further covariates (age, income, political interest, gender, education) in **table 17**.

5.4.3 Results

As can be seen in the regression-table, the results paint a relatively clear picture. Of the four politicians who use Instagram, three show significantly increased ratings by Instagram-users. While the results for Angela Merkel are relatively weak, the results for Christian Lindner and Katrin Göring-Eckardt indicate a strong link between self-marketing and the perception of politicians on individual level:

On average, Instagram-users rate Christian Lindner 0.88 scale-points better than non-users. For Katrin Göring-Eckhardt, the rating increases by 0.75 scale-points on average. For Sahra Wagenknecht, no significant effect is present. I will address this specific finding in the following paragraph. Furthermore, there is no interaction between Instagram-users and politicians, who don't use Instagram.

The results of the extended models reinforce the impression of the bivariate analyzes: The addition of control variables confirms the impression of a significant, positive correlation between the self-marketing of politicians on Instagram, and the evaluation of these politicians by Instagram-affine voters (See **table 17**).

Table 16: Instagram usage and the rating of politicians.

Dependent variable	**Coef.**	**t**	**p**	**F**	**Adj R²**	**N**
Rating Angela Merkel	.40*	1.71	0.088	2.91*	0.0018	1085
	(.23)			(1, 1083)		
Rating Andrea Nahles	.28	1.41	0.160	1.98	0.0010	1016
	(.20)			(1, 1014)		
Rating Horst Seehofer	.21	1.02	0.306	1.05	0.0000	1069
	(.20)			(1, 1067)		
Rating Alexander Gauland	-.12	-0.57	0.567	0.33	-0.0007	999
	(.21)			(1, 997)		
Rating Christian Lindner	.89***	4.50	0.000	20.25***	0.0188	1007
	(.20)			(1, 1005)		
Rating Sahra Wagenknecht	.29	1.38	0.169	1.89	0.0009	1018
	(.21)			(1, 1016)		
Rating Katrin Göring-Eckardt	.75***	3.65	0.000	13.29***	0.0134	904
	(.21)			(1, 902)		

The Independent variable for all models is "Instagram usage". OLS-regression. Standard errors in parentheses. Degrees of freedom in parentheses. The sample consists of panel data (GLES za6824). Survey period: 14.09.2018 – 23.09.2018. Online survey, standardized questionnaire.

***: p<0,01; **: p<0,05; *: p<0,1

Table 17: Robustness-test with additional covariates

	Rating Angela Merkel	**Rating Katrin Göring-Eckhardt**	**Rating Christian Lindner**
Instagram usage	.18	.67***	.70***
	(.25)	(.22)	(.21)
Age	-.005	-.001	-.013*
	(.0078381)	(.01)	(.01)
Income (x1000)	-.067	-.51	.016
	(.062)	(.054)	(.053)
Political interest	.16	.24**	-.23**
	(.11)	(.10)	(.09)
Female	-.26	.27	.09
	(.22)	(.20)	(.19)
Education	.40***	.18***	.02
	(.06)	(.09)	(.06)
Constant	-2.40	-1.70	-.03
	(.71)	(.64)	(.61)
N:	1.085	904	1.007
R^2:	0.0559	0.0360	0.0304
Adj. R^2:	0.0506	0.0296	0.0246
F-statistic:	10.63 (6, 1078) ***	5.59 (6, 897) ***	5.23 (6, 1000) ***
Mean VIF:	1.16	1.14	1.15

OLS-regression. Standard errors in parentheses. The sample consists of panel data (GLES za6824). Survey period: 14.09.2018 – 23.09.2018. Online survey, standardized questionnaire. *Italics* indicate dummies.

***: p<0,01; **: p<0,05; *: p<0,1

While the observed correlation between Instagram use and Angela Merkel's evaluation disappears, the results of Katrin Göring-Eckhardt and Christian Lindner remain significant and robust. For Katrin Göring-Eckhardt, as well as for Christian Lindner, the results show that an increased interest in politics has a positive influence on the two politicians' assessment on Instagram. This finding supports the argument of Instagram acting as a digital hinge between interested individuals and politics. Furthermore, it is shown that Katrin Göring-Eckhardt is rated better by higher educated people, while Christian Lindner is apparently better received by younger people than by older ones. Against this background I can for now read the results as supportive evidence for the hypothesis:

Self-marketing on Instagram indeed positively affects the notion of politicians on the individual level. Those individuals who use Instagram rate politicians better that also use the image sharing platform. The results from the survey-data hence confirm the findings of the quasi-experiment.

These results indicate a potentially vote-affecting influence on individual level extorted by political self-marketing through social media. I will now discuss the results in more depth by adapting the findings to a comprehensive political marketing funnel. In a consequent step I will translate the test-statistics of Christian Lindner to the marketing funnel to further underline the plausibility of the theorem.

5.5 Discussion

In this chapter, I presented the results of observational Instagram and Google-Trends data, a quasi-experiment, and representative survey-data. The provided empirical evidence should serve as a proof of concept for the hypothesized effect on the individual formation of a political opinion and henceforth decision-making that derives from political self-marketing in social media.

I therefore developed a theoretical argument that explains how Instagram provides politicians with a powerful tool to present themselves in a favorable manner to interested individuals. I argued that the advent of Instagram would hence increase the share of advertorial messaging in political communication and increase the efficacy of political marketing. I argued that Instagram would take the role of a hinge between

interested individuals and politics. The presented evidence suggests two things. *First*, the data of all three empirical tests indicates, that the formation of a political opinion follows the rational of a consumer decision-journey. *Second,* the results suggest a direct influence on the individual notion of politics that derives from self-marketing via Instagram. In order to further address these results, I will now present a scheme that conceptualizes political social media marketing as a consumer journey:

5.5.1 A scheme for political social media marketing

The political consumer/voter-decision journey that I propose consists of seven stages. At first, an initial event evokes general public interest in a political figure. In the second step, individuals translate this public interest into individualized media diets. In the third stage, individuals actively search for the politician of interest in their preferred social media. If a profile is present, then a touchpoint is created in the fourth step.

This step sees the individuals witness his/her first impression of the social media persona the politician crafted of him or herself. This is the most important step within the scheme. Three scenarios unfold at this point, each dependent upon the first impression and the corresponding profile-quality.

At best, the individual has a positive impression of the account and likes was he/she sees. As a consequence, the individual becomes a *follower* at this stage. If the profile makes an uncertain appearance, the individual remains in a state of evaluation. As it is not certain, whether or not the profile is worth of the individuals time and attention, the act of *becoming a follower* fails to materialize. If the profile fails to appeal and thus creates a negative first impression, no further examination with the profile happens. After the initial assessment the individuals enter a stage of iterative and ongoing interaction with the profile – dependent upon the scenario. If an individual became a *follower*, a permanent touchpoint got created. This enables the ongoing transportation of information from the politician in the direction of the individual under the impression of personalized messaging. If the individual remained *uncertain,* the uncertainty of the first impression hinders initial engagement with the profile. The individual remains in a state of evaluation but does not yet become a *follower.* If the

profile got dismissed, no iterative stage applies. For the final outcome, each of these scenarios holds different implications for the profile owner. At best, increased awareness and a positive connotation of the profile holder increases the possibility of political support. Second best, the social media profile also increases awareness, albeit in a neutral connotation. In this case, political support depends upon future performance of the profile and politician. Last but not least, if the first impression is negative and no interaction is created the outcome for the profile holder is also negative. (See Appendix 10 for schematic overview)

I want to stress that the possibility to create a permanent touchpoint with potential political supporters is of high value for the profile holder. The creation of the touchpoint 'buys' attention from the individual which is arguably among the most valuable resources in political marketing. In commercial terms, "advertising generates revenue by inducing a costumer to begin the purchase process at a particular firm […]." (E. de Haan et al. 2016, 493) The political equivalent for revenue can only be positive attention, translated into favorable ratings. Vote-shares might appear as the obvious translation but the predisposition for receiving votes is being known and liked/accepted.

What might sound trivial is a complex issue: How to gain attention from scratch without the initial support of a party-network, a public office or other politically relevant assets? How do aspiring first-time electoral candidates even get themselves recognized within a political party?

Or put differently: If a party has to choose between two otherwise identical candidates for the last remaining slot on the ballot – whom would they select? The candidate with a couple of thousand followers on Instagram, or the candidate without? Consequently, one goal of political marketing lies in maximizing the share of people who have a positive image associated with the political candidate, that is: the profile holder.

Against that background, the creation of a personal brand via social media appears in a different light. It is the necessary condition for achieving political success or at least increasing the chance to even get elected in the first place. And there is empirical evidence that this strategic rationale has already been used by political actors in order to maximize electoral success.

5.5.2 A new political phenotype?

There exist numerous examples of a new phenotype of politician. Be it Justin Trudeau, Emmanuel Macron, Sebastian Kurz or Alexandria Ocasio-Cortez: The staging of their own personalities built the foundation for their political capital and electoral success. For the case of Germany, there is arguably not a single politician who embraced the development of a personal brand as early and as compelling as Christian Lindner. Lindner was one of the first democratic politicians in Germany to recognize the possibility of political staging and self-marketing in social media and to make use of it for himself and his party. The election campaigns of the FDP in North Rhine-Westphalia in 2017, as well as the campaign of the FDP for the 2017 federal elections, were conspicuous for their high degree of aestheticism and their unconditional focus on the top candidate. Individual motifs, such as those showing the candidate in a vest in his private life, are still being discussed today.

The outcome of this strategy is partly reflected in the results of the GLES survey-data analysis: The coefficient, the p-value and the F-statistic for the rating of Christian Lindner show, how the notion of Lindner is positively affected among Instagram-users. Compared to his peers, the results for Christian Lindner are by far the most robust and with the biggest observable impact. Arguably, Lindner receives praise for providing high quality content that suits the general aesthetic of the platform. Or put differently: Linder receives praise for self-marketing his personality to the fullest. The approval ratings for Christian Lindner are also remarkable because Lindner's party and the politics he embodies show only a slight overlap with the political majority. The FDP is considered a niche party, its last election result in the Bundestag was 10.7% of the secondary votes. The fact that Lindner nevertheless has such high personality values is evidence of a positive perception of his person (at the time of the survey) beyond party boundaries.

5.5.3 Limitations

This study is of course not without limitations. Especially the presented results form the quasi-experiment are to a certain extent product of artificiality. The set-up of the experiment did not let the participants chose how to assemble their information about

the candidate before taking the initial task. This makes it impossible to actually derive information-seeking behavior from the experiment. Against the backdrop of the preceded data on Instagram-growth it however appears highly plausible that the artificial situation set-up in the experiment resembles *natural* individual behavior. Otherwise, the results could not have been replicated in the representative survey-data. The survey data itself is limited by the fact, that one cannot control for whether respondents who said they used Instagram actually follow the politicians surveyed. This shortfall eliminates the possibility to derive causal mechanisms from the data. This problem is methodological and can only be solved by an appropriately adapted survey method. Approaches based on data donation could reduce this problem.

5.6 Conclusion

In the beginning of this paper I asked how increasing political self-marketing and smartphone-centered social media would affect the process of opinion formation on individual level. As the voters' notion of politicians is related to the image that politicians maintain of themselves, I suggested that the act of self-branding through personalized social media could have a major impact on the individual perception of political competence.

I then presented a theoretical argument that introduced the concept of touchpoints from marketing-science to political science. I argued that voters with a constant consumption of information channels typical for the digital age would likely build their political opinion in the same way they cast other everyday decisions. I therefore took the concept of the consumer marketing journey and applied it to political communications. I then presented a string of evidence from observational, quasi-experimental and survey-data to foster my theoretical argument and to give an answer to the research question.

Does political self-marketing (positively) affect the individual notion of politicians by potential voters and how does this happen?

In view of the gathered results and subsequent arguments I conclude the following: Generally speaking, political self-marketing has the ability to positively affect the

notion of politicians on individual level. The results both from the quasi-experiment, as also the survey-data strongly point in this direction. Through the nurturing of a personal brand that is exhibited on social media, political actors gain the capability to constantly emit favorable message and cues into the direction of the electorate. Like the wheels on a conveyor-belt, a well-run Instagram profile has the ability of constantly exerting influence on the individuals who follow the profile. This does not only increase the probability of creating partisans. Furthermore, the constant interaction with positively connotated (political) content increases the likelihood of affective decision-making.

A communications-strategy capable of leading inherently motivated individuals into a spot where they are subject to branding-efforts increases the overall probability that this individual will integrate the branding information of a political candidate into his or her subjective preferences. Once integrated, the information will serve as one piece of evidence within a decision-making process and, according to Philiastides and Ratcliff (2013), alternate the choice behavior of the individual.

Following the logic of touchpoints, I find it highly plausible that personalized social-media and self-branding efforts extort influence not only on the formation of a political opinion, but on the process of political decision-making.

The direct causal relationship between the consumption of personalized social media and voting, however, still needs to be delivered. The paper at hand advances research in this direction, albeit the methodological hurdles associated with causality remain significant.

The presented combination of experimental research with survey research shows two things: First, it becomes clear that both approaches are not in themselves capable of producing representative statements on causality. While experimental research can establish causality between medium/message and individual behavior, the results cannot be generalized. The data required for this leads into the field of survey research. Here it is shown that representativeness and thus generalizable statements are possible in principle, but in the absence of individual observations, causal statements are not feasible. However, the results presented in this paper suggest that future research will

be able to close the gap between causality and generalizability through field experiments. One approach could be to measure and visualize the impact of social media on voters in their regular daily lives in conjunction with questionnaires and data donation during election campaigns. The election year 2021 in Germany with several state elections and the federal elections in autumn promises numerous possibilities in this respect.

Besides that, the possibility to create a personal-brand and to become an 'Influencer' for the own cause will inevitably change electoral politics: Success in social media most arguably already serves as a proxy for political capabilities and will thereby affect selection-processes within political parties.

In the long run, the share of up-and-coming politicians who embrace techniques from social media or influencer marketing will increase significantly. In the face of the arguments I presented in this paper, I find it highly likely that social media already *affects* individuals in the formation of their political will formation and ultimately decision-making. Future research should therefore emphasize both methodological and theoretical hurdles that hamper research in the field of social media, political marketing and individual behavior.

PART III
CONCLUSION

6. Conclusion: What I did

The focal point and main research objective of my dissertation was to find out whether or not it is possible to nudge voters into a certain direction and to thereby affect the outcome of an election. Consequently, my dissertations' research question was:

Does political communication in social media affect the individual notion of politics and hence affect the outcome of elections?

To answer this question, I had to do three things: *First*, I had to create a theoretical understanding of the alleged causal link between digital political communication and individual behavior. *Second*, I had to obtain data from the individual user level and therefore create a research design capable of doing so. *Third*, I had to transfer the laboratory results into a representative data set, in order to approach a higher level of generalizability.

The *first* objective resulted in the development of a theoretical argument that explained voter behavior through cognitive processes in the context of decision-making and external influences. By the usage of literature from behavioral science and neurology I was able to create a theoretical link between smartphone usage, heuristic decision-making, and the development of political preferences.

The *second* objective created the baseline for a series of quasi-experimental and experimental studies on cognition and decision-making in a political context. I ran a series of preliminary experimental studies in different lectures to assess whether or not this procedure would take my research anywhere promising. The encouraging results from those preliminary studies led to an experimental research design that was capable of obtaining data on political information processing and decision-making in relation to social media usage on individual level.
By presenting the participants of my experiment with a mock-up electoral campaign and corresponding analog and digital campaign material, I simulated how the media-stimulus would affect the individual notion of the fictitious, independent politician

‘Friederike Dostermann’ who ran for the mayor’s office in a fictitious small-town. Both the random assignment of the participants as the linkage between exposure to social media and individual behavior, enabled causal statements on the relationship between stimulus and reaction.

To my knowledge no other study has before used this methodology in researching the efficacy of political communication and marketing. Achieving the *third* objective asked for quite some spontaneity. The original plan of conducting additional experimental research on a much bigger scale fell victim to the outbreak of the Corona-pandemic in Germany in March 2020. Consequently, I shifted the research focus from additional experimental research to the question if the obtained results from the laboratory could be generalized. In addition, I provided further evidence from observational social media and search-engine data. I thereby created a conceptual framework to assess means of political self-marketing and its effect on individuals following the rationale of a marketing-funnel.

6.1 What I found

My dissertation revolves around the simple but complex question of whether or not it is possible to affect individuals and hence alter the outcome of elections. In the three papers that constitute this study I approached this question from different perspectives and with varying insights. However, I feel confident to give an answer to my research question, based on the key findings I am going to lay out in this chapter. For the sake of structure and coherence, I separate my findings into three categories, namely *theoretical, empirical* and *contextual* findings.

Let’s begin with findings that add to the ***theoretical*** understanding and conception of the research area. As outlined and discussed in the introduction, political communication research is in itself an interdisciplinary research area with only little common ground. This circumstance leads to the fact that theoretical contributions used in the field either lean heavily into the direction of communication sciences or, vice versa, into the direction of political science. However, neither discipline provides theoretic contributions that explain the genesis of individual preferences in relationship to political communication.

The arguments laid out in my dissertation contribute to reducing this shortage in theoretical foundation: By focusing on cognitive processes associated with political information processing, I introduced a positive and explanatory theoretical approach to political decision-making on the individual level. This approach puts short-term information processing and corresponding affective behavioral patterns before political convictions.

One could argue that this exclusive focus on cognitive information-processing and decision-making pattern blinds out political predisposition and partisanship. And yes, this is a valid downside of the theoretical approach I chose for the analysis of voting behavior in my dissertation. However, political predisposition was of only little relevance for answering the research question: In view of close electoral results, affecting the outcome on an election does not require the mobilization of partisans per se. Provided that partisans are homogenously mobilized, affecting and altering the outcome of an election requires the strategic mobilization of those societal groups outside of conventional party-ties.

As it still stands to question whether or not digital political communications can affect and alter the outcome of elections at all, analyzing the potential mobilization of those tipping point margins is the logical consequence.

Consequently, conventional theories of voting that account for and emphasize on political preference might have the higher political explanatory value. However, this won't necessarily explain the turnout of undecided or uninformed voters, or voters with little to no interest in politics. It stands to question how those who don't have a stable political preference or even any preference take their voting decision. The theoretical arguments I developed are capable of explaining individual behavior irrespective of political predisposition as they explain political support via the usage of decision-making heuristics under the influence of social media and political self-marketing.

What I found and hence contribute to the literature is the connection of theoretical and empirical results from different bodies of literature that focus on individual information processing and decision-making. Through the merging of those arguments a pattern became visible that could explain voting behavior under the influence of digitalization. Apparently, political selection and evaluation processes are subject to a

number of subconscious, affective considerations, whose contribution to the overall decision is still widely unclear. This is not to say that political predispositions do not account for voting. Quite to the contrary, I believe it is necessary to include affective decision-making into the analysis of political predispositions. With regard to younger generations of first-time voters that grow up under the presence of digitalization, it stands to question how a political predisposition even develops in the first place. The theoretical arguments of my dissertation suggest that the influence on the development of a political predisposition through political communication and political marketing is likely to be greater than commonly assumed. The empirical results strongly point in this direction.

From an ***empirical*** point of view, the findings from my dissertation are threefold: *First*, I provide evidence on usage and functionality of political self-marketing on Instagram. *Second*, I provide evidence on how political self-marketing affects individuals in the process of evaluating information and decision-making. *Third*, I show which function political self-marketing assumes in political campaigns and how this influences the individual notion of politicians.
Analyzing Instagram from the perspective of political communication provided answers regarding the usage of Instagram by politicians. I assessed what drove user engagement and profile growth in relationship to how the channel was used by the corresponding politician. This included image composition, level of enactment, political messaging and usage of technological and multi-media offers within the platform.

The core findings are the following: *First*, personalization is key in driving user engagement. It could be shown that artefacts of a direct and 'personal' exchange between the profile holder and his/her followers significantly increased user engagement. Most notably the posting of selfies and images that showed the profile holder in person lead to more likes and comments than other posts. A selfie increased user engagement by ≈2%, a post that shows the profile holder in person increased user engagement by ≈1%. Interestingly, images that arguably had been professionally edited prior to being posted did not increase user engagement. Apparently, there exists

a threshold between favorable self-presentation and blatant showing off. The latter did not increase user engagement in the sample. *Second*, the usage of multimedia features available in Instagram significantly affect the success of political profiles. Uploading videos to the feed increased user engagement by ≈3%.

Third, political content or even the articulation of an attack at the direction of a political opponent increased user engagement by ≈1%. This stands in contrast to an explorative study by Voigt et al. (2017) who attributed an apolitical character to the platform Instagram. The finding of user activation through the articulation of political statements furthermore provides information about the motivation to follow politicians on Instagram. It appears likely that the users who follow a political profile are supporters or even partisans of the politician in question.

Fourth, I found that political profiles grow rather slowly and not without aide of external influences. I tested various models to track usage patterns that could explain or even create a correlation to growth-rates – without success.

However, *fifth*, I found that political Instagram profiles gain significantly more followers in the context of media events that present the profile-holder to a wider audience. This finding is of central importance as it provides insight into the way, how Instagram-users integrated the channel into their respective media diets and information-seeking behaviors. Following these explorative findings, it was necessary to analyze how political Instagram content and corresponding self-marketing resonates on the individual level.

In order to answer this question, I conducted a laboratory experiment. The research-design split participants in two groups. I then provided background information of an independent political candidate in a mock-up election. The information both groups received had the same quality but differed in appearance. The analog group received visual and text information on the candidate in the form of newspaper coverage and campaign flyers.

