“Who do you think you are?”
Developing a methodology for socio-economic classification through social media by examining the Twitter debates in the Austrian EU Election 2019.

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Abstract

Social media today is a dominant communication tool, which structures not only our social interactions but also filter the information users are getting displayed. The big social media platforms use our interaction data to analyse our behaviour and sell the data for commercial interest. But not only the pure interaction data is valuable for these platforms. Also hidden information, which can be derived from our interactive networks, about our social structures, social classifications and social status are gathered and monetised. This research attempts on the one hand to uncover some of these methods used by social media platforms, and on the other hand, also wants to show how useful these new methods can be for research on social phenomena. Therefore, this study goes beyond the confining limits of traditional sociology, where either qualitative or quantitative methods are applied. Following the idea of Critical Realism, the positivist and constructivist methods are applied in combination in order to provide thick accounts of the studied material. In this study, varying socio-economic classification systems (like the Sinus-Milieu models) are investigated and evaluated against the background of Bourdieu’s ideas on cultural and social forms of capital. The present study uses a mixed method approach (Social Network Analysis and Sentiment Analysis) to analyse quantitative data from Twitter conversations which were collected during the Austrian EU Election 2019. In conclusion, one could say that the overall purpose of this study is to demonstrate the usefulness of Critical Realism for social media research, since this approach can create a thicker account of the studied material than other, more traditional methods. This undertaking is demonstrated by the findings of the study. These findings are the building of specific sub-clusters of EU candidates which are not related to the same political background and traditional demographics but whose relation can be detected and described using Bourdieu’s concepts of social and cultural capital. As a mean for gathering empirical data, Twitter turned out to be a useful and accessible tool for this study.

Key Words: Critical Realism, Mixed Methods, Socioeconomic Classification Model, Class, Social media, Sinus-Milieu Model, Twitter Analysis, Social Network Analysis (SNA), Sentiment Analysis, Bourdieu, Social Capital, Cultural Capital,
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This study marks the end of an intense 100 days’ journey, where I had the freedom to study intensively the social phenomena of the Twitter conversations of the Austrian EU candidates towards the European elections of 2019. With this study, I hope to be able to demonstrate how useful the application of big data and the use of machine learning can be for social media research. I also hope to be able to show the benefit of some methods that are less common in today’s dominant interpretative sociology.

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1. Introduction

In March 2018, the revelation of the Facebook Cambridge Analytica data scandal marked a turning point, not only for Facebook itself but even more so for the awareness about the characteristics and manifestations of today’s platform capitalism. This scandal disclosed not only Facebook’s sloppy handling of personal and private data, but also showed that the Big 5 of social media (Google, Facebook, LinkedIn, Twitter and Amazon) has become a gigantic “Leviathan” which is fuelled by personalised and structured data extracted from our social life. In my present study, I look at conversations on Twitter, a social media platform that follows the same private data valorisation strategy (Leetaru 2019) like as Facebook and the others. The structuring of our social data includes not only our public and private conversations, but also mobile and transactional data. The collection of meta data corresponds with the social media logic of deep mediatization (Couldry and Hepp 2017), where not only the personal data is used to analyse our personal behaviour but is also used to display mechanically curated and selected content for us. This harvesting of user behaviour and continuous curating of content is an ongoing process designed to bring new personalised advertising to every user (Dijk 2018).

Clearly, after the Cambridge Analytica scandal, the game has changed, and social media has with this scandal lost its innocence in the eyes of the broader public, but people still have to use these social media tools to manage their personal relations. Today, questions are made like on the one hand “why does it matter?” (Braae 2018) and on the other hand “what can we learn from the Facebook Cambridge Analytica scandal?” (Tarran 2018). Already two years before the scandal was revealed, the artist and social media activist Aral Balkan analysed this transformation of social platforms dramatically, saying “we're all cyborgs being farmed by Silicon Valley” (FM4 2016). In an interesting comparison, Balkan argues that we live in a new era of feudalism: in feudalism, slavery harvested bodies, today Facebook is harvesting people and in particular the personal data of individuals. Other authors hit in the same score by analysing this shift of social media from a seemingly free and helpful tool to help us organise our social life, to a business model which harvests and repurposes personal data (Srnicek 2017, Dijk 2018).

Another dimension of the Cambridge Analytica data scandal is the fact that the executive staff of Cambridge Analytica brag about having influenced the Brexit referendum in 2016 and the 2017 US presidential elections by micro targeting voter behaviour. The influence of social media on voting behaviour and the attitude of voter groups is still being widely discussed. The FBI and especially the Muller Report (Times 2019, Muller 2019) both argue that the Russian intelligence and Russian ‘troll
factories’ influenced the US Elections precisely by analysing and micro-targeting selected user groups. This happened not only through traditional ad-campaigns for candidates and issues but also through dark-posts and black propaganda where the source of the post or campaign is not disclosed. Dark-posts are tailored posts that are displayed only for a small and specific selected target group on a micro-sociological level.

Due to the short time span since the reveal of Facebook Cambridge Analytica scandal in March 2018, only few articles concerned with the implications and origins of the scandal (e.g., Braae 2018, Tarran 2018) have been published. Facebook and social media as a campaigning tool (e.g., Magin 2017, Bronstein 2018) has however been more broadly studied. Facebook is not only looking into how we connect (Mahdawi 2018) and with whom but also is structuring its user base into social classes by creating “Socioeconomic Group Classification Based on User Features“ (Wang 2018).