The digital group received the same images and text but presented in the form of a personal Instagram account of the candidate. After presenting the information, both groups rated the mock-up politician on eight dimensions accounting for personality and political support. In addition, both groups were given the opportunity to cast their

vote for the mock-up politician. I tested the following dimensions, each on a seven-point scale, with 1 denoting the worst and 7 denoting the best possible answer: *Competence, charisma, accessibility, reliability, general appeal*. In addition, I calculated a mean value for these *character traits*. Furthermore, the participants were asked to give an approval rating for political statements that asked for *identification with the candidate, trust* and *charisma*.

The null-hypothesis expected no deviation between the two groups. Results painted a different picture. The participants of the digital group rated the political candidate significantly better on five out of eight categories. Individuals who saw the Instagram profile prior to evaluating the candidate issued higher ratings for *competence (+0.9 scale points)*, *charisma (+1.3 scale points)*, *accessibility (+1.1 scale points)* and issued higher approval for political statements on *identification (+1.2 scale points)* and *charisma (+1.9 scale points)*. The results were statistically significant and robust. The results clearly indicated what the theory had proposed: Conceiving information via smartphone triggers affective information processing. Instagram served as an anchor to guide the individual through an evaluation task. The positive bias associated with Instagram arguably served as a heuristic to evaluate an unknown politician.

This finding is remarkable as it indicates the existence of anchoring effects in social media. Apparently, self-marketing in social media positively affected information processing on the individual level. What the experiment did not show, however, was a change in behavior. While the Instagram group issued significantly higher ratings, they did not express a higher willingness to vote for the candidate. The only finding I observed in this direction was a quicker reaction-time in answering the question whether or not to vote for the candidate. This, however, should not be overinterpreted. The results of my laboratory experiment painted diverse picture of causes and effects from smartphone-transmitted social media communication on individual behavior. Yes, smartphone-centered social media consumption affected human thinking to the extent that individuals valued information differently when received via smartphone and Instagram. No, human decision-making was not altered given that no change in voting intention was present. An additional quasi-experiment solidified these findings. Again, two groups were separated at random and presented with the fictitious

politician, Friederike Dostermann. This time, Dostermann was subject to a media scandal that accused her for blackmailing former staffers. One group received information that showed a screenshot of the candidates Instagram account. The other group received the copy of a print article. Both stimuli again transmitted the same quality of information and only differed in appearance. Again, the Instagram group issued higher approval and trust ratings than the non-Instagram group – even in view of the negative frame. Knowing about the candidate using Instagram was sufficient to mitigate the negative backlash associated with the accusation of blackmailing that constituted the context of the experiment.

In the research I conducted, Instagram repeatedly had the ability to positively affect the individual notion of politicians that present themselves on the platform. These results hence have significant implications for the understanding of how individuals perceive politicians in the context of social media and means of self-marketing.

In order to further address the broader ***context*** of this relationship, I transferred the results from the laboratory to a representative sample. Results showed that I was able to reproduce the findings from the laboratory in the GLES survey-data: Individuals who used Instagram themselves rated those politicians more favorable who also used Instagram. For approaching causality, this finding is arguably the most promising.
Yes, the GLES-data make it impossible to *know* if those who rated politicians more favorable were following the respective politician on Instagram. However, in the face of laboratory results, the findings from the GLES-survey increase the plausibility of a corresponding causal and generalizable mechanism between social media and individual information processing.
Regarding social medias' role for individual information processing and the development of a political preference, I provided further observational evidence: Results showed that Google-Trends data correlated with profile growth of relevant political figures during the handling of the COVID19-pandemic in May 2020. This implies that social media serves as a hinge between conventional media and individualized media. This finding is important as it indicates a shift from objective, journalistic content as the baseline for political evaluations towards a subjective, non-

journalistic basis of decision-making. Instagram affects voters as it channels attention to politicians' personalities. This source of information is new and of high relevance: The politician is in total control of the message he or she wants to convey. Provided that politicians create a personalized and idealized image of themselves, a certain share of voters will form their impression based mostly on this image. Following my research, there remains little to no doubt, that political self-marketing via social media positively affects the notion of politicians on individual level.

To summarize: There is reason to assume that political science should reconsider how individuals' value political information and take decisions. The results presented in my dissertation strongly point in the direction that digitalization changes structural processes that go along with the formation of a political preference. The nurturing of a personal brand through social media creates a bond between politicians and their followers. This affects how individuals evaluate the corresponding politician. During the experiments I conducted, the presentation of social media activity always favored the rating of the respective politician – even in situations, where a favorable rating was objectively and normatively questionable.

With regard to the research-question – *Does political communication in social media affect the individual notion of politics and hence affect the outcome of elections?* – I conclude the following:

Yes, political communication in social media does affect the individual notion of politics. There remains little to no doubt that the self-marketing of politicians in social media has a significant (positive) effect on the evaluation of the corresponding politicians.

For answering the second part of the research question, establishing a causal mechanism between social media usage and individual behavior in an electoral context was necessary. In this domain, the conclusion is neither as clear, nor as confident as the first one. For once, no generalizable, causal relationship could be established in the course of my dissertation. The causality shown in the experiment is not representative. The results from survey-data on the other hand are representative but lack control for individual behavior. In addition, no change in behavior could be observed during my

laboratory experiment. Against that background, a clear answer to the possible influence on individual behavior is not feasible. It remains to be seen, if the necessary link to proof a causal relationship between social media communication and election results can be delivered by future work. I will discuss the implications that go along with this finding in the following section.

6.2 What necessitates discussion

The causal link between a communicative stimulus and the change in observed behavior did not materialize in the course of this dissertation. As outlined in the fourth chapter, this non-result could well be linked to an inappropriate outcome variable used in the laboratory experiment. It would have been better to ask for political support or likelihood of voting on a more precise, non-binary scale to account for (little) changes evoked via the digital stimulus.

With regard to the end of theory and causality as an epistemological concept as outlined by Anderson (2008), one could argue that a different approach to proofing a link between communication and political action on individual level could be isolated using correlational data only. And yes, researching social metrics of likes and comments for example provides value to the understanding of digital discourse. In addition, if the distance between the explanatory variables and the observed behavior is close enough, the epistemological difference between correlation and causation may not fully matter. A prominent example would be reference-based purchases on Amazon. While it remains unobserved what drove the initial buying impulse on individual level, the observed outcome provides for sound observational statements on user behavior. In this case, as argued by Anderson (2008), the inclusion of theory does not increase benevolence of the corresponding analysis. While this might apply to probabilistic models, analyzes of complex human behavior – such as the emergence of a political preference – necessitate both the theoretic embodiment and the controlled environment to measure on individual user level. Otherwise, spurious-correlations are not distinguishable from causal mechanisms with regard to user-behavior.

6.3 How to progress from here

Future research should focus on two things. *First*, it should embrace the necessity of tracing and measuring political behavior on the individual level. As my dissertation has shown, individual level data add significant value to the understanding of what drives political behavior on aggregate. However, the exclusive focus on laboratory experiments won't be sufficient to account for the variety of external factors, that affect the shaping of a political opinion. It is therefore, *second*, that future studies should include experimental research-elements into representative survey-research. Be it via data-donation or long-term observations with a randomly selected, fixed set of individuals. Concerning the role of social media within the electoral process, society is in a state of cognitive dissonance. The influential power some attribute to digital communication and targeting has yet to be clearly validified. The results presented in my dissertation contribute to this discussion by providing empirical arguments that support the general hypothesis of influencing individuals through digital means. However, the scope appears to be much smaller than what has been articulated in the wake of the Cambridge Analytica scandal. The results should therefore not be over-interpreted. And, I'm afraid the people who will use them in practice tend to do so deliberately. Referring to Jungherr (2020), the overconfident and often exaggerated usage of non-generalizable research-results by practitioners hampers fact-based, rational exchange between science and practice:

"The public debate is characterized by expectations confidently formulated by intellectuals, journalists and consultants. This can be seen, for example, in the widespread belief in filter bubbles or the manipulability of voters via advertising on social network platforms. The lack of confirming empirical findings in systematic scientific studies has so far not diminished the prominence of these expectations in public discourse." (Jungherr 2020, 199) This most certainly contributes to the skepticism towards practice on the part of the scientific community I described in the introduction. Nevertheless, this ambiguity should not devalue the findings presented in this dissertation. My results can contribute to and enhance the discussion about the influence of digital media on voting decisions and individual behavior – especially in view of an ever-growing number of non-factual contributions from popular-science literature.

6.4 Who can use my results? Practical implications

My results aim to contribute to the scientific debate on digitalizations' influence on electoral processes. The studies presented in this dissertation provide a variety of connection points for further research or criticism.

Outside academia, the results laid out in this dissertation are of certain value for politicians, campaign strategists or other actors that have their business in contemporary communications services. This target-audience is equally important as these are the ones who implement communications and thereby shape the ongoing evolution of political communication. As 2021 sees at least six state-level elections and German Federal Elections, my findings may contribute to strategical implications associated with social media in electoral campaigns. Against this background I created a typology for political self-marketing on Instagram. It accounts for the varying degrees of professionalism observed among the German political class and describes paths towards the creation of a contemporary political brand. A corresponding matrix to analyzing different stages of political self-marketing can be seen in Appendix 12 'The Political Influencer Matrix'.

6.5 Final remarks

The findings presented in this dissertation are uncertain. I present valid and plausible results from laboratory and empirical research. Twice I could show, how the individual perception of a mock-up politician was positively affected by social media. Regarding the hypothetical political marketing journey, it was made plausible how social media acts as a central hinge between mainstream-media and public interest, and personalized information consumption. The results are of particular relevance due to the proximity of the research design to current practice of digital political communication. The profile I created for the fictitious politician 'Friederike Dostermann' simulated common usage patterns observed among German politicians. Its combination of private insights, campaigning material and random pictures of literally anything resembled the diary-like style observed in the Political Instagram world in Germany.

My results show that personalization via social media positively affects the notion of voters. Instagram excelled at presenting a politician in a favorable light. The presence on Instagram created a positive anchor associated with the profile-holder. Individuals who conceived political information in the shape of Instagram-content rated the sender of the content more positive. This has been repeatedly demonstrated at the level of the individual recipient throughout my research.

The results implied, that the process of voting is far from being fully developed or conceptualized in theory. Voting could well be the outcome of a cognitive process that is based on affective information processing and heuristic decision-making. Likewise, the results indicate, that social media acts as a hinge between conventional media-presence and patterns of individual information seeking. It seems certain that the follow-up communication through social media described in paper one and paper three will make a measurable contribution to the overall evaluations of politicians on an individual level.

Furthermore, I conclude that the willingness to support a politician is likely to increase with ongoing interaction between politicians and individuals via social media. This can have a decisive effect on the outcome of elections, since the activation of potential supporters increases the mobilization capacity of parties. Close electoral margins at the German state-level have shown that parliamentary majorities often depend on less than a hundred votes. Against this background, the ability to mobilize is of central importance as any parties' share in turnout directly constitutes its parliamentary leverage.

It is hence plausible that a broad-based, coordinated mobilization campaign within Federal Elections can influence the constitution of parliamentary majorities: When the distribution of parliamentary seats becomes the outcome of ever closer electoral margins, the total number of votes/individuals necessary to influence becomes relatively small.

Although such a strategic use of social media has not yet been observed in Germany - the possibility of orchestrating and carrying out such an operation is something I consider possible, plausible and probable in view of my results. Against this background, social media appears as a very powerful tool to accumulate political capital. Regarding future generations, this process will gain more traction and won't

be reversible. In the medium run, I am convinced that the ongoing relevance of social media will create a new phenotype of politician. This poses a challenge to political parties who could well be among the casualties of an ongoing personalization-trend.

Epilogue: Political Influencers?

What now? What remains after conducting this research? What is the final conclusion to draw after three and a half years' worth of research? At times I had the impression that with every question answered at least two questions go along that remain unanswered. However, after all my dissertation answered the question, whether social media affects individuals in the process of political information processing. It does, and arguably does so at a significant scale.

What remains unanswered is the exact origin of the observed effects. Yes, the observed behavior is rooted in cognitive and neurological processes that go along with digital media consumption. But what exactly leads to the materialization of a positivity bias associated with Instagram? Furthermore, it remains uncertain if deliberate influence on individuals in the context of voting is actually possible. The results presented strongly point in this direction, but the causal effect necessary to proof the existence of a corresponding mechanism did not materialize. However, what became evident and what I am deeply convinced of is the necessity to put research on voting behavior (and political communication) in a broader context to account for the scope of change that goes along with digitization. What I would like to contribute to this debate is the concept of the networked citizen.

Aral (2020) describes the decade of 2010 as "the era of the networked consumer, who is digitally connected to and influenced by her social network." (Aral 2020, 145) I find this a compelling thought as it accounts for the disruptive force of digitization without discounting proven concepts. A consumer remains a consumer, after all. And the same holds true for the political realm. After all, politics is politics. The challenge for future analyzes will lie in the conceptualization of politics regarding an ever more digitized society. The share of *unpolitical* externalities at the observed behaviors will increase. Against this background, the expression 'networked citizen' is suitable as a figure of thought and keyword. Regarding future developments, I find it plausible that sooner

or later a genuine Influencer will enter electoral politics on either state or federal level. And what happens when a public figure like the YouTuber Rezo (currently more than 1 million followers on Instagram only) appears on the ballot for, say, the Green party? How will a public figure whose business is built on creating and reaching large audiences on a regular basis affect mobilization and political support? For now, this remains a hypothetical question. But for how long?

I find it puzzling and worrying that there is an ongoing debate within political science about the relevance of political communication for the broader research context. I am convinced, that political science is missing a big opportunity to increase its public relevance by adapting to what has been happening to the political realm in the wake of digitalization. At the beginning of this doctoral thesis, I was certain of the usefulness of social media/aggregate data. Today, I consider the actual usefulness of social media observation data for explaining political behavior patterns to be quite limited. It nevertheless remains important to investigate the functional mechanisms of Facebook and other networks in the aggregate. Otherwise, even more socially relevant knowledge will be privatized which is another story in the context of social network analysis.

7 Literature

Aaker, David (2012): "Three keys to managing your personal brand". In: Prophet. https://www.prophet.com/2012/04/84-three-keys-to-managing-your-personal-brand/ (10.02.2021).

Aaker, Jennifer L. (1997): "Dimensions of Brand Personality". In: Journal of Marketing Research, Vol. XXXIV 347-356.

Allison, Paul (2009). "Fixed Effects Regression Models". New York, NY: SAGE Publications, Inc.

Anderson, Chris (2008): "The End of Theory: The Data Deluge Makes the Scientific Method Obsolete". In: Wired. https://www.wired.com/2008/06/pb-theory (10.02.2021).

Antonakis, John/**Dalgas**, Olaf (2009): "Predicting Elections: Child's Play!" In: Science Vol 323 (2009), 1183.

Aral, Sinan (2020): "The Hype Machine: How Social Media disrupts our elections, our econony, and our health – and how we must adapt". Glasgow: Harper Collins Publ.

Ariely, Dan (2009): "Predictably Irrational, Revised: The Hidden Forces That Shape Our Decisions". New York: Harper.

Arzheimer, Kai/**Schmitt**, Annette (2005): "Der ökonomische Ansatz". In: Falter, Jürgen W./Schoen, Harald (Eds.), Handbuch Wahlforschung (pp. 331-404). Wiesbaden: Springer Fachmedien, 331-403.

Atchley, Paul/**Warden**, Amelie (2012): “The need of young adults to text now: Using delay discounting to assess informational choice”. In: Journal of Applied Research in Memory and Cognition, 1(4), 229-234.

Auler, Fabian/**Huberty**, Danièle (2019): "Content Distribution - So verbreiten Sie Ihren Content effektiv in Ihren Zielgruppen". Wiesbaden: Springer Fachmedien.

Bayern.de (2020): “Bericht aus der Kabinettssitzung vom 5. Mai 2020”. In: https://www.bayern.de/bericht-aus-der-kabinettssitzung-vom-5-mai-2020 (10.02.2021).

Bechara, Antoine (2005): "Decision making, impulse control and loss of willpower to resist drugs: a neurocognitive perspective". In: Nature Neuroscience 8(2005), 1458-1463.

Beierlein, Constanze/**Burger**, Axel (2020): "Prozesse der Beschaffung und Verarbeitung politischer Informationen". In: Faas, Thorsten/Gabriel, Oscar W./Maier, Jürgen (Eds.): Politikwissenschaftliche Einstellungs- und Verhaltensforschung – Handbuch für Wissenschaft und Studium. Baden-Baden: Nomos, 93-120.

Bond, Robert M./**Fariss**, Christopher J./**Jones**, Jason J./**Kramer**, Adam D.I./**Marlow**, Cameron/**Settle**, Jaime E./**Fowler**, James H. (2012): “A 61-million-person experiment in social influence and political mobilization.” In: Nature (489), 295-298.

Boulianne, Shelley (2015): “Social media use and participation: a meta- analysis of current research”. In: Information, Communication and Society, 18-5, 524-538.

Boulianne, Shelley (2018): “Twenty Years of Digital Media Effects on Civic and Political Participation”. In: Communication Research 2020, Vol. 47(7) 947-966.

Braun, Frank/**Benz**, Patrick (2015): “Genese natürlicher Entscheidungsprozesse und Determinanten kluger Entscheidungen. Theoretische und empirische Reflexionen im Spannungsfeld zwischen analytisch-bewusstem und intuitiven Entscheiden“. Wiesbaden: Springer Fachmedien.

Braun, Andreas/**Garriga**, Gemma (2018): "Consumer Journey Analytics in the Context of Data Privacy and Ethics". In: Linnhoff-Popien, Claudia/Schneider, Ralf/Zaddach, Michael (Eds.): Digital Marketplaces Unleashed, Wiesbaden: Springer Fachmedien, 663-674.

Brettschneider, Frank (2014): "Massenmedien und Wählerverhalten". In: Falter, Jürgen W./Schoen, Harald (Eds.): Handbuch Wahlforschung. Wiesbaden: Springer Fachmedien, 625-657.

Bressan, Rodrigo/**Crippa**, Jose (2005): "The role of dopamine in reward and pleasure behavior - review of data from preclinical research". In: Acta Psychiatrica Scandinavica. Supplementum 111(427): 14-21.

Bundesregierung (2020): “Impressum“. In: https://www.bundesregierung.de/breg-de/impressum?view (10.02.2021).

BPB Bundeszentrale für politische Bildung (2013): “Wahlbeteiligung nach Altersgruppen“. In: https://www.bpb.de/nachschlagen/zahlen-und-fakten/bundestagswahlen/205686/wahlbeteiligung-nach-altersgruppen (10.02.2021).

BZgA (2019): “Rauchen bei Jugendlichen und jungen Erwachsenen in Deutschland Ergebnisse des Alkoholsurveys 2018 und Trends“. In: BZgA. https://www.bzga.de/fileadmin/user_upload/PDF/studien/Alkoholsurvey_2018_Bericht-Rauchen.pdf (10.02.2021).

Cambridge (2020): "Meaning of metaphor in English". In: Cambridge Dictionary. In: https://dictionary.cambridge.org/dictionary/english/metaphor (10.02.2021).

Ceccobelli, Diego (2018): “Not every day is Election Day: A comparative analysis of eighteen election campaigns on Facebook“. In: Journal of Information Technology and Politics 1(20), 1-20.

Cohen, Jacob (1988): “Statistical Power Analysis for the Behavioral Sciences”. Hillsdale: Lawrence Erlbaum Associates.

Coleman, James S. (1990): “Foundations of social theory”. Cambridge, MA: Belknap Press of Harvard University.

Court, David/**Elzinga**, Dave/**Mulder**, Susan/**Vetvik**, Ole Jørgen (2009): "The consumer decision journey". In: McKinsey Quarterly. https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/theconsumer-decision-journey (15.10.2020)

Dalton, Russell J. (2014): "Interpreting Partisan Dealignment in Germany". In: German Politics, 23:1-2, 134-144.

Dinis, Gorete/**Costa**, Carlos/**Pacheco**, Osvaldo (2016): "The Use of Google Trends Data as Proxy of Foreign Tourist Inflows to Portugal". In: International Journal of Cultural and Digital Tourism Volume 3(1), 66-75.

Dinov, Igor (2019): “F -Distribution Tables”. In: Statistics Online Computational Resource (SOCR). http://www.socr.ucla.edu/Applets.dir/F_Table.html (10.02.2021).

Deloitte (2018): “Im Smartphone-Rausch Studie zur Smartphone Nutzung: Deutsche Mobilfunknutzer im Profil“. In: https://www.zeitfokus.de/downloads-public/documents/deloitte/258-deloitte-studie-im-smartphone-rausch-deutsche-mobilfunknutzer-im-profil/file (10.02.2021).

Dimitrova Daniela/**Matthes**, Jörg (2018): “Social Media in Political Campaigning Around the World: Theoretical and Methodological Challenges”. In: Journalism and Mass Communication Quarterly 2018, Vol. 95(2), 333-342.

Donges, Patrick/**Jarren**, Otfried (2017): "Akteure politischer Kommunikation III: Politische PR“. In: Bentele, G. Brosiui, H.-B., Jarren, O. (Eds.): Politische Kommunikation in der Mediengesellschaft - Eine Einführung, Wiesbaden: Springer Fachmedien, 143-155.

Eckerl, Thomas/**Hahn**, Oliver (2018): "Die Selfie-Seite der Macht: Instagram in der politischen Kommunikation in Deutschland". In: Oswald, Michael/Johann, Michael (Eds.): Strategische Politische Kommunikation im digitalen Wandel - Interdisziplinäre Perspektiven auf ein dynamisches Forschungsfeld, Wiesbaden: Springer Fachmedien, 237-257.

Eberl, Jakob-Moritz/**Boomgaarden**, Hajo G. (2020): "Wahlkampfkommunikation". In: Faas, Thorsten/Gabriel, Oscar W./Maier, Jürgen (Eds.): Politikwissenschaftliche Einstellungs- und Verhaltensforschung – Handbuch für Wissenschaft und Studium, Baden-Baden: Nomos, 164-183.

Edelmann, David/**Salsberg**, Brian (2010): „Beyond paid media: Marketing’s new vocabulary“. In: McKinsey Quarterly: marketing & sales practice. https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/beyond-paid-media-marketings-new-vocabulary (14.02.2021).

Elving, Wim J.L./**Postma**, Rosa May (2017): "Social Media: The dialogue myth? How organizations use social media for stakeholder dialogue." In: van Ruler, Betteke/Smit, Iekje/Ihlen, Øyvind/Romenti, Stefania (Eds.): How Strategic Communication Shapes Value and Innovation in Society Advances in Public Relations and Communication Management, Volume 2, Bingley: emerald publishing, 123-141.

Eyal, Nir (2014): "Hooked". New York: Penguin.

Falter, Jürgen W./**Römmele**, Andrea (2002): “Professionalisierung bundesdeutscher Wahlkämpfe, oder: Wie amerikanisch kann es werden?”. In: Berg, Thomas (Ed.) Moderner Wahlkampf – Blick hinter die Kulissen, Opladen: Leske + Budrich, 49-63.

Farci Manolo/**Orefice**, Mario (2015): "Hybrid Content Analysis of the Most Popular Politicians' Selfies on Twitter". In: Networking Knowledge 8(6), 1-25.

Filimonov, Kirill/**Russmann**, Uta/**Svensson**, Jakob (2016): "Picturing the Party: Instagram and Party Campaigning in the 2014 Swedish Elections". In: Social Media + Society July-September 2016, 1-11.

Fröhlich, Romy (2015): "Zur Problematik der PR-Definition(en)". In: Fröhlich, Romy/Szyszka, Peter/Bentele, Günter (Eds.): Handbuch der Public Relations. Wissenschaftliche Grundlagen und berufliches Handeln. Mit Lexikon, Wiesbaden: Springer Fachmedien, 103-120.

Funk, Stephan M./**Rusowsky**, Daniela (2014): "The importance of cultural knowledge and scale for analysing internet search data as a proxy for public interest toward the environment". In: Biodiversity Conservation (2014) 23, 3101-3112.

Funk, Carolyn (1996): “Understanding trait inferences in candidate images.” In: Delli Carpini, Michael X./ Huddy, Leonie/ Shapiro, Robert Y. (Eds.): Research in Micropolitics: Rethinking Rationality. Greenwich, CT: JAI Press, 97-123.

Gabriel, Oscar W./**Maier**, Jürgen/**Faas**, Thorsten (2020): „Politikwissenschaftliche Einstellungs- und Verhaltensforschung“. In: Politikwissenschaftliche Einstellungs- und Verhaltensforschung – Handbuch für Wissenschaft und Studium Nomos Verlagsgesellschaft, Baden-Baden 2020, 17-90.

Gallagher, Michela/**Chiba**, Andrea A. (1996): "The amygdala and emotion". In: Current Opinion in Neurobiology 1996(6), 221-227.

Glantz, Mark (2013): “Instagram”. In: Harvey, Kerric (Ed.): Encyclopedia of Social Media and Politics, Los Angeles: SAGE, 694-696.

Google Scholar (2021): Citation for article "Taking the “Low Road” with Subliminal AdvertisementsA Study Testing the Effect of Precognitive Prime “RATS” in a 2000 Presidential Advertisement". In: Google Scholar. https://scholar.google.de/scholar?hl=enandas_sdt=0%2C5andq=taking+the+low+road+stewartandbtnG (10.02.2021).

Google Trends FAQ (2020): “FAQ about Google Trends data”. In: Trends Help. https://support.google.com/trends/answer/4365533?hl=en (15.10.2020).

Grabe, Marie Elizabeth/**Bucy**, Erik Page (2009): "Image Bite Politics: News and the Visual Framing of Elections", Oxford: Oxford University Press.

Graber, Doris A./**Smith**, James M. (2005): "Political Communication Faces the 21st Century". In: Journal of Communication, 479-507.

Grassegger, Hannes/**Krogerus**, Mikael (2016): "Ich habe nur gezeigt, dass es die Bombe gibt". In: Das Magazin. https://www.dasmagazin.ch/2016/12/03/ich-habe-nur-gezeigt-dass-es-die-bombe-gibt/ (paywall, 10.02.2021). See Appendix 13 for PDF File of the text.

The Guardian (2018): “Cambridge Analytica whistleblower: 'We spent $1m harvesting millions of Facebook profiles'”. In: YouTube recording of interview with Christopher Wylie (17.03.2018). https://www.youtube.com/watch?v=FXdYSQ6nu-M (10.02.2021). See Appendix 13 for video.

de Haan, Evert/**Wiesel**, Thorsten/**Pauwels**, Koen (2015): "The effectiveness of different forms of online advertising for purchase conversion in a multiple-channel attribution framework". In: International Journal of Research in Marketing 33 (2016), 491-507.

Hardy, Bruce W. (2018): "Candidate Traits and Political Choice". In: Kenski, Kate/Jamieson, Kathleen Hall (Eds.): The Oxford Handbook of Political Communication, Oxford: Oxford University Press, 1-15.

Harris, Lisa/**Rae**, Alan (2011): "Building a personal brand through social networking". In: Journal of Business Strategy, Vol. 32 (5), 14-21.

Haßler, Jörg/**Kruschinski**, Simon (2019): "Vernetzte Kampagne?!". In: Holtz-Bacha, Christina (Ed.): Die (Massen-)Medien im Wahlkampf, Wiesbaden: Springer Fachmedien, 73-95.

Heekeren, Hauke R./**Marret**, Sean/**Ungerleider**, Leslie G. (2008): "The neural systems that mediate human perceptual decision making". In: Nature Reviews Neuroscience 9(2008), 467- 479.

Heise (2020): "Facebook: Nutzerzahlen legen zu". In: Heise RegioConcept. https://www.heise-regioconcept.de/social-media/facebook-nutzerzahlen-in-d-a-ch (10.02.2021).

Herbers, Martin R. (2018): „Zwischen Likes und Lachen. Die strategische Produktion und Rezeption von Politischer Komik im Fernsehen und im Internet“. In: Oswald, Michael/Johann, Michael (Eds.): Strategische Politische Kommunikation im digitalen Wandel - Interdisziplinäre Perspektiven auf ein dynamisches Forschungsfeld, Wiesbaden: Springer Fachmedien, 319-337.

Holtz-Bacha, Christina (2002): “Massenmedien und Wahlen. Die Professionalisierung der Kampagnen”. In: Aus Politik und Zeitgeschichte (2002) B 15-16, 23-28.

Hügelmann, Bendix (2020): "Dabei sein ist alles?". In: Politik & Kommunikation 11/2020. https://politicalinfluencers.files.wordpress.com/2020/06/huegelmann_puk_instagram.pdf (10.02.2021).

Igwebuike, Ebuka Elias/**Chimuanya**, Lily (2021): “Legitimating falsehood in social media: A discourse analysis of political fake news”. In: Discourse and Communication 15(1), 42-58.

Joathan, Ícaro/**Lilleker**, Darren G. (2020): “Permanent Campaigning: A Meta-Analysis and Framework for Measurement”. In: Journal of Political Marketing, 1-19.

Johnson, Katryna (2017): "The Importance of Personal Branding in Social Media: Educating Students to Create and Manage their Personal Brand". In: International Journal of Education and Social Science, Vol. 4 (1), 21-27.

Jungherr, Andreas (2017): “Die Zukunft des datengestützten Haustürwahlkampfs entscheidet sich jetzt“. In: Voigt, Mario/Böttger, Jan/Güldenzopf, Rene (Eds.): Wahlanalyze 2017 Berlin: Epubli, 110-114.

Jungherr, Andreas (2020): “Kommunikation auf sozialen Netzwerkplattformen“. In: Faas, Thorsten/Gabriel, Oscar W./Maier, Jürgen (Eds.): Politikwissenschaftliche Einstellungs- und Verhaltensforschung – Handbuch für Wissenschaft und Studium, Baden-Baden: Nomos, 184-208.

Jenkinson, Angus (2007): "Evolutionary implications for touchpoint planning as a result of neuroscience: A practical fusion of database marketing and advertising". In: Database Marketing and Customer Strategy Management Vol. 14(3), 164–185.

Kahneman, Daniel (2011): “Thinking, Fast and Slow”. London: Random House.

Kahneman, Daniel/**Tversky**, Amos (1992): “Advances in prospect theory: Cumulative representation of uncertainty”. In: Journal of Risk and Uncertainty, 5(4), 297-323.

Kaputa, Catherine (2005): “UR a Brand! How Smart People Brand Themselves for Business Success”. Mountain View, CA: Davies-Black Publishing.

Kligler-Vilenchik, Neta/**de Vries Kedem**, Maya/**Maier**, Daniel/**Stoltenberg**, Daniela (2020): “Mobilization vs. Demobilization Discourses on Social Media”. In: Political Communication 2020, 1-20.

Knoll, Johannes/**Matthes**, Jörg/**Heiss**, Raffael (2018): "The social media political participation model: A goal systems theory perspective". In: Convergence: The international Journal of Research into New Media Technologies, 1-22.

Kreiss, Daniel (2016): “Prototype Politics: Technology Intensive campaigning and the data of democracy”. New York: Oxford University Press.

Kruschinski, Simon (2017): “Der datengestützte Tür-zu-Tür-Wahlkampf bei der Bundestagswahl 2017“. In: Voigt, Mario/Böttger, Jan/Güldenzopf, Rene (Eds.): Wahlanalyze 2017 Berlin: Epubli, 102-109.

Kruger, Daniel J./**Djerf**, Jaikob (2017): "Bad Vibrations? Cell phone dependency predicts phantom communication experiences". In: Computers in Human Behavior 70(2017), 360-364.

Labrecque, Laure L./**Markos**, Ereni/**Milne**, George R. (2011): "Online Personal Branding: Processes, Challenges, and Implications". In: Journal of Interactive Marketing 2011(25), 37-50.

land.nrw (2020): “Stufenweise Öffnungen bei den Maßnahmen in der Corona-Pandemie”. In: Wir in NRW. Das Landesportal. https://www.land.nrw/de/media/galerie/ministerpraesident-armin-laschet-stellt-nordrhein-westfalen-plan-vor (15.10.2020).

Latimer, Amy E./**Rench**, Tara A./**Rivers**, Susan E./**Katulak**, Nicola A./**Materese**, Stephanie A./**Cadmus**, Lisa/**Hicks**, Althea/**Hodorowski**, Julie Keany/**Salovey**, Peter (2008): “Promoting participation in physical activity using framed messages: An application of prospect theory”. In: British Journal of Health Psychology, 659-681.

Levy, Steven (2020): “Facebook: The Inside Story”. New York, NY: Blue Rider Press.

Liebhart, Karin/**Bernhardt**, Petra (2017). “Political Storytelling on Instagram – Key Aspects of Alexander Van der Bellen’s Successful 2016 Presidential Election Campaign”. In: Media and Communication 5(4), 15-25.

Lindgaard, Gitte/**Fernandes**, Gary/**Dudek**, Cathy/**Brown**, Judith (2006): “Attention web designers: You have 50 milliseconds to make a good first impression”. In: Behavior and Information Technology 25(2), 115-126.

Lodge, Milton/**Stroh**, Patrick (1993): “Inside the mental voting booth: An impression- driven process model of candidate evaluation”. In: Iyengar, Shanto/McGuire, William J. (Eds.): Explorations in Political Psychology, Durham, NC: Duke University Press, 225-263.

Lorenz-Spreen, Philipp/**Lewandowsky**, Stephan/**Sunstein**, Cass R./**Hertwig**, Ralph (2020): “How behavioral sciences can promote truth, autonomy and democratic discourse online”. In: Nature Human Behavior 4(2020), 1102-1109.

Lovett, Mitchell J./**Staelin**, Richard (2016): "The Role of Paid, Earned, and Owned Media in Building Entertainment Brands: Reminding, Informing, and Enhancing Enjoyment". In: Marketing Science 35(1), 142-157.

Lupia, Arthur/**McCubbins**, Mathew D. (1998): "The Democratic dilemma: Can citizens learn what they need to know?". Cambridge, UK: Cambridge University Press.

Macnamara, Jim/**Lwin**, May/**Adi**, Ana/**Zerfass**, Ansgar (2016): "'PESO' media strategy shifts to 'SOEP': Opportunities and ethical dilemmas". In: Public Relations Review Volume 42(3), 377-385.

Mahoney, Jamie/**Feltwell**, Tom/**Ajuruchi**, Obinna/**Lawson**, Shaun (2016): "Constructing the Visual Online Political Self: An Analysis of Instagram Use by the Scottish Electorate". In: Politics on Social Media, proceedings #chi4good, CHI 2016, San Jose, CA, 3339-3351.

Matamoros-Fernández, Ariadna/**Farkas**, Johan (2020): "Racism, Hate Speed, and Social Media: A Systematic Review and Critique". In: Television and New Media 22(2), 205–224.

Mayerl, Jochen/**Faas**, Thorsten (2018): "Campaign dynamics of cognitive accessibility of political judgments: measuring the impact of campaigns and campaign events using response latencies in two German rolling cross section studies". In: Quality and Quantity (2018) 52, 1575-1592.

McGregor, Shannon C. (2018): "Personalization, social media, and voting: Effects of candidate self-personalization on vote intention". In: New media and society 20(3), 1139-1160.

McLuhan, Marschall (1964): "Understanding Media: The Extensions of Man". New York: McGraw Hill Education.

Milman, Oliver (2019): "Chimpstagram: Video of ape browsing app goes viral - but what is going on?". In: The Guardian. https://www.theguardian.com/world/2019/may/02/instagram-chimp-video-ape-browsing-app-goes-viral (10.02.2021). See Appendix 13 for video.

Muñoz, Caroline L./**Towner**, Terri L. (2017): "The Image is the Message: Instagram Marketing and the 2016 Presidential Primary Season." In: Journal of Political Marketing, 16(3- 4), 290-318.

Newman, Nic/**Fletcher**, Richard/**Schulz**, Anne/**Andi**, Simge/**Kleis Nielsen**, Rasmus (2020): "Reuters Institute Digital News Report 2020". In: Reuters Institute Digital News Report. https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf (10.02.2021).

Nghiem, Le T.P./**Papworth**, Sarah K./**Lim**, Felix K.S./**Carraso**, Luis R. (2016): "Analysis of the Capacity of Google Trends to Measure Interest in Conservation Topics and the Role of Online News". In: PLOS ONE 11(3), 1-12.

Nix, Alexander (2016): "Cambridge Analytica - The Power of Big Data and Psychographics". In: YouTube recording Concordia Annual Summit 2016. https://www.youtube.com/watch?v=n8Dd5aVXLCc (10.02.2021). See Appendix 13 for video file.

Nix, Alexander (2017): "Alexander Nix: From Mad Men to Math Men | OMR Festival 2017 - Hamburg, Germany | #OMR17". In: YouTube recording OMR Festival 2017. https://www.youtube.com/watch?v=6bG5ps5KdDo (10.02.2021). See Appendix 13 for video file.

Ohme, Jakob (2019): "When digital natives enter the electorate: Political social media use among first-time voters and its effects on campaign participation". In: Journal of Information Technology and Politics, 1-18.

Olds, James/**Milner**, Peter (1954): "Positive reinforcement produced by electrical stimulation of septal area and other regions of rat brain". In: Journal of Comparative and Physiological Psychology 47(6), 419-427.

Olins, W. (2003): “On Brand”. London: Thames and Hudson.

Oliver, Mathieu Alemany/**Vayre**, Jean-Sébastien (2015): "Big data and the future of knowledge production in marketing research: Ethics, digital traces, and abductive reasoning". In: Journal of Marketing Analytics 3, 5-13.

Oswald, Michael/**Johann**, Michael (2018): „Strategische Politische Kommunikation als ein interdisziplinäres Forschungsfeld“. In: Oswald, Michael/Johann, Michael (Eds.): Strategische Politische Kommunikation im digitalen Wandel. Interdisziplinäre Perspektiven auf ein dynamisches Forschungsfeld. Wiesbaden: Springer Fachmedien, 1-6.

Ovens, Carsten (2017): „Der Einfluss von Social Media auf das Wahlverhalten von Erstwählern“. In: Voigt, Mario/Böttger, Jan/Güldenzopf, Rene (Eds.): Wahlanalyze 2017 Berlin: Epubli, 74-78.

Podschuweit, Nicole (2016): „Politische Werbung“. In: Siegert, Gabriele/Wirth, Werner/Weber, Patrick/Lischka, Juliane A. (Eds.): Handbuch Werbeforschung. Wiesbaden: Springer Fachmedien, 635-667.

Peters, Tom (1997): “The Brand called You”. In: Fast Company. https://www.fastcompany.com/28905/brand-called-you (10.02.2021).

Pfetsch, Barbara/**Esser**, Frank (2004): “Comparing Political Communication: Theories, Cases, and Challenges”. New York: Cambridge University Press.

Philiastides, Marios G./**Ratcliff**, Roger (2013): "Influence of Branding on Preference-Based Decision Making". In: Psychological Science 24(7), 1208-1215.

Pontzen, Daniel (2013): “Politiker in der Medialisierungsspirale? Eine AbgeordnetenBefragung auf Landes-, Bundes- und EU-Ebene“. Marburg: Tectum.

Popkin, Samuel L. (1994): “The reasoning voter: Communication and persuasion in presidential campaigns”. Chicago: University of Chicago Press.

Raabe, Lea (2018): “Diskursstrategien in Online- Teilöffentlichkeiten am Beispiel der Jungen Alternative für Deutschland“. In: Oswald, Michael/Johann, Michael (Eds.): Strategische Politische Kommunikation im digitalen Wandel. Interdisziplinäre Perspektiven auf ein dynamisches Forschungsfeld. Wiesbaden: Springer Fachmedien, 165-185.

Radunski, Peter (1980): “Wahlkämpfe. Moderne Wahlkampfführung als politische Kommunikation (Olzog Studienbuch)”. München: Olzog.

Robertson, John (2018): “Prospect Theory, Loss Aversion, and the Impact of Social Media and Online Activity: Political Affect and the 2016 American Presidential Elections”. In: Oswald, Michael/Johann, Michael (Eds.): Strategische Politische Kommunikation im digitalen Wandel. Interdisziplinäre Perspektiven auf ein dynamisches Forschungsfeld. Wiesbaden: Springer Fachmedien, 63-95.

Rolls, Edmund T. (1974): "The neural basis of brain-stimulation reward". In: Progress in Neurobiology 3(2), 71-160.

Roßteutscher, Sigrid/**Schmitt-Beck**, Rüdiger/**Schoen**, Harald/**Weßels**, Bernhard/**Wolf**, Christof/**Bauer**, Irina/**Chalupa**, Julia/**Dietz**, Melanie/**Kratz**, Sophia/**Kühn**, Marie/**Roßmann**, Joss/**Scherer**, Philipp/**Stövsand**, Lars-Christopher (2018): Langfrist- Online-Tracking, T40 (GLES). GESIS Datenarchiv, Köln: ZA6824 Datenfile Version 1.0.0, doi: 10.4232/1.13013.

Russmann, Uta/**Svensson,** Jakob (2016): "Studying Organizations on Instagram". In: Information 7(2016), 1-12.

Sapolsky, Robert M. (1994): "Why Zebras Don't Get Ulcers". New York: Henry Holt and Company.

Sarcinelli, Ulrich (2011): “Politische Kommunikation in Deutschland Medien und Politikvermittlung im demokratischen System“. Wiesbaden: Springer VS.

Schemer, Christian/**Geiß**, Stefan (2020): “Massenkommunikation“. In: Faas, Thorsten/Gabriel, Oscar W./Maier, Jürgen (Eds.): Politikwissenschaftliche Einstellungs- und Verhaltensforschung – Handbuch für Wissenschaft und Studium, Baden-Baden: Nomos, 141-163.

Schmitt-Beck, Rüdiger (2002): “Das Nadelöhr am Ende: Die Aufmerksamkeit der Wähler für die Wahlkampfkommunikation als Voraussetzung wirksamer Kampagnen“. In: Machnig, Mathias (Ed.): Politik – Medien – Wähler Wahlkampf im Medienzeitalter, Wiesbaden: Springer VS, 21-48.

Schoen, Harald (2014): “Wahlkampfforschung“. In: Falter, Jürgen W./Schoen, Harald (Eds.) Handbuch Wahlforschung, Wiesbaden: Springer Fachmedien, 661-728.

Schulz, Winfried (1998b): “Wahlkampf unter Vierkanalbedingungen. Kampagnenmanagement, Informationsnutzung und Wählerverhalten”. In: Media Perspektiven 8, 378-391.

Schulz, Winfried (2008): “Politische Kommunikation. Theoretische Ansätze und Ergebnisse“. Wiesbaden: Springer VS.

Schumann, Sandy/**Boer**, Diana/**Hanke**, Katja/**Liu**, James (2019): "Social media use and support for populist radical right parties: assessing exposure and selection effects in a two-wave panel study". In: Information, Communication and Society, 1 – 20.

Serrano, Juan Carlos Medina/**Shahrezaye**, Morteza/**Papakyriakopoulos**, Orestis/**Hegelich**, Simon (2019): "The Rise of Germany's AfD: A Social Media Analysis". In: Proceedings of International Conference on Social Media and Society, Toronto, ON, Canada, July 19–21, 2019 (SMSociety '19) https://www.researchgate.net/publication/334155685_The_Rise_of_Germany%27s_AfD_A_Social_Media_Analysis (10.02.2021).

Solon, Olivia/**Laughland**, Oliver (2018): "Cambridge Analytica closing after Facebook data harvesting scandal". In: The Guardian. https://www.theguardian.com/uk-news/2018/may/02/cambridge-analytica-closing-down-after-facebook-row-reports-say (10.02.2021).

Statista (2020): "Entwicklung der verkauften Auflage der Tageszeitungen in Deutschland in ausgewählten Jahren von 1991 bis 2020". In: Statista Portal. https://de.statista.com/statistik/daten/studie/72084/umfrage/verkaufte-auflage-von-tageszeitungen-in-deutschland/ (10.02.2021).

Statistik Hessen (2018): „Landtagswahl 2018. Statistik.Hessen". In. Statistik Hessen. https://www.statistik-hessen.de/l_2018/html/landesergebnis (10.02.2021).

Steffan, Dennis (2020): "Visual Self-Presentation Strategies of Political Candidates on Social Media Plattforms: A Comparative Study". In: International Journal of Communication 14 (2020), 3096-3118.

Stewart, Patrick A./**Schubert**, James N. (2006): "Taking the "Low Road" with Subliminal Advertisements A Study Testing the Effect of Precognitive Prime "RATS" in a 2000 Presidential Advertisement". In: Press/Politics 11(4), 103-114.

Sumter, Sindy/**Vandenbosch**, Laura/**Ligtenberg**, Loes (2017): "Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder". In: Telematics and Informatics 34(1), 67-78.

Sylvester, Ericka (2012): “Instagram emerges as a political communications medium”. In: The Heritage Foundation. http://www.heritage.org/node/3253/print-display (10.02.2021).

Tanis, Martin/**Beukeboom**, Camiel J./**Hartmann**, Tilo/**Vermeulen**, **Ivar** E. (2015): "Phantom phone signals: An investigation into the prevalence and predictors of imagined cell phone signals". In: Computers in Human Behavior 51(2015), 356-362.

Tenscher. Jens (1998): “Politik für das Fernsehen – Politik im Fernsehen. Theorein, Trends und Perspektiven”. In: Sarcinelli, Ulrich (Ed.): Politikvermittlung und Demokratie in der Mediengesellschaft. Bd. 352, Bonn/Wiesbaden: Schriftreihe BPB/Springer VS, 184-208.

Todorov, Alexander/**Mandisodza**, Anesu N./**Goren**, Amir/**Hall**, Chrystal C. (2005): "Inferences of Competence from Faces Predict Election Outcomes". In: Science Vol. 308, 1623-1626.

Voigt, Mario/**Clemens**, Conrad (2017): “Wenn Politik an der Haustür klingelt“. In: Voigt, Mario/Böttger, Jan/Güldenzopf, Rene (Eds.): Wahlanalyze 2017 Berlin: Epubli, 93-101.

Voigt, Mario/**Seidenglanz**, Rene (2017): „Trendstudie Digital Campaigning in der Bundestagswahl 2017 - Implikationen für Politik und Public Affairs.“ Retrieved from: https://www.medianet-bb.de/wp-content/uploads/2018/01/quadriga-digital-campaigning-studie-btw2017.pdf (10.02.2021).

Voigt, Mario/**Böttger**, Jan/**Güldenzopf**, Rene (2017): “Wahlanalyse 2017“. Berlin: Epubli.

Vowe, Gerhard/**Wolling**, Jens (2000): Amerikanisierung des Wahlkampfs oder Politisches Marketing? Zur Entwicklung der politischen Kommunikation". In: Kamps, Klaus (Ed.): Trans-Atlantik – Trans-Portabel? Die Amerikanisierungsthese in der politischen Kommunikation. Kamps, Wiesbaden: Springer VS, 57-92.

Ward, Adrian F./**Duke**, Kristen/**Gneezy**, Ayelet/**Bos**, Maarten W. (2017): "Brain Drain: The mere presence of one's own smartphone reduces available cognitive capacity". In: Journal of the Association for Consumer Research 2(2), 140-154.

Wilke, Tabea (2017): "Social Bots – die unberechenbare Armee im Wahlkampf". In: Voigt, Mario/Böttger, Jan/Güldenzopf, Rene (Eds.): Wahlanalyze 2017 Berlin: Epubli, 88-92.

Wilmer, Henry H./**Chein**, Jason M. (2016): "Mobile technology habits: patterns of association among device usage, intertemporal preference, impulse control, and reward sensitivity". In: Psychonomic Bulletin and Review 23, 1607–1614.

Wolfangel, Eva (2016): "Haben psychologische Facebook-Daten Trumps Sieg verursacht?". In: Spektrum Wissenschaft. https://www.spektrum.de/kolumne/haben-psychologische-facebookdaten-trumps-sieg-verursacht/1431745 (10.02.2021).

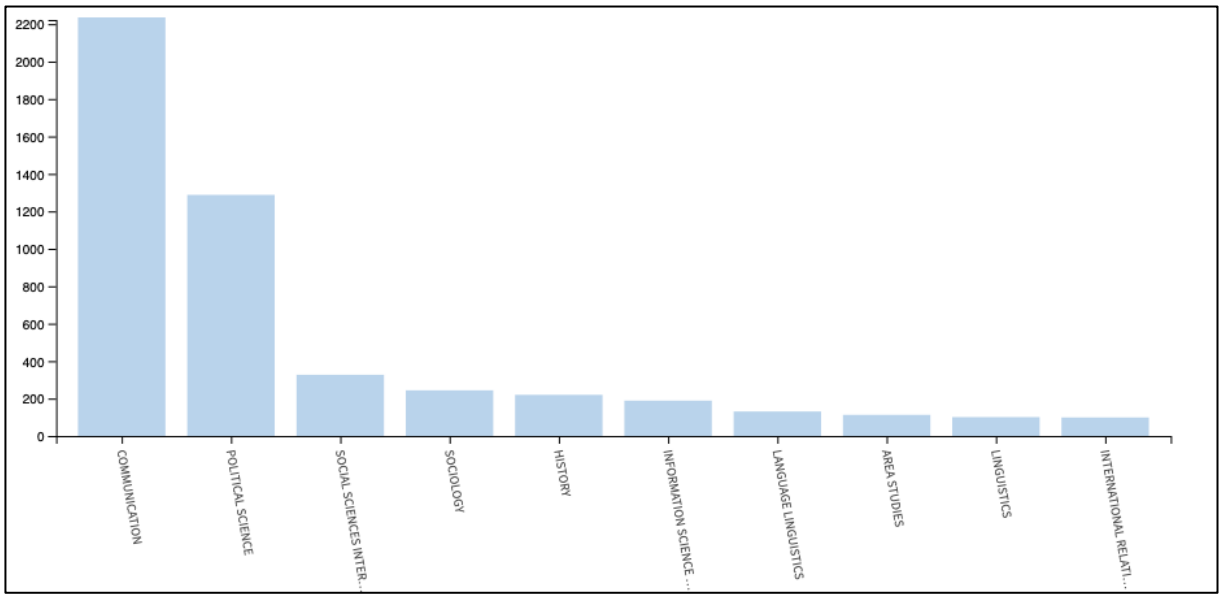
Wortham, Jenna (2012): "The Presidential Campaign on Social Media". In: The New York Times. http://archive.nytimes.com/www.nytimes.com/interactive/2012/10/08/technology/campaign-social-media.html?_r=0 (10.02.2021).

Die Zeit (2019): " Schwere Vorwürfe gegen SPD-Chefin", In: Die Zeit. https://www.zeit.de/politik/deutschland/2019-12/sakia-esken-spd-landeselternbeirat-baden-wuerttemberg-vorwuerfe-kuendigung-kontraste (10.02.2021).

8 Appendix

Appendix 1: Results keyword research ‘political communication’ on the Web of Science/Social Sciences Citation Index

The figures below illustrate the distribution of cited work in the field of ‘political communication’ ranked on the SSCI. The figures show the relative numbers distributed across fields of study.



Search result: SSCI ‘Political Communication’, 1945-2020, N=4.402.

Appendix 2: Additional tables chapter 3

Descriptive statistics referred to in chapter 3. **Table 3** shows mean share of first votes across parties and the corresponding distribution of Instagram-usage across parties. **Table 7** summarizes the posting behavior by the observed politicians over the survey-period of 53 days.

Table 3: Mean share of first votes across parties, distribution of Instagram-usage.

	MPs who used Instagram		**MPs who did not use Instagram**	
	First Vote %	**N politicians**	**First Vote %**	**N politicians**
CDU	38.26	84	37.02	116
CSU	43.38	22	45.33	24
SPD	28.42	88	28.22	65
AfD	15.00	34	13.11	60
Die Linke	14.33	26	11.69	43
Greens	11.71	37	10.96	30
FDP	7.9	57	8.28	23

Table 7: Descriptive statistics Instagram usage over 53 days.

	Post total	Posts per day	Post min	Post max	Mean growth	Mean engage
Martin Schulz	56	1,1	0	6	1,13	4,7
Joachim Herrmann	54	1,01	0	4	0,51	2,79
Katrin Göring-Eckardt	72	1,4	0	4	0,88	4,55
Cem Özdemir	96	1,8	0	5	2,13	6,26
Christian Lindner	79	1,5	0	4	0,95	4,1
Dr. Alice Weidel	10	0,2	0	2	1,57	2,37
Dr. Peter Tauber	53	1	0	2	0,16	2,21
Andreas Scheuer	104	2	0	6	0,22	2,51
Hubertus Heil	21	0,4	0	2	1,13	4,1
Nicola Beer	101	1,9	0	14	0,82	4,38
Beatrix von Storch	63	1,2	0	3	1,5	7,28
Sample Mean	*64,5*	*1,2*	*0*	*4,7*	*1*	*4,1*

Appendix 3. Data used in chapter 3

The following guides through the data used in chapter three. The statistics presented in this dissertation were calculated using Stata v.15.1.

The data used in the analyzes in chapter 3 can be found on the USB-drive enclosed with this dissertation. On the drive, there is a folder named "*01_Chapter_3*". This folder contains sub-folders for every table and/or figure presented in this chapter. The individual sub-folders contain the raw data in Excel-format and the corresponding Stata-file. In addition, a Stata Do-File accompanies every regression-folder. The Do-Files contain detailed information of the steps used in calculating the results. You may either read in the Excel-file (use first row as variable names) or use the Stata-file respectively.

The list of folders below provides guidance:

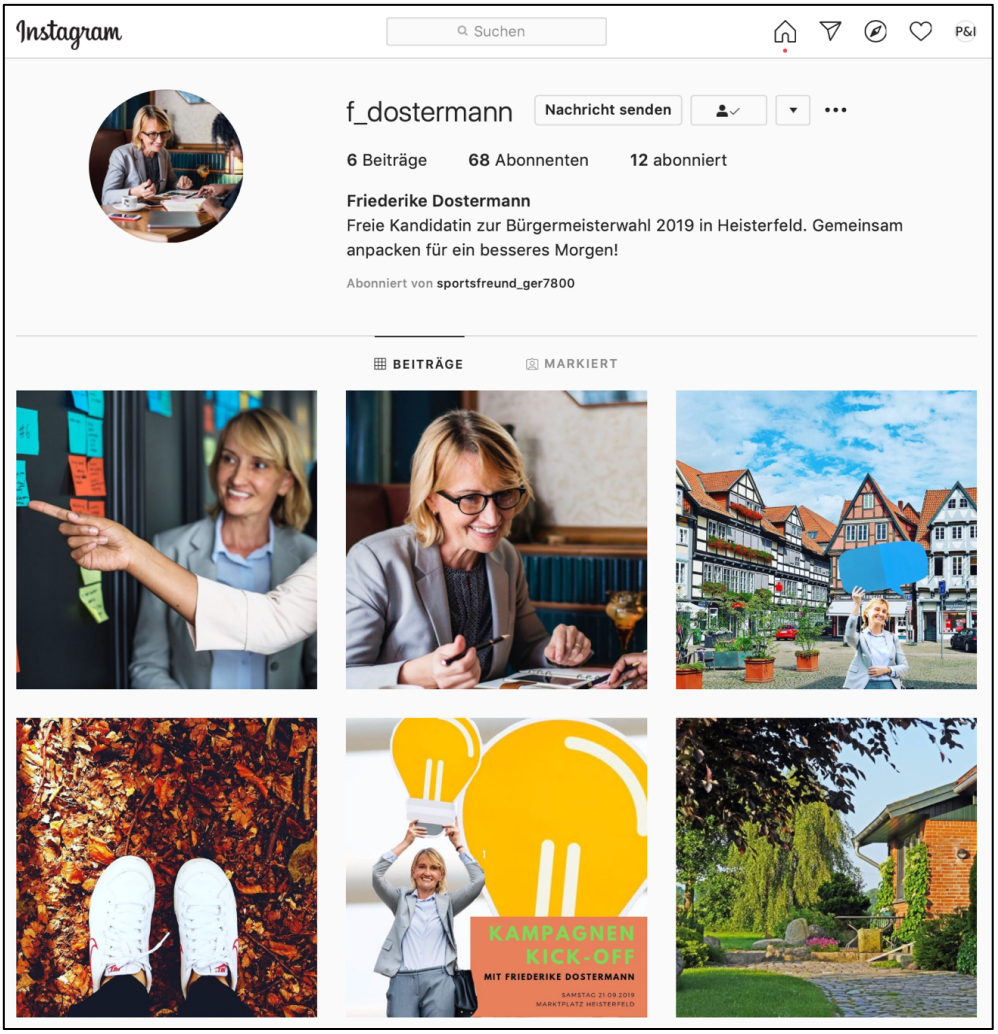
- *"Figure_2 and Figure_3"*
- *"Table2_Turnout_Constituencies"*
- *"Table3_Mean share of first votes across parties, 2017 German Federal Election"*
- *"Table4_Instagram a driver for share in first votes"*
- *"Table5_OLS Regression"*
- *"Table6_Panel data analysis"*
- *"Table7_descriptive statistics"*

Appendix 4: Stimuli used in the laboratory experiment in chapter 4

The following content was used in the laboratory experiment in chapter 4. Free stock-images were used for creating the stimuli. Below you find images of both the analogue and the digital stimuli.

Digital Stimulus

The digital stimulus was served via Instagram. The corresponding account @f_dostermann is still online and available for browsing the content. Below are screenshots of the Instagram profile as also of every post. The profile of "Friederike Dostermann" contains a mixture of images from the private and the public realm and resembles the usage of real-life politicians observed in Germany.



Overview Profile

Individual posts

Post 1: Private realm

Post 2: Campaign material and event announcement

Post 3: Private realm

Post 4: Rally image

Post 5: Professional image creation 1

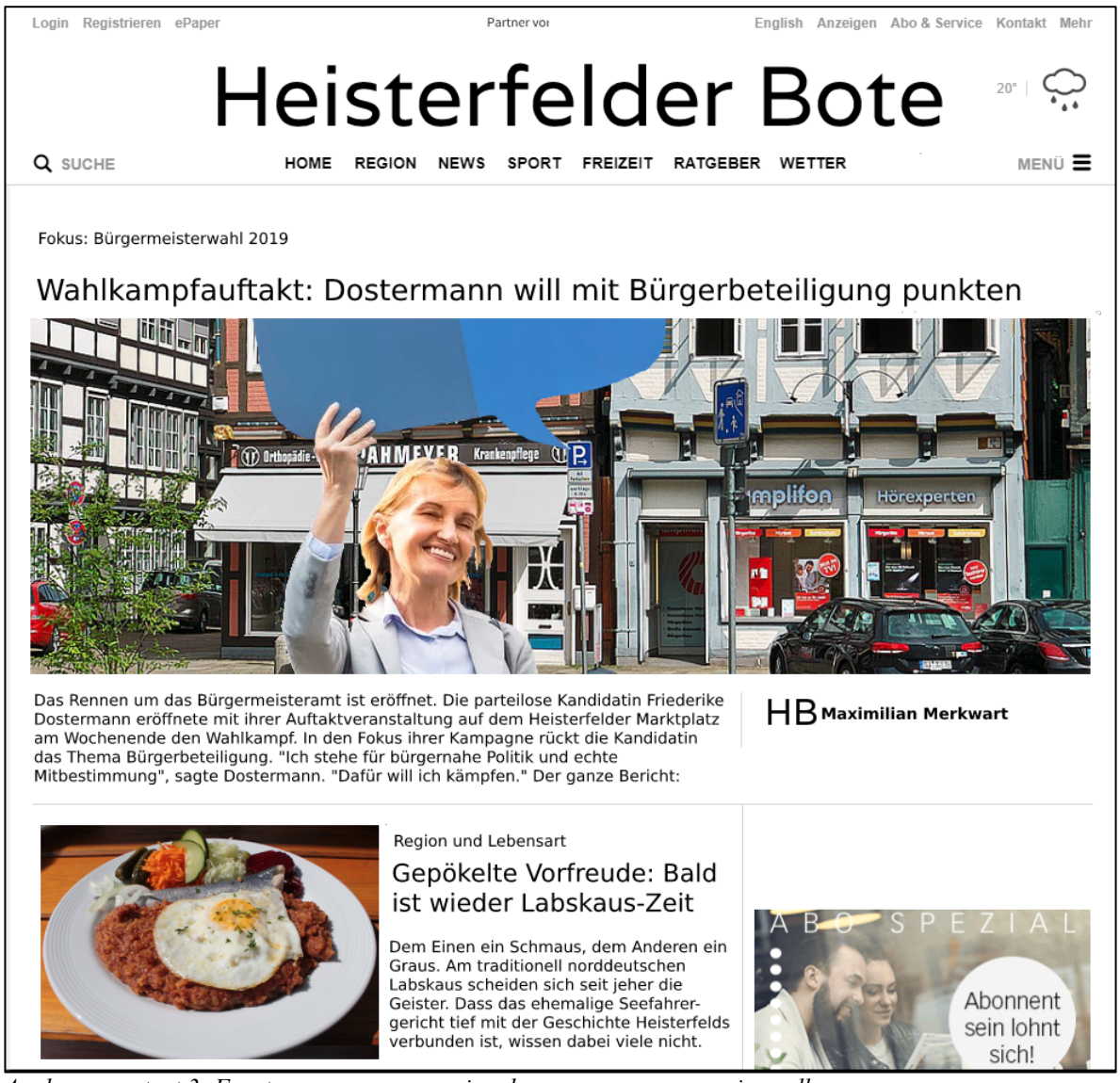
Post 6: Professional immage creation 2

Analogue stimulus: Print content

The analogue stimulus contained of different printed out mock-up newspaper articles and related physical material. The images and text used in the analogue stimuli are identical to the digital stimuli. The selection of mock-up material was created with regional newspapers, listings magazines and campaign material in mind.

Analogue content 1: Listings magazin of "Heisterfeld"

Analogue content 2: Campaign flyer



Analogue content 3: Front page coverage regional newspaper on campaign rally

Analogue content 4: Listings magazin, portrait-type article

Analogue content 5: Regional newspaper, portrait-type article

Appendix 5: Predictor variables, outcome variables and covariates used in the analyses for chapter 4

Predictor Variables

The list below summarizes the key facts about the predictor variables that derived from the questionnaire used in the experiment. The entire questionnaire can be found in Appendix 4.

Digital treatment	A grouping variable separating the digital treatment group from the analogue treatment group. (1 = digital group, 0 = analogue group).
Screen-time day	A numerical variable that expresses the 7-day average screen-time as reported by the participants from the iPhone-immanent screen-time-measurement (min: 35; max: 410; mean 192.45, in minutes)
Screen-time week	A numerical variable that expresses the total amount of screen-time recorded over the past week (min: 246; max: 2872; mean: 1312.8, in minutes).
Activations day	A numerical variable that expresses the number of times, the participant activated his or her smartphone per day (min: 24; max: 147; mean: 86.95).
Activations week	A numerical variable that expresses the number of times, the participant activated his or her smartphone over the course of a week (min: 147; max: 1029; mean: 572.6).
Activations peak	A numerical variable that issues the participants' peak amount of activations for the last week (min: 40; max: 203; mean: 125.6).
Notifications day	A numerical variable that expresses the number of notifications the participant receives on his or her smartphone on a seven day average (min: 6; max: 427; mean: 93.95).

Notifications week	A numerical variable that expresses the number of notifications the participant receives on his or her smartphone on a seven day period (min: 39; max: 2988; mean: 655.55).
Screen-time Instagram week	A numerical variable that expresses the individual screen-time spent with the Instagram app over the course of a week (min: 10; max: 651; mean: 242.3, in minutes).
Smoke	A grouping variable separating the smokers in the sample from the non-smokers (1 = smoker, 0 = non-smoker).
Nicotine	A numerical variable that expresses the amount of cigarettes smoked on a typical day as reported by the participants (min: 0; max: 12; mean: 3.35).
Follower	A numerical variable that expresses the amount of Instagram followers a participant has on his or her personal profile (min: 1; max: 2709; mean: 380.65).
Following	A numerical variable that expresses how many accounts the participants are following via their personal Instagram profile (min: 0; max: 620; mean: 234.75).
Private	A grouping variable separating the private profiles from the public Instagram profiles among the participants (1 = "my Instagram profile is private", 0 = "my Instagram profile is public").
Influencer	A grouping variable separating those who ever thought about becoming an Influencer from those who haven't (1 = "Yes, I ever did think about a career as Influencer", 0 = "No, I never did think about career as Influencer").
Gambling	A grouping variable asking for experience with any form of gambling activity during the past 12 months (1 = "Yes, I engaged with any form of gambling during the past 12 months"; 2 = "No, I did not").

Outcome Variables

The list below summarizes the key facts about the outcome variables that derived from the questionnaire.

Mobilize	A grouping variable asking for voting intention in the upcoming mayor-election in Heisterfeld. (1 = "I would take part in the election", 0 = "I would not take part in the election").
Time mobilize	A numerical variable that measures the time it took the participant to answer the question (min: 6.34; max: 23.57: mean: 11.55).
Mobilize yes	A grouping variable asking for whether or not the received information affected the candidates choice of voting (1 = "Yes, the information helped making the decision", 0 = "No, the information did not help me").
Time mobilize yes	A numerical variable that measures the time it took the participant to answer the question (min: 6.33; max: 394.28; mean: 37).
Mobilize no	A grouping variable asking for whether or not the received information affected the candidates choice of *not* voting (1 = "Yes, the information helped making the decision", 0 = "No, the information did not help me").
Mean reaction time	A numerical variable that expresses the mean reaction time across the questionnaire for every participant (min: 15.55; max: 65.89; mean: 32.29).
Candidate traits – Competence	A numerical variable. Participants were asked to rate the competence of Friederike Dostermann on a 7-point scale (1 = "lowest"; 7 = "highest").
Candidate traits – Charisma	A numerical variable. Participants were asked to rate the charisma of Friederike Dostermann on a 7-point scale (1 = "lowest"; 7 = "highest").
Candidate traits – Approachability	A numerical variable. Participants were asked to rate the openness of Friederike Dostermann on a 7-point scale (1 = "lowest"; 7 = "highest").

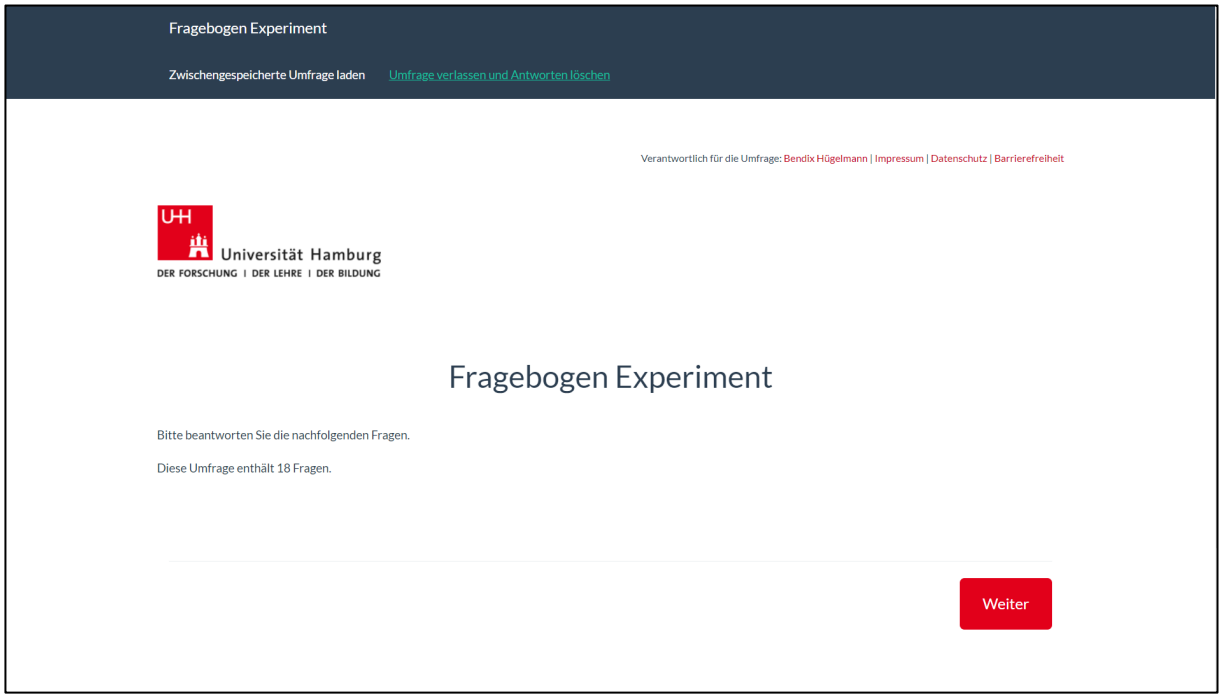
Candidate traits – Reliability	A numerical variable. Participants were asked to rate the reliability of Friederike Dostermann on a 7-point scale (1 = "lowest"; 7 = "highest").
Candidate traits - General appeal	A numerical variable. Participants were asked to rate the general appeal of Friederike Dostermann on a 7-point scale (1 = "lowest"; 7 = "highest").
Mean candidate traits	Numerical variable, mean value across all five candidate trait dimensions (min: 3.375; max: 6.25; mean: 4.92).
Political capital – Identification with the candidate	Numerical variable. Participants were asked to rate the following statement on a 7-point scale: "Friederike Dostermann is a politician with whom I can relate." (1 = "complete disagreement"; 7 = "complete approval").
Political capital - Trust in the candidates' agenda	Numerical variable. Participants were asked to rate the following statement on a 7-point scale: "Friederike Dostermann will take care of the important issues." (1 = "complete disagreement"; 7 = "complete approval").
Political capital – Charismatic figure	Numerical variable. Participants were asked to rate the following statement on a 7-point scale: "Friederike Dostermann is a charismatic figure." (1 = "complete disagreement"; 7 = "complete approval").
Mean political capital	Numerical variable, mean value across all three political capital statements (min: 3; max: 6.33; mean: 4.5515).
Mean candidate traits + political capital	Numerical variable. Combined mean value across all five candidate trait and all three political capital dimensions (min: 3.375; max: 6.25; mean: 4.91875).
Election result	Dummy variable expressing the participants willingness to vote for Friedrike Dostermann (1 = "Yes"; 2 = "No")

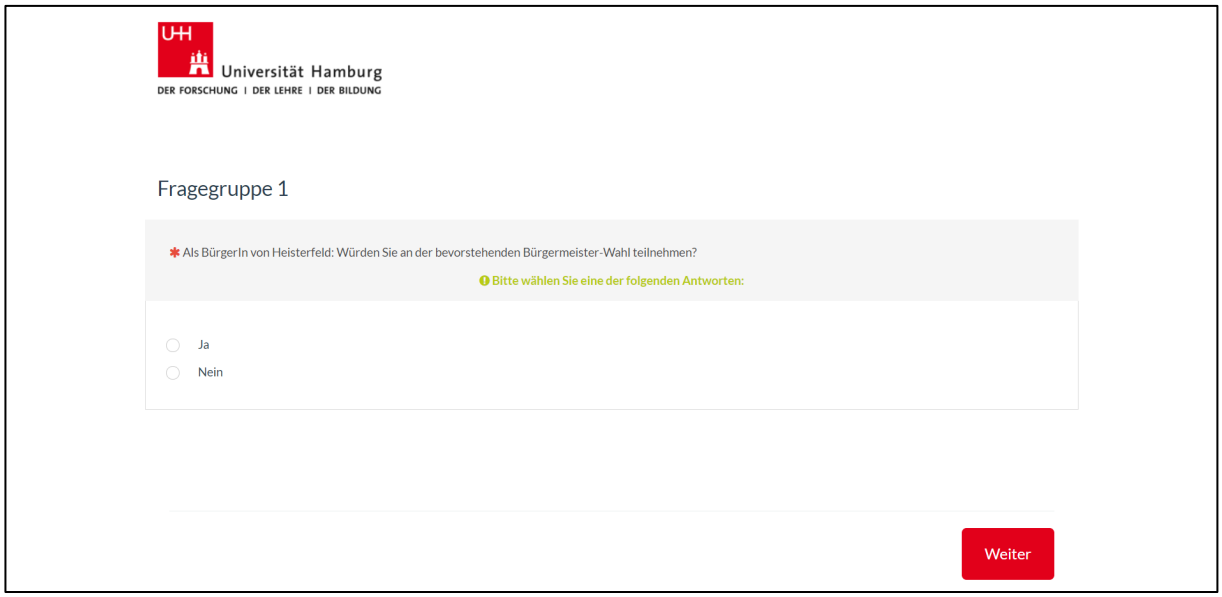
Covariates / control variables

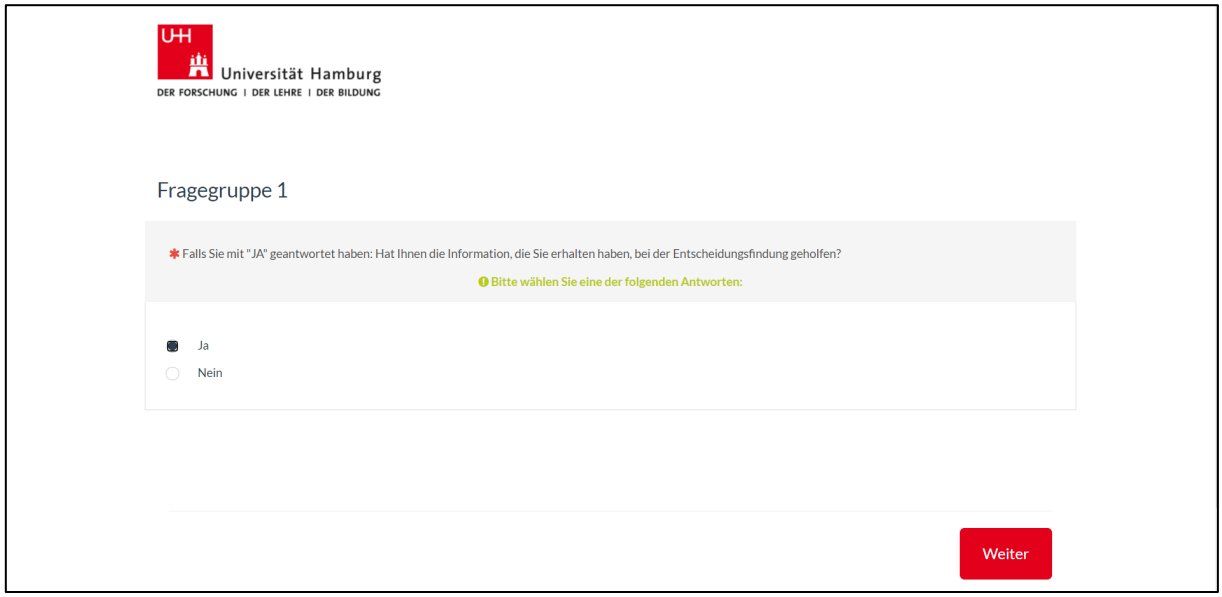
In addition to the selection of outcome and predictor variables, the questionnaire harvested data to control for socio-demographic effects. Consequently, age, sex and field of study were added to the analysis.

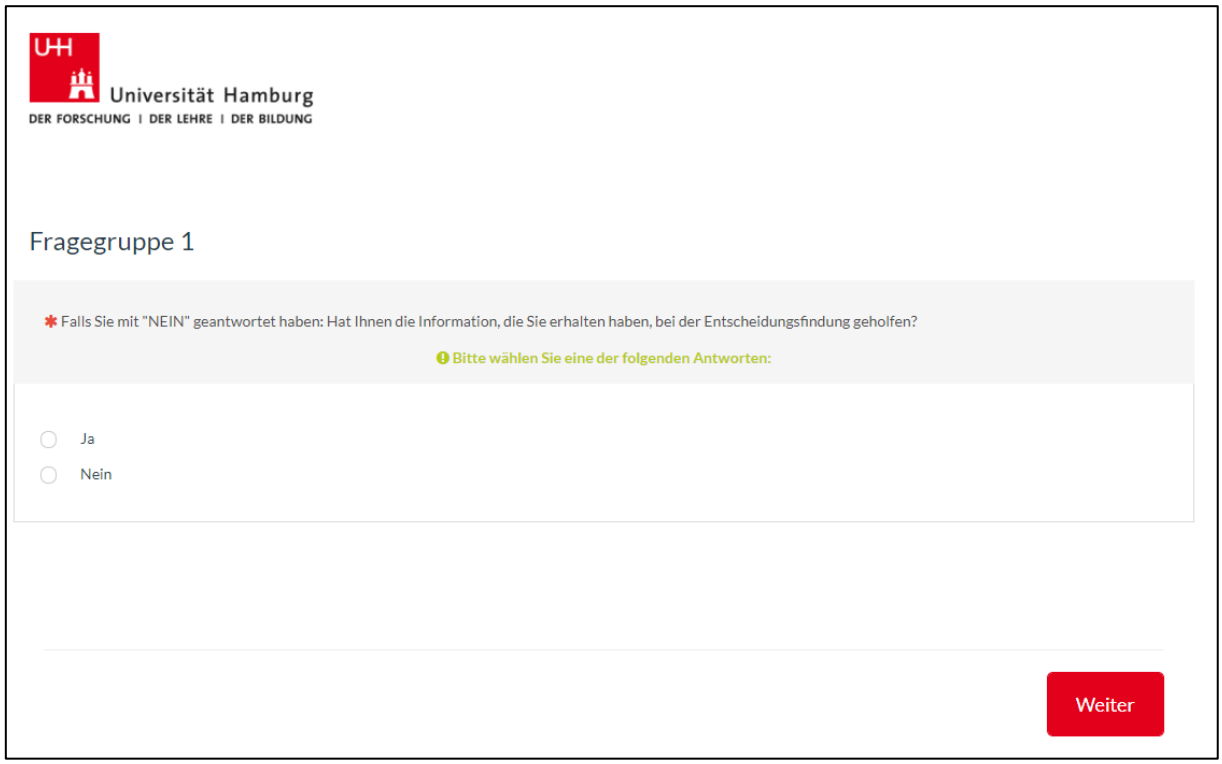
Appendix 6: Questionnaire used in the experiment in chapter 4

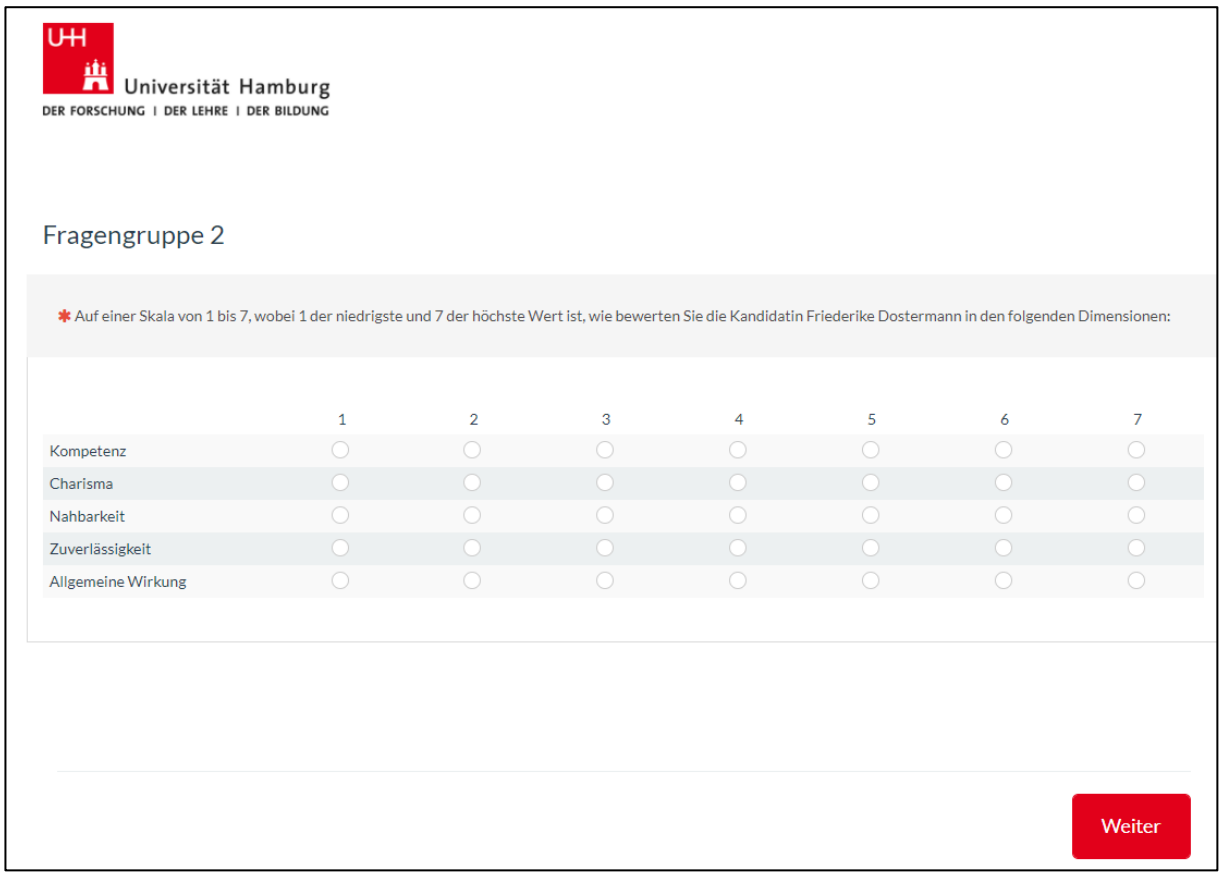
Pictured below are screenshots from the questionnaire used in the experiment. A PDF summary of plain text can be found in the data-repository for chapter 4 on the USB drive accompanying this dissertation.






Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 1
* Falls Sie mit "JA" geantwortet haben: Hat Ihnen die Information, die Sie erhalten haben, bei der Entscheidungsfindung geholfen?
Bitte wählen Sie eine der folgenden Antworten:
Ja
Nein
Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 1
* Falls Sie mit "NEIN" geantwortet haben: Hat Ihnen die Information, die Sie erhalten haben, bei der Entscheidungsfindung geholfen?
Bitte wählen Sie eine der folgenden Antworten:
Ja
Nein
Weiter

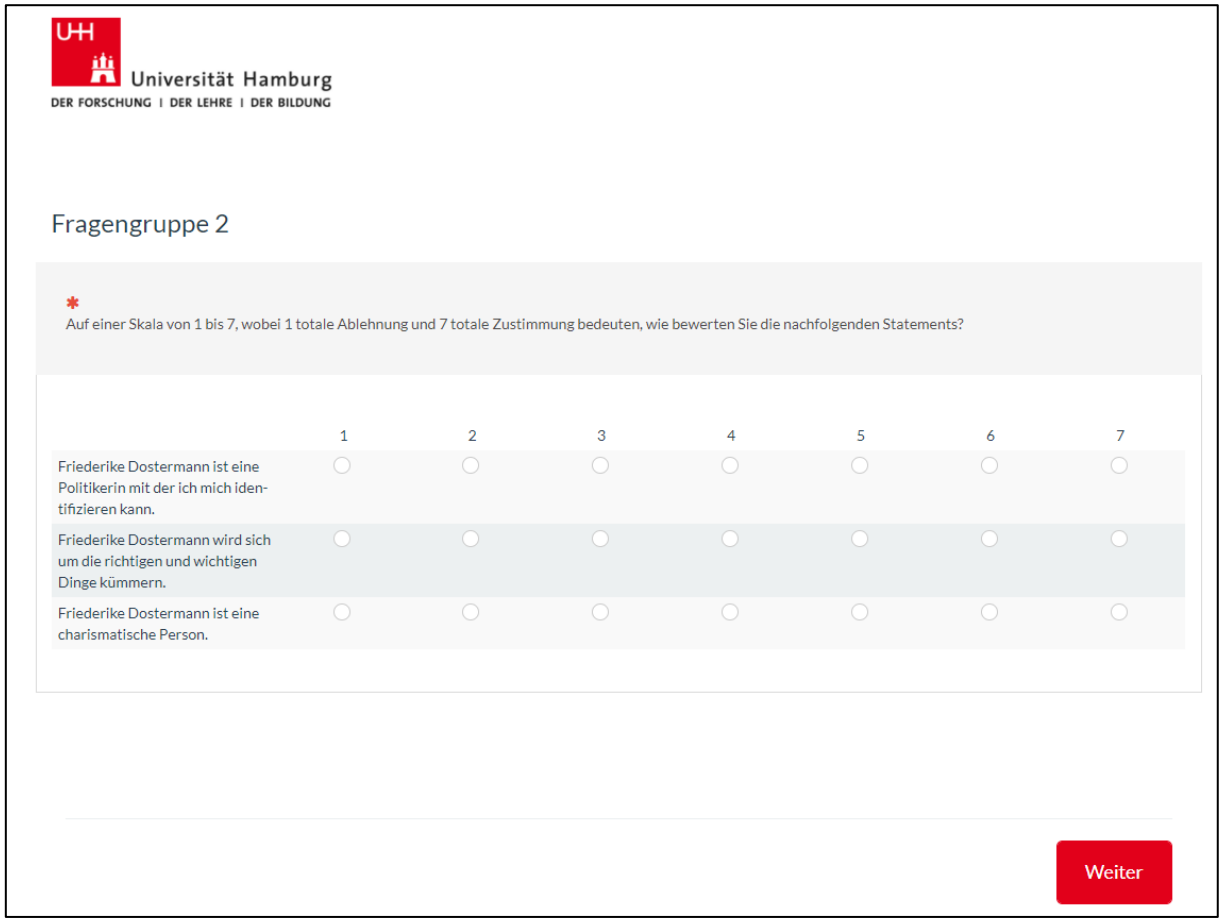

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

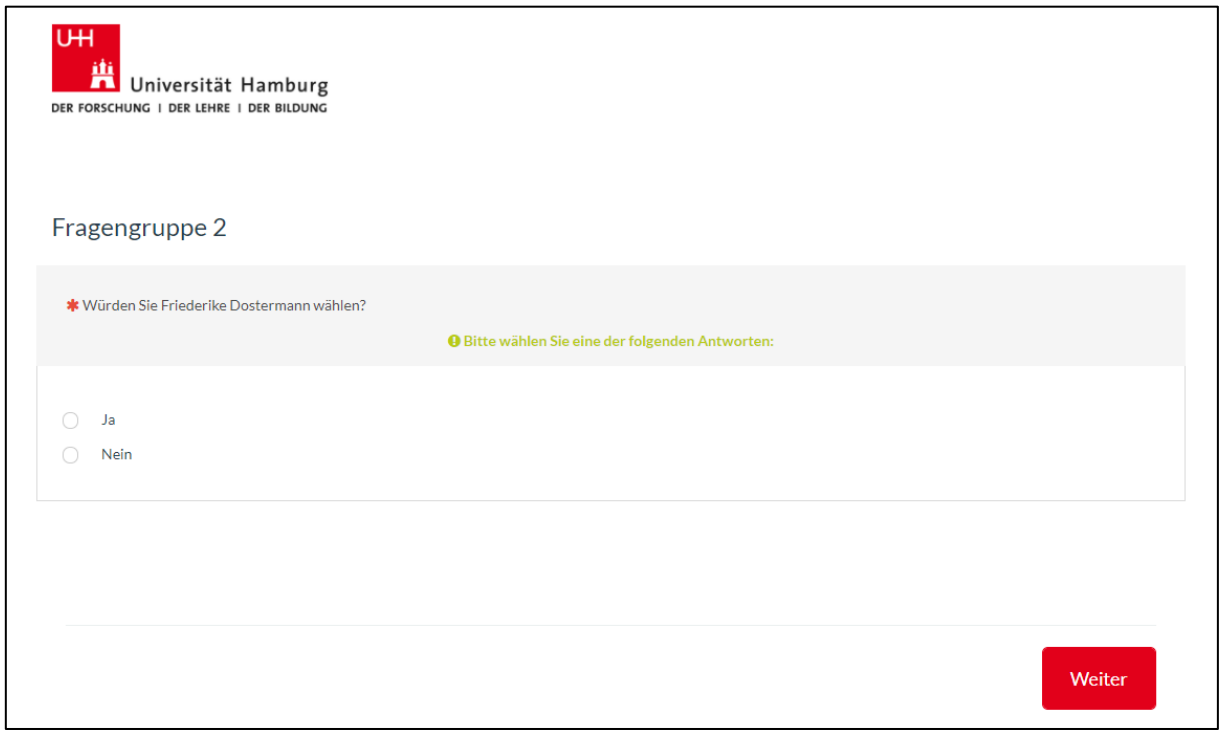
Fragengruppe 2

* Auf einer Skala von 1 bis 7, wobei 1 der niedrigste und 7 der höchste Wert ist, wie bewerten Sie die Kandidatin Friederike Dostermann in den folgenden Dimensionen:

	1	2	3	4	5	6	7
Kompetenz	○	○	○	○	○	○	○
Charisma	○	○	○	○	○	○	○
Nahbarkeit	○	○	○	○	○	○	○
Zuverlässigkeit	○	○	○	○	○	○	○
Allgemeine Wirkung	○	○	○	○	○	○	○

Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 2
* Auf einer Skala von 1 bis 7, wobei 1 totale Ablehnung und 7 totale Zustimmung bedeuten, wie bewerten Sie die nachfolgenden Statements?
1 2 3 4 5 6 7
Friederike Dostermann ist eine Politikerin mit der ich mich identifizieren kann.
Friederike Dostermann wird sich um die richtigen und wichtigen Dinge kümmern.
Friederike Dostermann ist eine charismatische Person.
Weiter

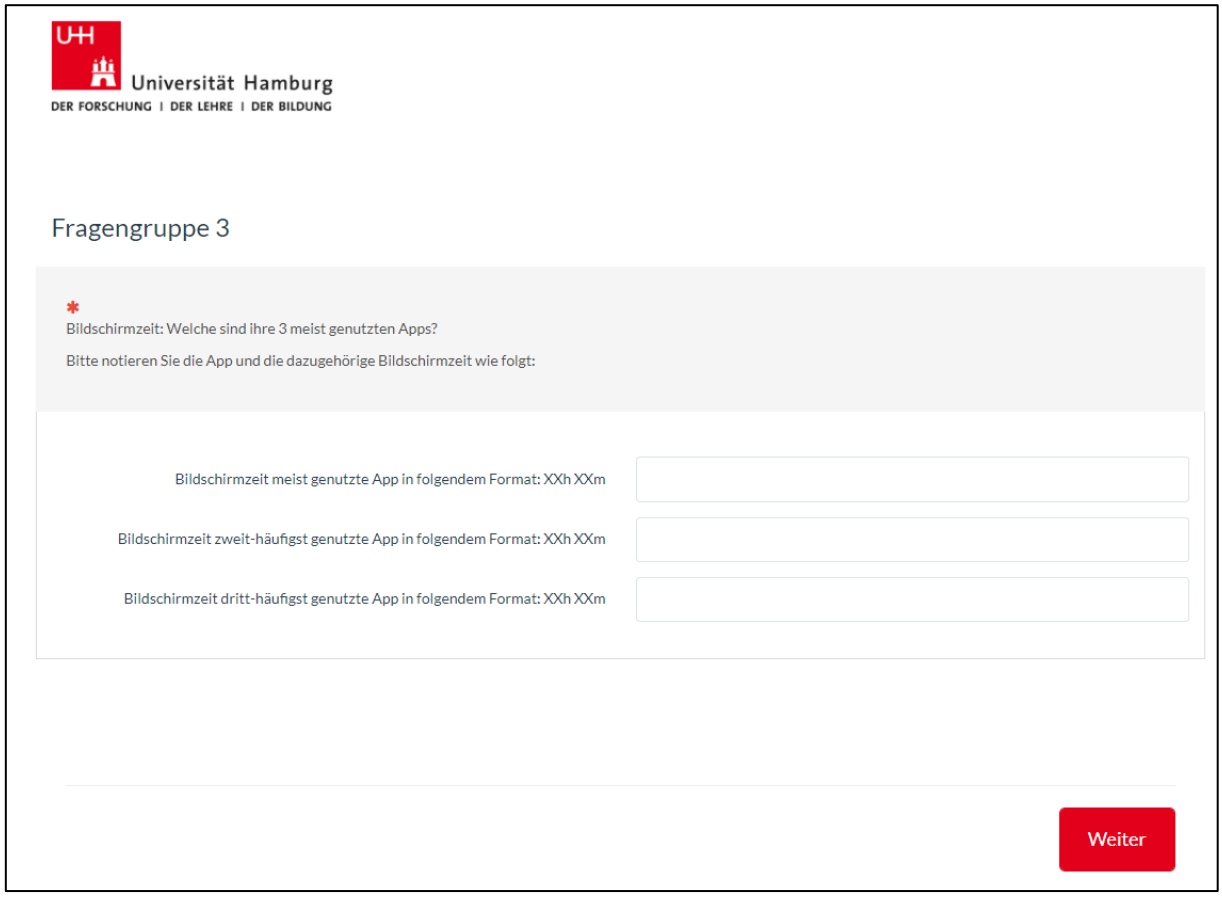

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 2
* Würden Sie Friederike Dostermann wählen?
Bitte wählen Sie eine der folgenden Antworten:
Ja
Nein
Weiter

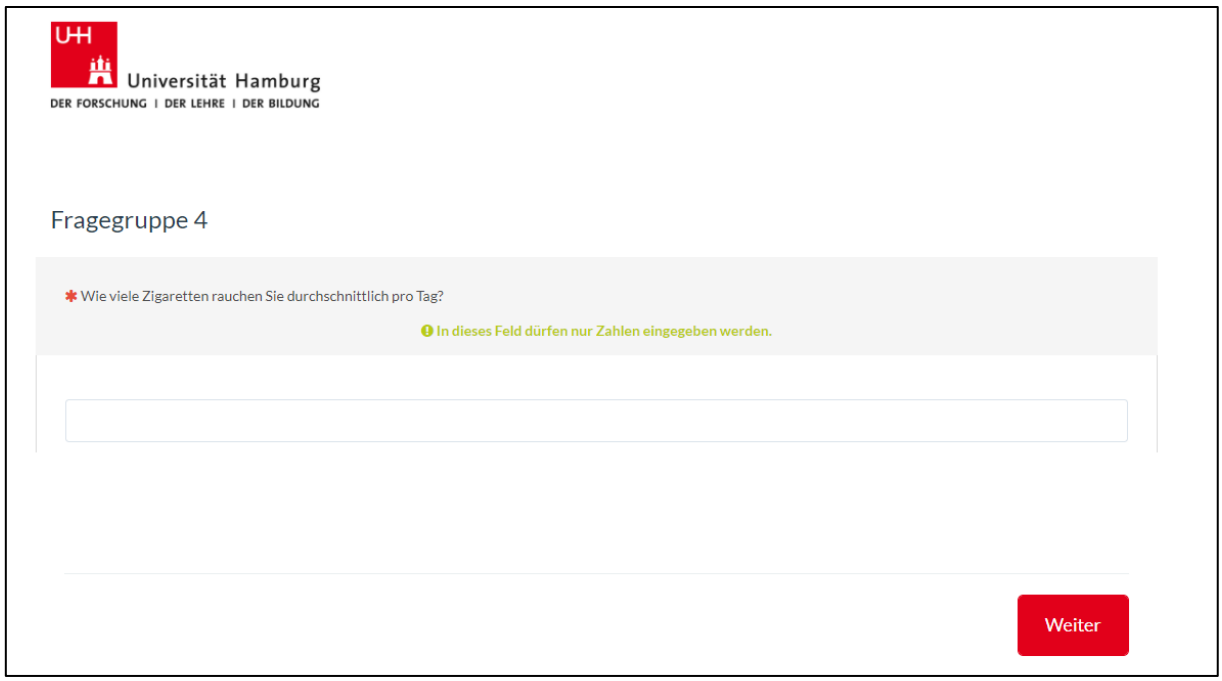
Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

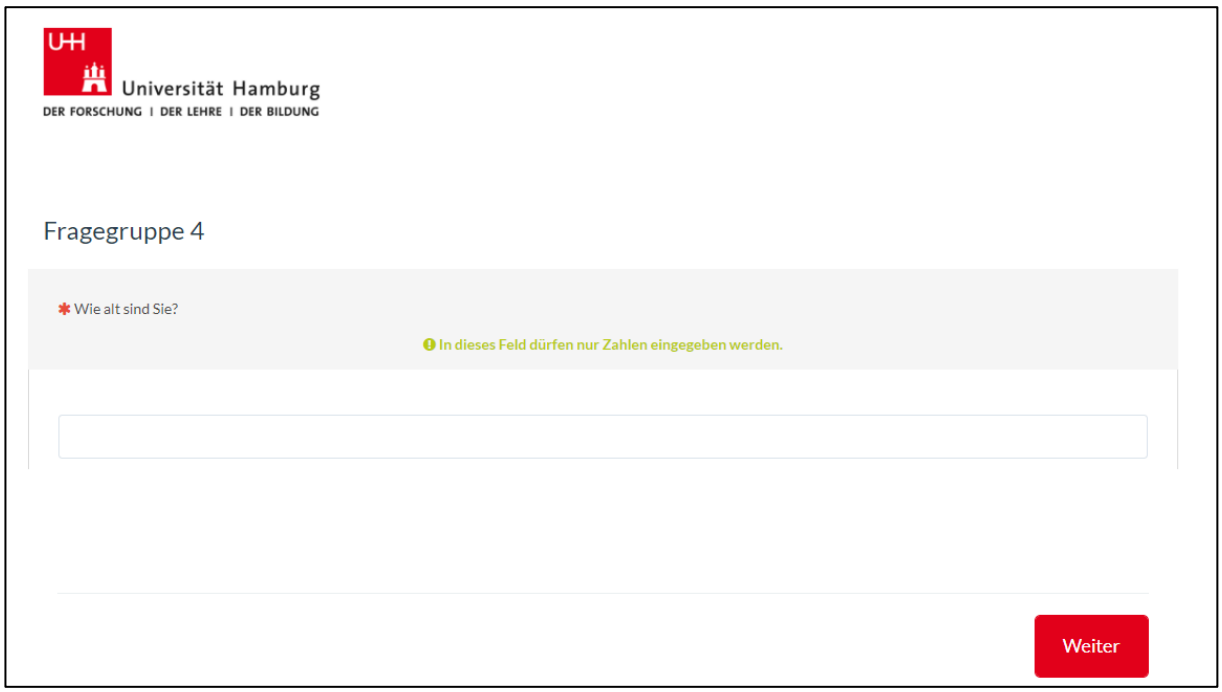
Fragengruppe 3

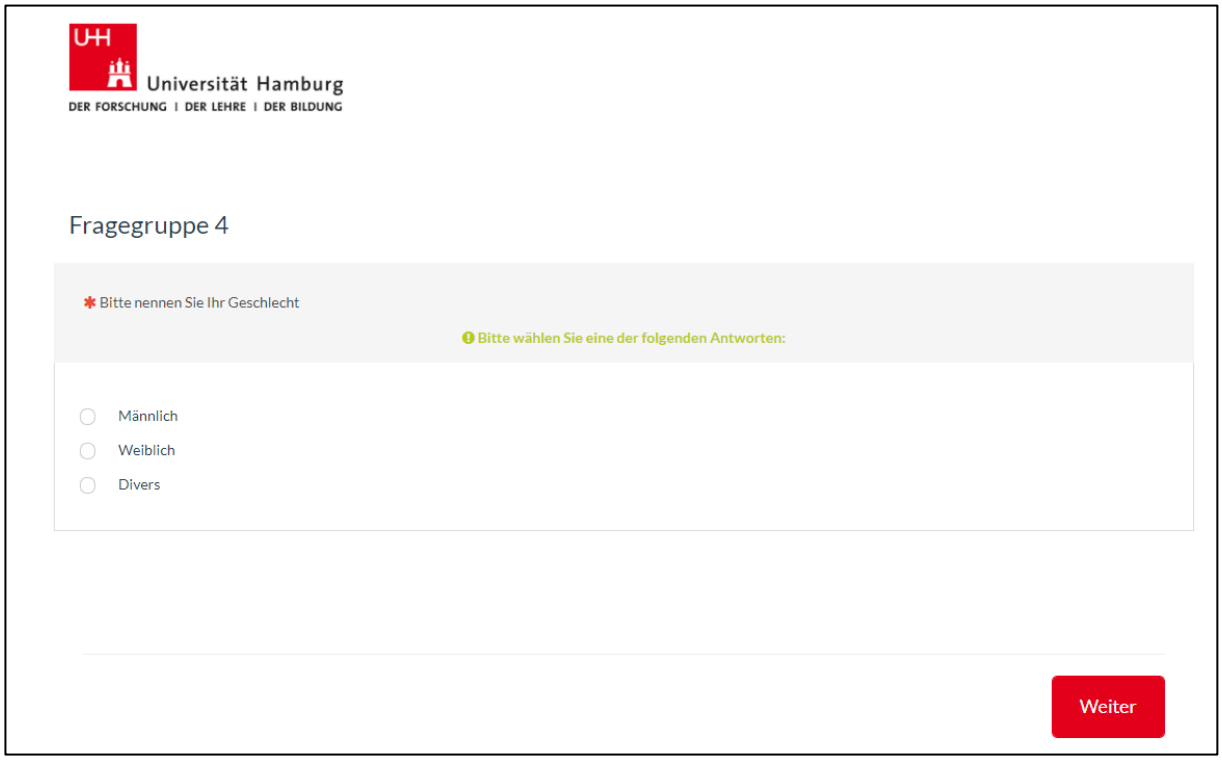
*
Bitte öffnen Sie Ihr Smartphone und öffnen Sie die Bildschirmzeit/ Digital Wellbeing App auf Ihrem Gerät. Wählen Sie bitte die Übersicht über die vergangenen 7 Tage aus. Bitte tragen Sie Ihre Werte der folgenden Aktivitäten in die entsprechenden Felder ein.

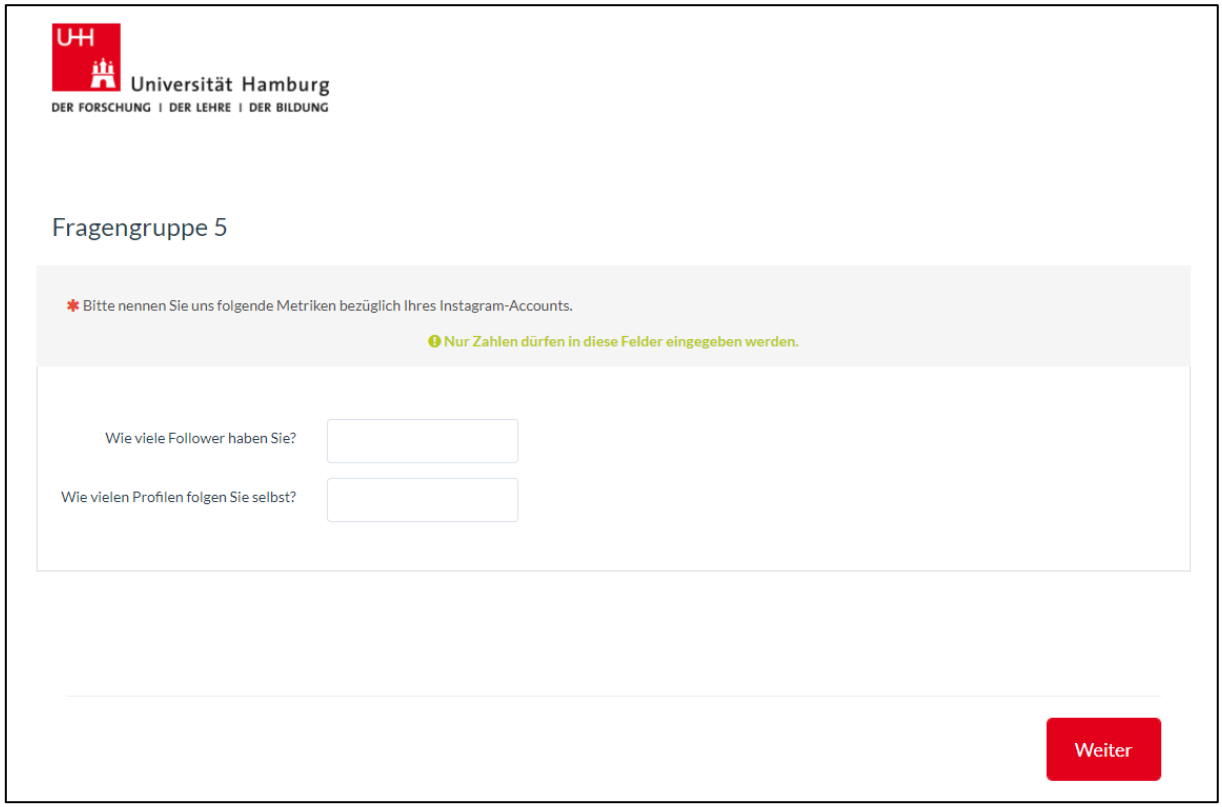
1) Durchschnittliche Bildschirmzeit Stunden/Minuten pro Tag (hh:min)	
2) Bildschirmzeit Woche gesamt (hh:min)	
3) Anzahl der Messtage	
4) Anzahl Aktivierungen pro Tag	
5) Anzahl Aktivierungen insgesamt	
6) Meiste Aktivierungen: Wochentag + Anzahl	
7) Anzahl Mitteilungen insgesamt	
8) Anzahl Mitteilungen pro Tag	
9) Bildschirmzeit Instagram (hh:min)	

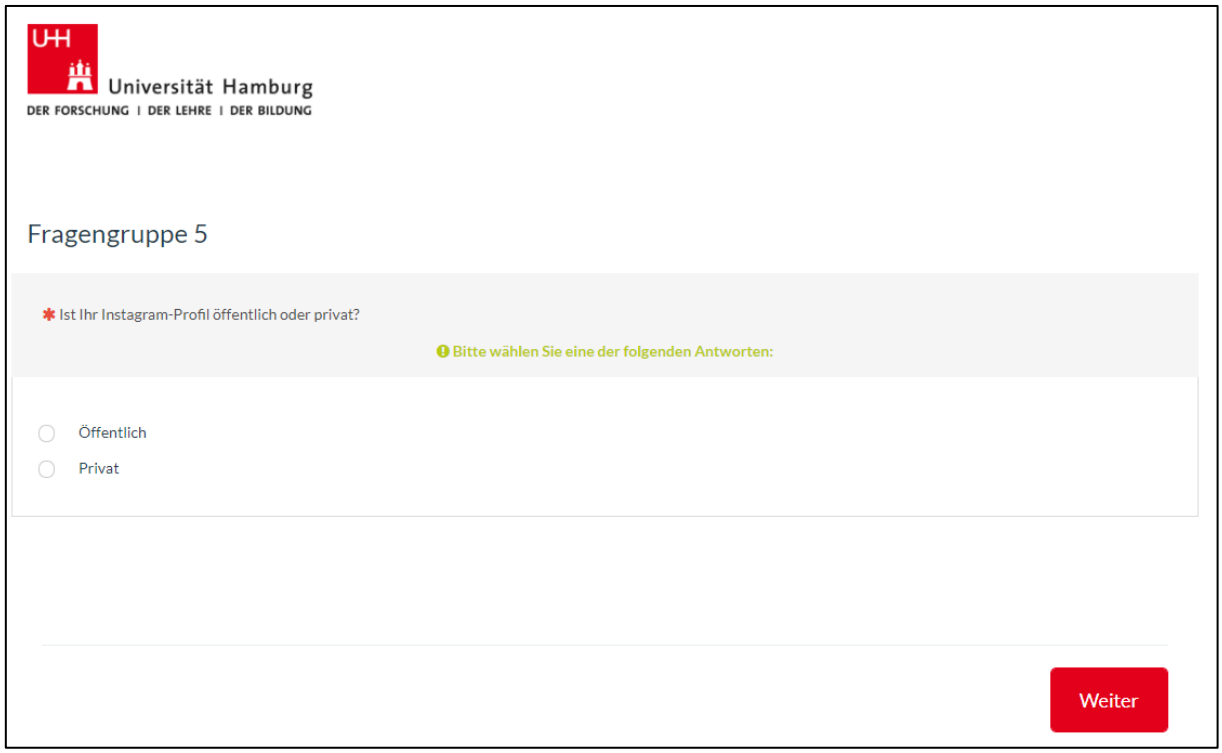

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 3
*
Bildschirmzeit: Welche sind ihre 3 meist genutzten Apps?
Bitte notieren Sie die App und die dazugehörige Bildschirmzeit wie folgt:
Bildschirmzeit meist genutzte App in folgendem Format: XXh XXm
Bildschirmzeit zweit-häufigst genutzte App in folgendem Format: XXh XXm
Bildschirmzeit dritt-häufigst genutzte App in folgendem Format: XXh XXm
Weiter

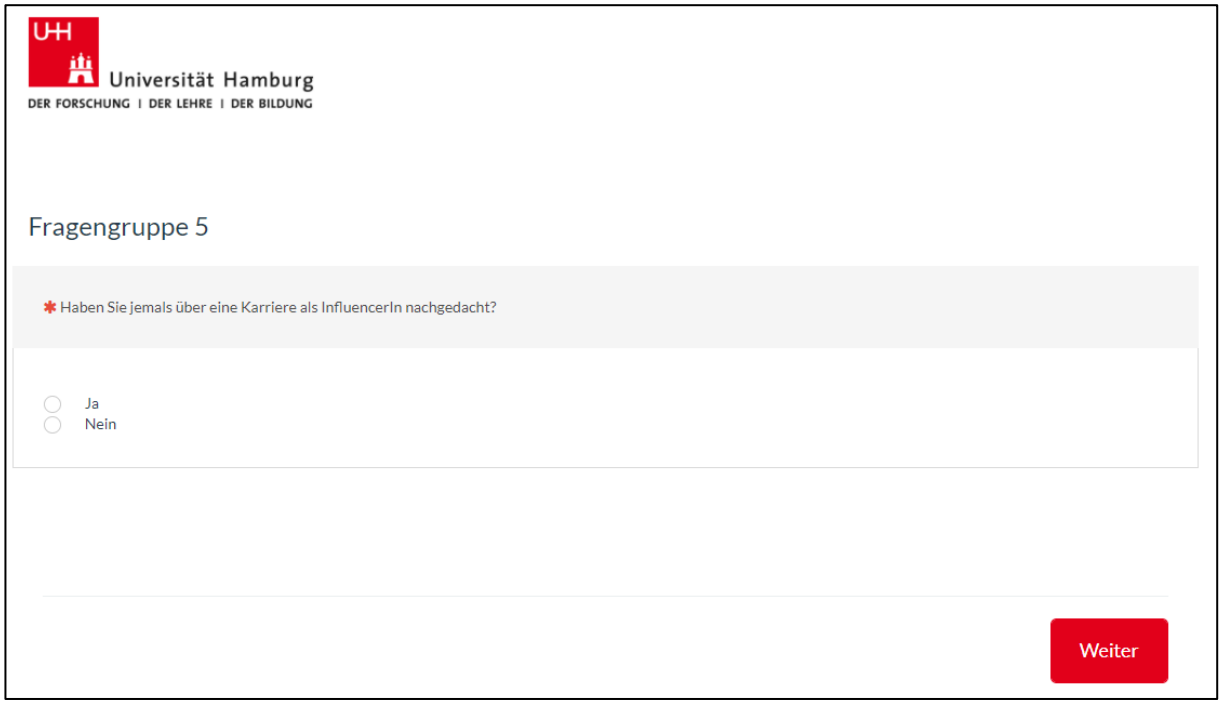

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 4
* Wie viele Zigaretten rauchen Sie durchschnittlich pro Tag?
In dieses Feld dürfen nur Zahlen eingegeben werden.
Weiter

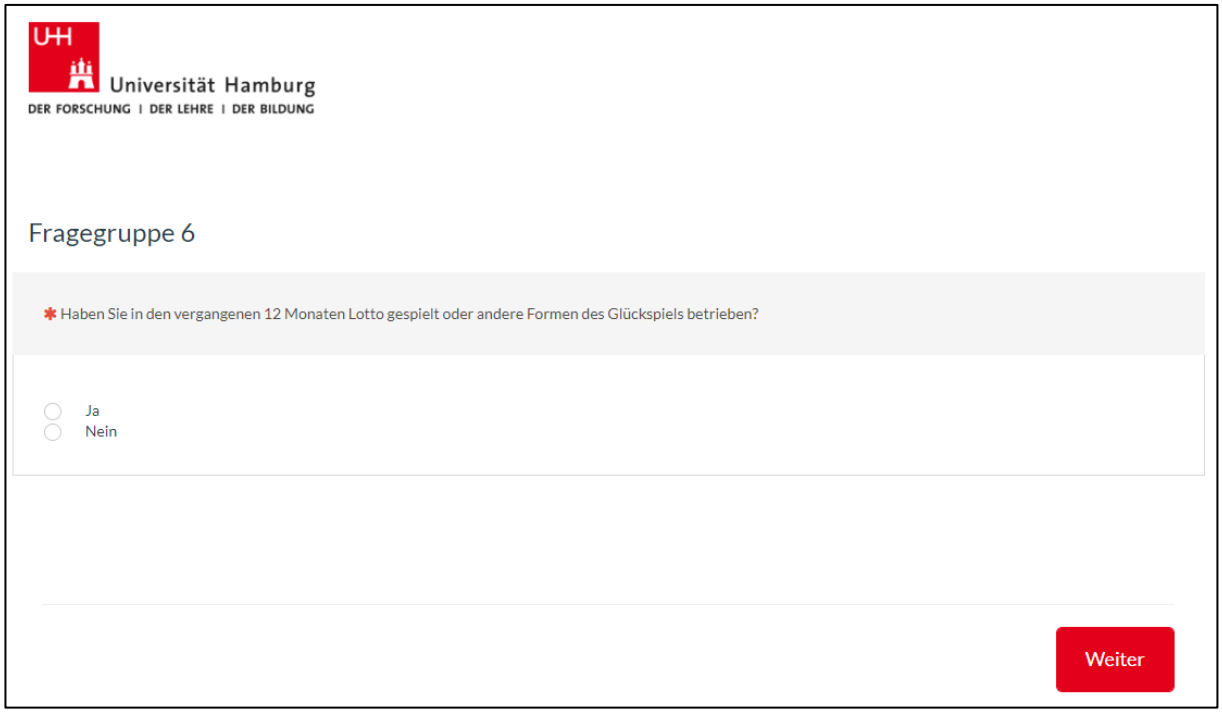

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 4
* Wie alt sind Sie?
In dieses Feld dürfen nur Zahlen eingegeben werden.
Weiter

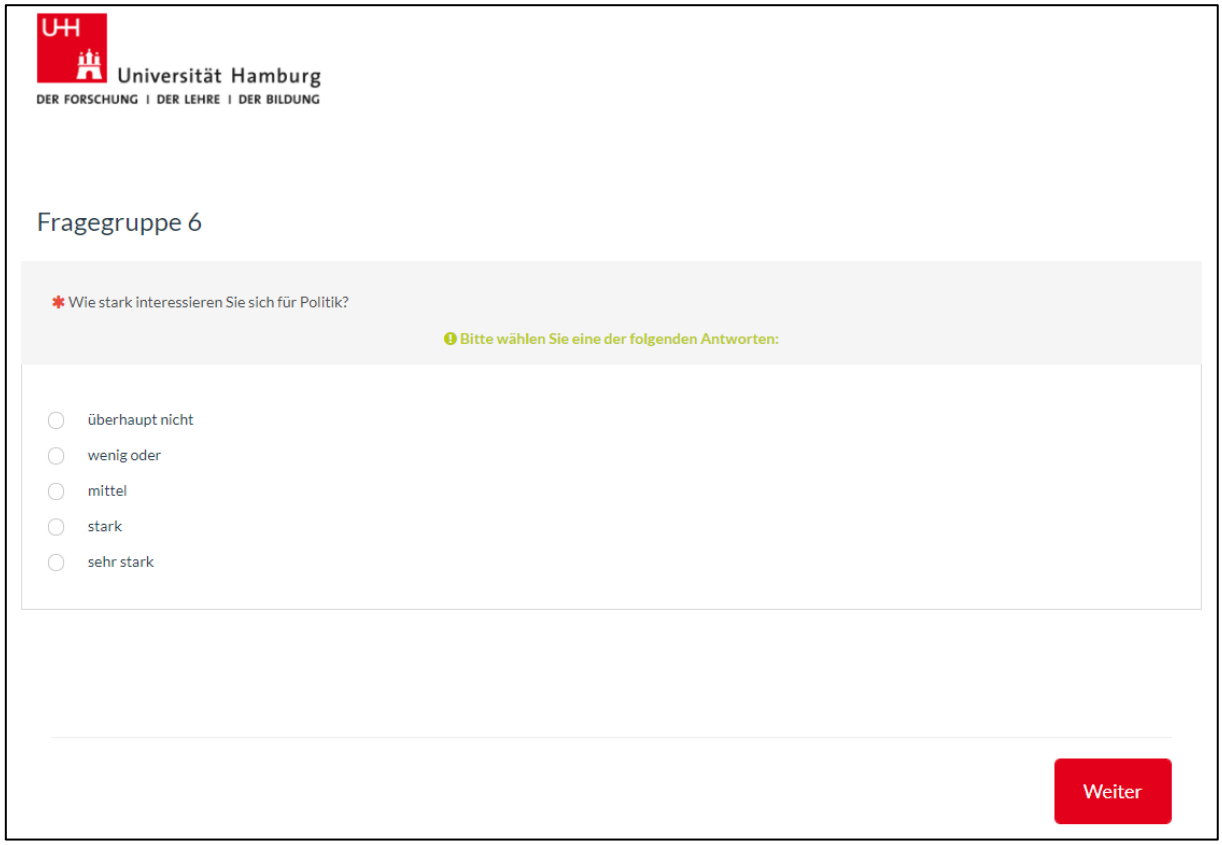

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 4
* Bitte nennen Sie Ihr Geschlecht
Bitte wählen Sie eine der folgenden Antworten:
Männlich
Weiblich
Divers
Weiter

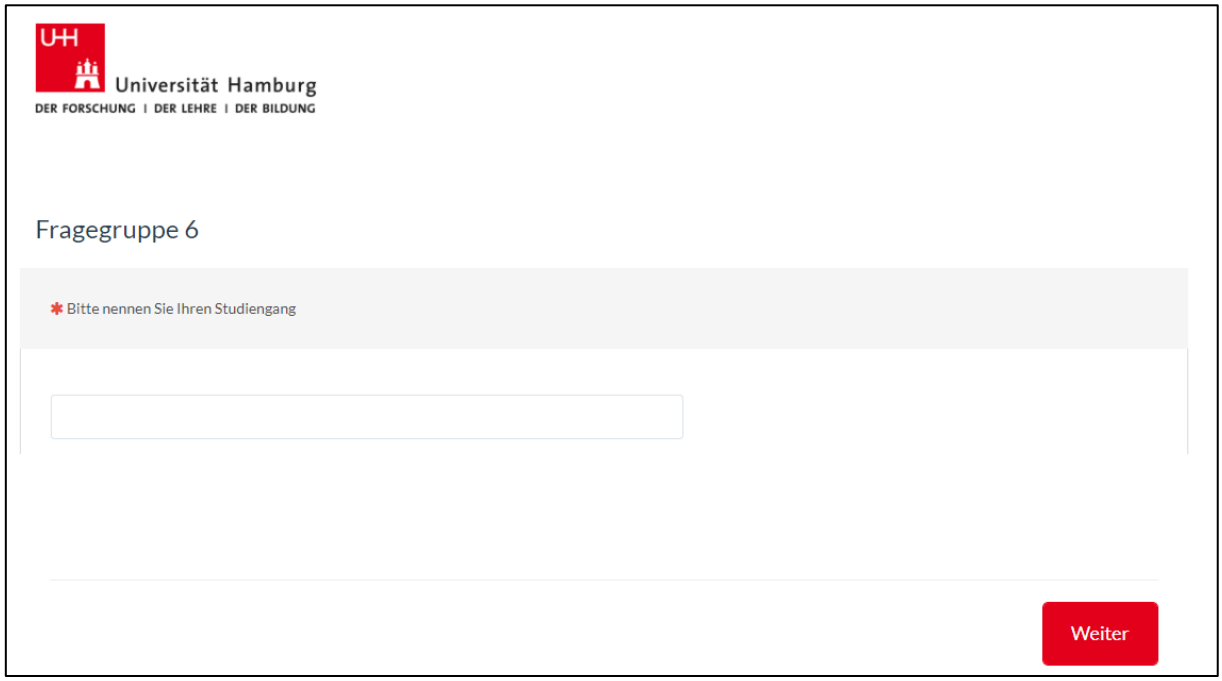

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 5
* Bitte nennen Sie uns folgende Metriken bezüglich Ihres Instagram-Accounts.
Nur Zahlen dürfen in diese Felder eingegeben werden.
Wie viele Follower haben Sie?
Wie vielen Profilen folgen Sie selbst?
Weiter

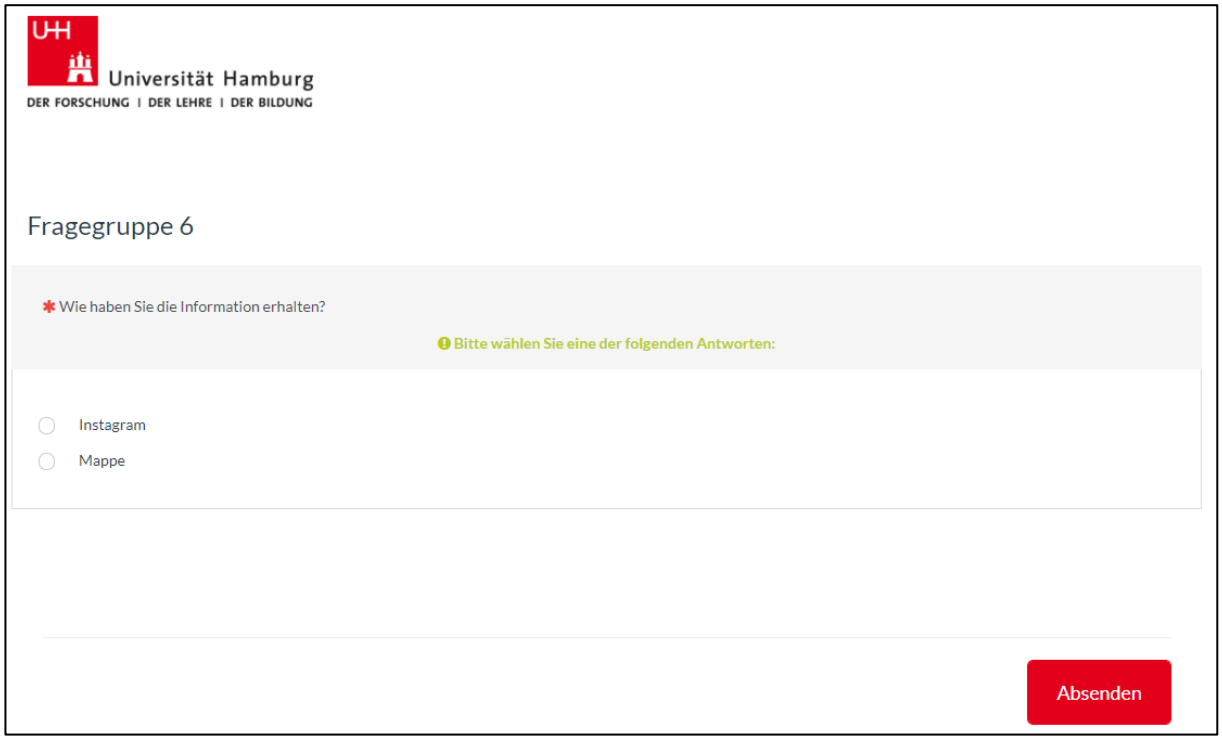

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 5
* Ist Ihr Instagram-Profil öffentlich oder privat?
Bitte wählen Sie eine der folgenden Antworten:
Öffentlich
Privat
Weiter

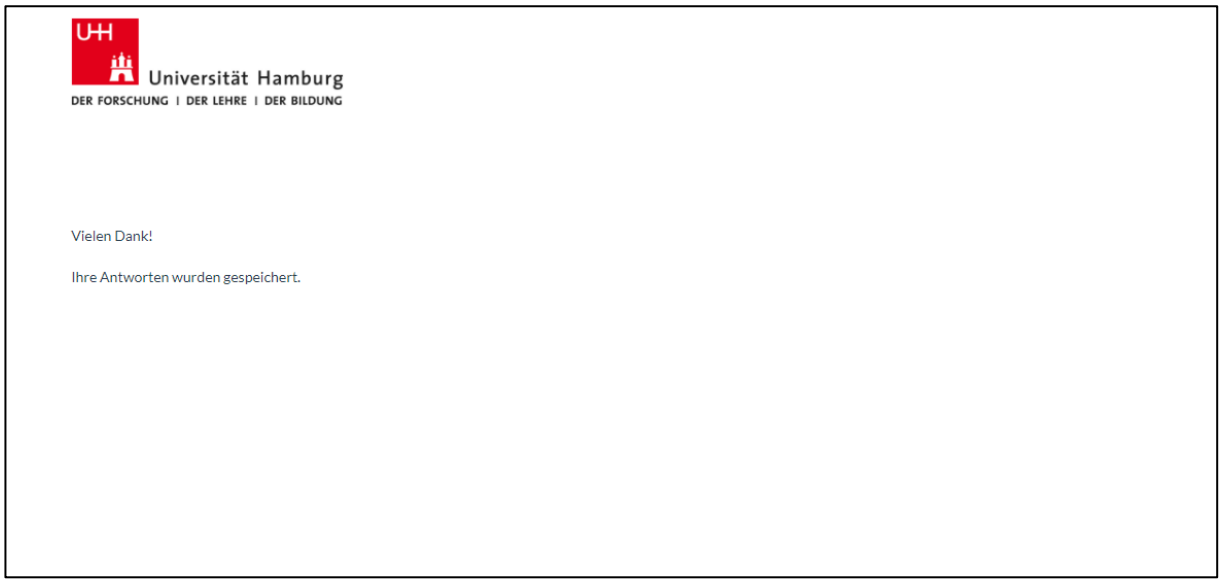

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragengruppe 5
* Haben Sie jemals über eine Karriere als InfluencerIn nachgedacht?
Ja
Nein
Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 6
* Haben Sie in den vergangenen 12 Monaten Lotto gespielt oder andere Formen des Glückspiels betrieben?
Ja
Nein
Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 6
* Wie stark interessieren Sie sich für Politik?
Bitte wählen Sie eine der folgenden Antworten:
überhaupt nicht
wenig oder
mittel
stark
sehr stark
Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 6
* Bitte nennen Sie Ihren Studiengang
Weiter


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Fragegruppe 6
* Wie haben Sie die Information erhalten?
Bitte wählen Sie eine der folgenden Antworten:
Instagram
Mappe
Absenden


Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG
Vielen Dank!
Ihre Antworten wurden gespeichert.

Appendix 7: Additional table chapter 4 (Table 12)

Results from additional tests that incorporated nicotine consumption as an amplification effect.

Table 12: Amplification effects from addictive behavior

	Mean candidate Traits	Mean political capital	Mean traits	Time Vote
Nicotine				
analogue group	-.08 (.07)	-.16* (.08)	-.11 (.07)	1.42* (.75)
smartphone group	.02 (.04)	.03 (.06)	.03 (.04)	.02 (.48)
Constant	5.18 (.23)	4.67 (.27)	5.00 (.23)	11.33 (2.45)
N: R^2 Adj. R^2 F (2, 17)	20 0.1061 0.0009 1.01	20 0.2219 0.1304 2.42	20 0.1814 0.0767 1.79	20 0.1814 0.0851 1.88

The dependent variable is named in the top row of each column.

0 = analogue group

1 = smartphone group

Factor-variable analysis, standard errors in parentheses. The Sample consists of individual laboratory data from 20 participants surveyed between 26th and the 30th of September 2019.

***: p<0,01; **: p<0,05; *: p<0,1

Appendix 8: Data used in chapter 4

The following guides through the data used in chapter 4. The statistics presented in this dissertation were calculated using Stata v.15.1

The data used in the analyzes in chapter 4 can be found on the USB-drive enclosed with this dissertation. On the drive, there is a folder named "*02_Chapter_4*". This folder contains sub-folders for every table and/or figure presented in this chapter. The individual sub-folders contain the raw data in Excel-format and the corresponding Stata-file. In addition, a Stata Do-File accompanies every regression-folder. The Do-Files contain detailed information of the steps used in calculating the results. You may either read in the Excel-file (use first row as variable names) or use the Stata-file respectively.

The list of folders below provides guidance:

- *"Figure4"*
- *"Questionnaire"*
- *"Table8_Candidate traits"*
- *"Table 9_Political capital"*
- *"Table10_Electoral behavior"*
- *"Table11_Amplification effects from smartphone usage"*
- *"Table12_Amplification effects from addictive behavior"*

Appendix 9: Flyer used in the quasi-experiment in chapter 5

Picture shown to the participants during the quasi-experiment.

Appendix 10: A scheme for political marketing

Table 18: Political Social Media Marketing Journey			
Stage	**Process**		
t1	Initial public event evokes general public interest		
t2	Individuals translate public interest into individualized media diets		
t3	Search for politicians in common social media		
t4	If a profile is present, a **touchpoint** is created:		
Multiple scenarios dependent upon the profile-quality. Individual assessment made on initial assessment. One chance.			
	1) "It's a match"	**2) "State of evaluation"**	**3) "Meh"**
t5 Initial impression	Positive impression of the corresponding account. The user likes what he/she sees and becomes a *Follower*.	Unclear impression of the corresponding account. The users remain uncertain whether or not the content is worth their time and attention.	Negative impression of the corresponding account. The users decide not to invest time and attention into the account.
t6 Iterative process 	Creation of a permanent Touchpoint. Ongoing communication between the politician and the individual under the impression of personalized messaging.	Uncertainty of the first impression hinders initial engagement with the profile. The individual remains in a state of evaluation but does not yet become a *follower*.	No iterative stage in this scenario. The bad impression blew any chance of future involvement.
t7 Outcome	Increased awareness, positive connotation, increased chance for political support	Increased awareness, neutral to positive connotation. Political support dependent upon future performance of the profile and politician	No engagement. Negative connotation of the profile holder. This is the worst case for the profile holder.

Appendix 11: Data used in chapter 5

The following guides through the data used in chapter 5. The statistics presented in this dissertation were calculated using Stata v.15.1

The data used in the analyzes in chapter 5 can be found on the USB-drive enclosed with this dissertation. On the drive, there is a folder named "*03_Chapter_5*". This folder contains sub-folders for every table and/or figure presented in this chapter. The individual sub-folders contain the raw data in Excel-format and the corresponding Stata-file. In addition, a Stata Do-File accompanies every regression-folder. The Do-Files contain detailed information of the steps used in calculating the results. You may either read in the Excel-file (use first row as variable names) or use the Stata-file respectively.

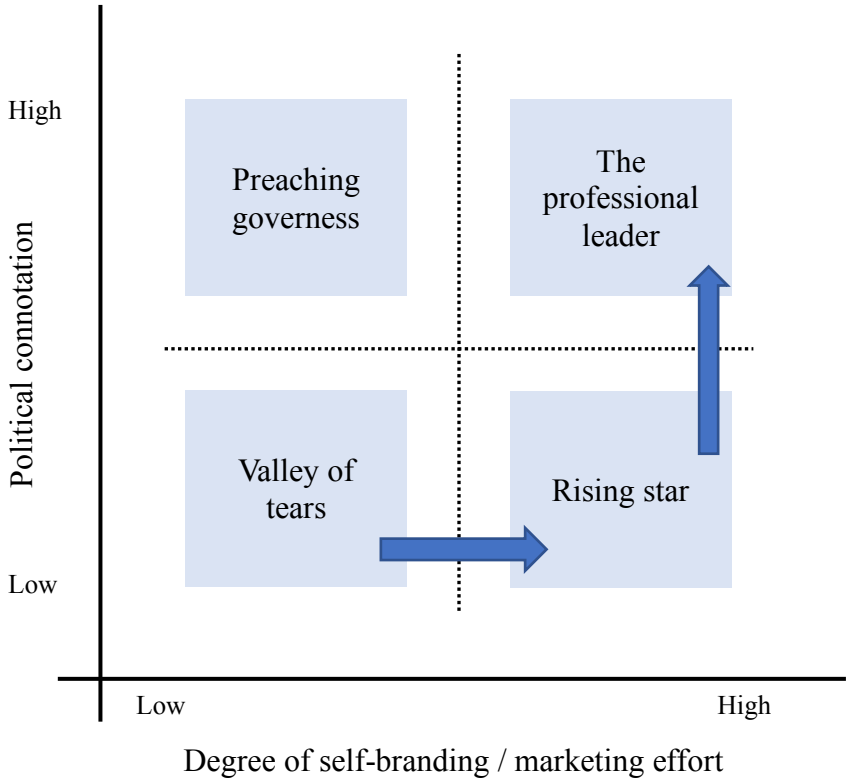
The list of folders below provides guidance:

- *"Figure_7"*
- *"Figure_8"*
- *"Table13_Effect on Instagram profile growth induced by Google search volume"*
- *"Table14_rating of trust and approval in relationship to media-type"*
- *"Table15_Descriptive statistics for relevant variables"*
- *"Table16_Instagram usage and the rating of politicians"*
- *"Table17_Robustness test with additional covariates"*

Appendix 12: The political Influencer Matrix

The case of Christian Lindner shows, how the creation of a personal brand and the professional self-marketing in social media eventually turns into political support. As mentioned earlier, approximately 80 percent of German Members of Parliament use Instagram. While some use Instagram with a great level of professionalism, the vast majority doesn't use the platform properly, that is: applying successful, platform-immanent principles to their own content-creation (Hügelmann 2020). While there exists no *secret formula* to instant Instagram or social media success, I argue that most of the political profiles fail to get the right mixture between political and personal content. As outlined above, the crafting of a personal, political brand necessitates the highlighting of favorable attributes while simultaneously transposing political messages. In order to categorize political Instagram usage, I therefore propose the following matrix:

The x-axis labels the effort by the profile holder to present him/herself in the best favorable manner and to correspondingly market the own personal brand. The y-axis labels the degree of politically connotated content that is put forward on the profile. This categorization leads to a four-field matrix which shows different usage-patterns for political Instagram. The matrix is shown on the following page:



Let's begin in the bottom left corner. I label this segment the "valley of tears" given the mutual frustration these profiles cause on both the sending and receiving end. The content is of poor quality with no clear messaging or self-marketing present. In addition, the content is not even genuinely political which leads to a vague, general impression. As a consequence, the profiles grow very slowly or even don't grow at all and deliver no value to both the profile holder and the people willing to interact with the profile. For those profiles, it is very hard to move forward into the direction of a useful tool within the politicians' communications. This is where the majority of German political profiles is situated.

The top left segment circumscribes those profiles, that stand out by focusing on clear, highly political messaging. At the same time, those profiles lack content which enables easy-entry follow-up communication, i.e.: Emotional, personal or aesthetical content outside of the genuine political realm. As a consequence, these profiles attract those individuals, who are highly political in the first place. This strategy of preaching to the converted is used by populist politicians on both sides of the isle with significant success: Taking the role of a preaching governess, compromises or compatible content-offers are not part of the strategy. As a downside this limits the growth to the share of Instagram-users within the electoral target-audience.

The bottom right segment is arguably the most promising and interesting one. Being labeled as "rising stars" here are those profiles who understand the mechanism of self-marketing and social media marketing in general. The content on those profiles is of high quality with an emphasis of keeping the initial engagement-hurdle as low as possible. The provided content is not per-se apolitical, but wraps up political messages into a more tender, indirect way of communication. This strategy enables the profile holders to gain a following irrespective of party-affiliation in the first place. The content does not focus on politics, but on the personally that is the profile-holder. Consequently, this strategy only works, if the profile holder is willing to flat-out promote his personal brand. In other words: the political actor becomes a social media influencer in the process of becoming a professional politician. I argue that this process will significantly affect inner-party democracy and the general process of pre-selecting political leaders.

Last but not least is the top right segment, labeled “The professional Leader”. This segment subsumes the top-tier list of politicians who have leading roles in government or federal parties. Politicians in this segment have come a long way to get to their prominent position and hence follow a different strategy than the rising stars: The high degree of self-marketing translates into a professional enactment of daily political duties, often captured by top-tier photographers or camera-teams. Simultaneously, these profiles are used to politically address their followers in order to inform about policies or related topics. A prime example for an Instagram profile that fits into this category is the profile of Angela Merkel.

Appendix 13: Appendix to the literature

The argumentation of this dissertation in part builds on statements issued by Alexander Nix and Christopher Wylie. The cited quotes were taken from videos of speeches and interviews the two Cambridge Analytica executives gave. In order to secure that the statements are not lost, I downloaded the respective video files from YouTube. I did the same with the video showing the Chimpanzee using Instagram. As a consequence, there is a folder called "04_Appendix to the Literature" on the USB-drive that accompanies this dissertation. The folder contains the following data:

- PDF copy of: **Grassegger**, Hannes/**Krogerus**, Mikael (2016): "Ich habe nur gezeigt, dass es die Bombe gibt". In: Das Magazin. https://www.dasmagazin.ch/2016/12/03/ich-habe-nur-gezeigt-dass-es-die-bombe-gibt/ (paywall, 10.02.2021).

- Video file of: **The Guardian** (2018): "Cambridge Analytica whistleblower: 'We spent $1m harvesting millions of Facebook profiles'". In: YouTube recording of interview with **Christopher Wylie** (17.03.2018). https://www.youtube.com/watch?v=FXdYSQ6nu-M (10.02.2021).

- Video file of: **Milman**, Oliver (2019): "Chimpstagram: Video of ape browsing app goes viral - but what is going on?". In: The Guardian. https://www.theguardian.com/world/2019/may/02/instagram-chimp-video-ape-browsing-app-goes-viral (10.02.2021).

- Video file of: **Nix**, Alexander (2016): "Cambridge Analytica - The Power of Big Data and Psychographics". In: YouTube recording Concordia Annual Summit 2016. https://www.youtube.com/watch?v=n8Dd5aVXLCc (10.02.2021).

- Video file of: **Nix**, Alexander (2017): "Alexander Nix: From Mad Men to Math Men | OMR Festival 2017 - Hamburg, Germany | #OMR17". In: YouTube recording OMR Festival 2017. https://www.youtube.com/watch?v=6bG5ps5KdDo (10.02.2021).

9. Informationen gemäß §6 (7) Promotionsordnung

Kurzfassung der Ergebnisse

Political Influencers? Theoretical and analytical contributions to the analysis of Instagram as a means for political communication

Wie nutzen Politiker Instagram im Wahlkampf und wie könnte die Selbstdarstellung über Instagram den individuellen Prozess der Informationsverarbeitung und der Stimmabgabe beeinflussen? Der Beitrag bewertet diese und verwandte Fragen, die sich angesichts eines hypothetischen Zusammenhangs zwischen der strategischen Nutzung sozialer Medien in politischen Kampagnen und dem Ausgang von Wahlen stellen. Basierend auf Kahnemans Theorie des schnellen und langsamen Denkens wird am Beispiel von Instagram aufgezeigt, wie das kontinuierliche Versenden von visuellen Nachrichten die individuelle Entscheidungsfindung vor Wahlen beeinflussen kann. Um herauszufinden, wie Instagram innerhalb von Kampagnen genutzt wird, wurde das Nutzungsverhalten von 12 Spitzenpolitikern in den letzten Wochen vor der Bundestagswahl 2017 aufgezeichnet und statistisch ausgewertet. Die Ergebnisse zeigen, wie Interaktionen auf Instagram entstehen und was das Kanalwachstum antreibt. Auch wenn ein kausaler Zusammenhang zwischen Instagram-Nutzung und individuellem Verhalten in Ermangelung von Daten auf Individualebene nicht nachgewiesen werden kann, sind die vorliegenden Ergebnisse konsistent mit der theoretischen Modellierung. Sie zeigen, wie groß der langfristige Einfluss von sozialen Medien auf Entscheidungsprozesse theoretisch sein kann.

How do politicians use Instagram in election campaigns, and how might self-marketing via Instagram influence information-processing and voting? This paper evaluates these and related questions that arise in light of a hypothetical link between the strategic usage of social media in political campaigns and the outcome of elections. Based on Kahneman's theory of fast and slow thinking, the paper uses Instagram as an example to demonstrate how the continuous sending of visual messages can influence individual decision making prior to elections. To find out how Instagram is used within campaigns, the usage behavior of 12 top-tier politicians was recorded and statistically

analyzed in the last weeks before the 2017 German Federal Election. The results show how interactions on Instagram occur and what drives channel growth. Although a causal relationship between Instagram use and individual behavior cannot be demonstrated in the absence of individual-level data, the present results are consistent with theoretical modeling. They show how large the long-term influence of social media on decision-making processes can theoretically be.

What if we are all just trained monkeys? A neurological approach to analyzing individual decision-making in a political context

In diesem Beitrag wird versucht, einen kausalen Zusammenhang zwischen der digitalen Vermittlung politischer Inhalte und individuellem Verhalten zu isolieren. Im Rahmen einer simulierten Wahl wird unter Laborbedingungen der Einfluss von Instagram-Nutzung und Selbstvermarktung einer fiktiven Politikerin auf die Bewertung durch Individuen untersucht. Die theoretische Grundlage hierfür sind Ergebnisse aus der Verhaltens- und Neurowissenschaft, welche einen negativen Zusammenhang zwischen hoher Smartphone-Nutzung und der kognitiven Leistungsfähigkeit von Individuen feststellen konnte. Darauf aufbauend wird ein theoretisches Konzept vorgestellt, das individuelles Verhalten unter dem Einfluss von Smartphone-transponierten Stimuli erklärt. Die entsprechende Forschungsfrage lautet wie folgt: Beeinflusst und verändert der Smartphone-zentrierte Social-Media-Konsum die menschliche Entscheidungsfindung in einem politischen Kontext? Die Ergebnisse aus einem Labor-Experiment zeigten, wie Teilnehmer eine politische Kandidatin in einem fiktiven Wahlkampf als charismatischer, zugänglicher, zuverlässiger und kompetenter einschätzten, wenn die Informationen, die die Grundlage für die Bewertung bildeten, über das Smartphone vermittelt wurden. Es konnte jedoch keine Veränderung der Wahlabsicht isoliert werden. Dies könnte jedoch am Messverfahren liegen.

This Paper tries to isolate a causal mechanism between smartphone-transmitted political content and individual behavior in the context of a mock-up election. A theoretical argument is presented that builds on findings from behavioral and neuroscience, which found a negative correlation between high smartphone use and individuals' cognitive performance. Based on this, a theoretical concept is presented that explains individual behavior under the influence of smartphone-transmitted stimuli as in social media. The corresponding research-question reads as follows: Does smartphone-centered social media consumption affect and arguably alter human decision-making in a political context? The results from a laboratory experiment showed, how participants rated a fictitious candidate in a mock-up electoral campaign more charismatic, more accessible, more reliable and more competent, when the information, which built the foundation for the assessment, was conveyed via smartphone. However, no change in voting intention could be isolated. This, however, could be due to level of measurement.

Self-Marketing and political support. Evidence from social media, experimental, and survey-data

Dieser Beitrag stellt die Frage, ob politisches Selbstmarketing Individuen positiv beeinflusst und wie dies geschieht. Durch die Anwendung theoretischer Konzepte der Marketingwissenschaft auf die politische Kommunikation wird ein theoretisches Modell zur Analyse der individuellen Informationsaufnahme und -verarbeitung in einer digitalen Umgebung erarbeitet. Anhand von Google-Trends und Instagram-Daten wird gezeigt, dass Individuen politische Informationen entlang eines Marketing-Funnels suchen und finden. Soziale Medien nehmen dabei die Rolle eines Scharniers zwischen interessierten Individuen und politischen Inhalten ein. Im Rahmen eines Quasi-Experiments wird gezeigt, dass die Selbstvermarktung in sozialen Medien einen erheblichen Einfluss auf die Meinungsbildung von Individuen hat. Probanden, die wussten, dass eine Politikerin Instagram nutzt, zeigten sich in der Bewertung dieser Politikerin einem negativen Frame gegenüber weniger anfällig. Die Selbstvermarktung führte somit zu größerer Nachsicht auf Seiten potentieller Wähler. In einer Analyse repräsentativer Daten wurde zudem gezeigt, dass diejenigen

Menschen die selbst Instagram nutzen diejenigen Politiker besser bewerten, die ihrerseits ebenfalls Instagram nutzen. Diese Ergebnisse sind mit den vorherigen Laborergebnissen konsistent und deuten auf einen genuinen Zusammenhang zwischen politischer Selbstvermarktung und der individuellen Bewertung von Politikern hin.

This paper asks whether political self-marketing positively influences individuals and how this happens. By applying theoretical concepts from marketing science to political communication, a theoretical model is developed to analyze individual information intake and processing in a digital environment. Using Google Trends and Instagram data, it is shown that individuals seek and find political information along a marketing funnel. Social media take on the role of a hinge between interested individuals and political content. In a quasi-experiment, it is shown that self-marketing on social media has a significant impact on individuals' opinion formation. Subjects who knew that a politician used Instagram were less likely to evaluate this politician in terms of a negative frame. Self-promotion thus led to greater leniency on the part of potential voters. In an analysis of representative data, it was also shown that those people who used Instagram themselves rated those politicians better who, in turn, also used Instagram. These results are consistent with the previous lab results and indicate a genuine connection between political self-promotion and the individual evaluation of politicians.

Liste der Einzelarbeiten und Publikationen

Die vorliegende Dissertation besteht aus drei Einzelarbeiten. Alle Einzelbeiträge habe ich in alleiniger Autorenschaft produziert. Die Titel der Einzelarbeiten lauten:

1. **Political Influencers? Theoretical and analytical contributions to the analysis of Instagram as a means for political communication.**

2. **What if we are all just trained monkeys? A neurological approach to analyzing individual decision-making in a political context.**

3. **Self-Marketing and political support. Evidence from social media, experimental, and survey-data.**

Zum Zeitpunkt der Abgabe dieser kumulativen Dissertation wurde lediglich der erste Artikel (Political Influencers? Theoretical and analytical contributions to the analysis of Instagram as a means for political communications.) als Kapitel in einem Sammelband veröffentlicht:

- **Hügelmann**, Bendix (2019): "Political Influencers? How the usage of Instagram within political campaigns could affect decision-making and alter the outcome of elections". In: Kretzler, Markus/Okon, Elise/Roßmannek, Lilja/Simon, Charlotte Luise (Eds.): Facetten Politischer Kommunikation: Von Campaigning und Public Affairs Management zu Deliberation und Fragmentierung. Aachen: Shaker Verlag, 21-43.

Die veröffentlichte Version im Sammelband weicht teils erheblich von der Version in dieser Dissertation ab. Die zwei weiteren Artikel wurden bisher noch nicht veröffentlicht.

Während der Bearbeitungszeit meiner Dissertation habe ich in unregelmäßigen Abständen meine Gedankenwelt in Form von Blogbeiträgen dokumentiert. Weiterführend stehen demnach folgende Blogbeiträge und Fachartikel in Zusammenhang mit Inhalten dieser Dissertation:

- **Hügelmann**, Bendix (2020): „Ikonografie und Markenbildung in der Politik“. In: https://politicalinfluencers.wordpress.com/2020/09/05/ikonographie-und-markenbildung-in-der-politik/ (29.1.2021).
- **Hügelmann**, Bendix (2019): „Merken Sie sich diese Frau“. In: https://politicalinfluencers.wordpress.com/2019/12/16/merken-sie-sich-diese-frau/ (29.1.2021).
- **Hügelmann**, Bendix (2019): „On cognitive primes, attack ads and Joe Biden“. In: https://politicalinfluencers.wordpress.com/2019/05/06/on-cognitive-primes-attack-ads-rats-and-joe-biden/ (29.1.2021).
- **Hügelmann**, Bendix (2018): „Instagram im Bundestag”. In: https://politicalinfluencers.wordpress.com/2018/01/05/instagram-im-bundestag/ (29.1.2021).
- **Hügelmann**, Bendix (2017): „Zusammenhang Anzahl Posts/Wachstum“. In: https://politicalinfluencers.wordpress.com/2017/09/08/zusammenhang-anzahl-posts-wachstum/ (29.1.2021).
- **Hügelmann**, Bendix (2017): „Auf ein Date mit #MrSicherheit“. In: https://politicalinfluencers.wordpress.com/2017/08/15/auf-ein-date-mit-mrsicherheit/ (29.1.2021).
- **Hügelmann**, Bendix (2017): „Was ist ein Political Influencer?“. In: https://politicalinfluencers.wordpress.com/2017/08/04/second-blog-post/ (29.1.2021).