It can be argued that what remains to be explored is not so much the implications of the scandal itself and the logic behind the deep mediatization of social media, but the broad impact of user segmentation for micro-targeting of voters and black posting messages used in election campaigns. Obviously, the recent developments in data mining and micro-targeting user behaviour are not only affecting the political propaganda but also change the way personal advertisement is presented and delivered over digital media. Especially the forms of classification, and the social user stratification, help social platform providers and their business clients to better understand the underlying social structures of users which are not visible by firsthand thorough the raw data of single conversations. Therefore, the social classification of users is a very powerful interpretive method for structuring user behaviour and better analysing their individual needs.

As far as I am aware, little empirical research and very few studies have been conducted so far on the mechanisms and the user- and data models surrounding the social media use of personal data. The background of this study deals with similar questions as the current discussion also deals with: How could Cambridge Analytica claim to know the personal preferences and political opinions of millions of US voters? Which mechanism can be used to find and select micro-targeted groups and provide them with tailored messages? Clearly the more information is collected (factual data) — like who is talking with whom, and what they are talking about – the more knowledge will also be collected on what is today “hidden information”. That is, information that belongs to the area of socio-economic stratification and social class. This new information, which is analysed with the help of machine learning tools, is equally important as classical demographic information. Both social science and natural science have equal meaning when it comes to the analysis of social phenomena. This balanced view applies in particular to the philosophical school of Critical Realism. In short, CR tries (see Chapter 3), to overcome the historical
dichotomy between natural sciences and the interpretative sciences, in order to create an abductive and most likely explanation (see Chapter 4) for an observed social phenomena. With this study, I intend to show that the application of the CR approach (Chapter 5) and selected empirical data helps to create a thick account that is useful for the interpretation of my selected social event.

The original intension of this study was to investigate the mis-use of personal data in social media. If someone wants to get to the bottom of this question, you immediately ask yourself the question which data exits, apart from your classic demographic facts and the personal data you willingly give away at the registration for social media services. The final study turned into an analysis of apparent and most likely used methods by Social Media platforms to generate personalised data from collected meta data. In this study I describe two methods which are based on the analysis of meta data: the Social Network Analysis (SNA) explained in Chapter 3.4 and the Sentiment Analysis (Chapter 3.5), which are used to form social profiles of single users that go beyond the basic registered data like name, age, address and email. In a second and more interpretative approach I am investigating the possibility to determine individual’s social strata through the use of certain social media analysis tools (Chapter 3.6), combined with cluster analysis and the Sinus-Milieu model.

The starting point of this study was a wish to investigate the micro-social behaviours of selected Twitter users. In order to do this, I gathered empirical material and adopted a research methodology (see part 4.1 and 4.2 of this study) of intensive and extensive research procedures.

**Purpose statement**

Besides the misuse of personal data by the big social media giants, another motivation of this study is a frustration related to the still ongoing controversy between proponents of quantitative methods on the one hand, and proponents of qualitative methods on the other hand (see Chapter 3.2). Social media research is, in my mind, too often framed within the dichotomy between deductive and inductive reasoning. While some institutions and researchers propose the search for natural laws regulating social phenomena, others propagate interpretative reasoning for social causality. Working for 25 years with Internet technology and social media, my experience is that both approaches are useful and helpful to understand contemporary social phenomena. An important purpose of this study is therefore to investigate the usefulness of mixed methods approach for social media in combination with the new approach of CR. Critical realism and mixed methods approach acknowledge both worlds of sociology and try to unify qualitative and quantitative methods. For the last 20 years, Critical Realism has captured the hearts of social scientists and philosophers. There is literature to analyse social phenomena and media, but I have identified a lack of research that uses the framework of CR for social media research. One could say that the overall purpose of this study is to contribute to a deeper
philosophical debate about the relation of social media studies and CR. This motivated me to frame my research in the following question:

*How does the philosophical framework of Critical Realism (CR) and the unification of inductive and deductive methods, help to produce thicker accounts of the studied reality within social science and media studies?*

Following this purpose, firstly this study tries to analyse the changing role of social media under the light of CR and the possibilities for social research that the study of social media in combination with CR can offer. Secondly, this research is using empirical data to support this case with the collected Twitter conversation of a selected social group (see Chapter 4.4). The methods I use for this study can be considered as secondary to this argumentation and more as an illustrative way to support this over all question and purpose of this study.

Instead of asking more general philosophical and ontological questions about the complexity of the current world and its changing social structures, for this study I have selected a more focused approach in order to investigate the complexity of micro-social behaviour and how sociological methodologies can help gain understanding about the background of groups and communities on social media (see Chapter 5). By analysing this micro-social behaviour, I would like to analyse specific user groups, and the possibility to derive social stratification from their communicative behaviour.

Studying social phenomena often means analysing and theorising on an abstract level about social regularities and patterns. This abstraction of a small group to a larger group of people is referred to as emergence. Bruno Latour (2016) defines this process of emergence as the forming of interests by many. As one can investigate on an everyday basis in Social media when single micro-actors become macro-actors and sharing the same interest at the same time. These processes are accompanied by an increasing social complexity. As we can see in today’s social research these investigations are concentrating its efforts on a macro level and often forget what Bruno Latour describes as the *baroque complexity* of individual interactions and networking.

As the theoretical background of this study, I use Pierre Bourdieu's ideas on social and cultural capital to identify socio-economic groups in the empirical data. As a second source for social identification, I use the Sinus-Milieus studies conducted on Internet users in Austria. To qualify the empirical data, I analyse the forms of use of Twitter of my studied group (i.e., Austrian candidates to the European Parliament in the European elections of 2019). In this study I argue that in the study of micro behaviour of social groups, traditional sociology has reached its limits. In order to derive causality from social phenomena, there are currently two dominant tensions in social research. On one side, there is the positivistic approach of analysing social phenomena thorough quantitative data, and on the other side the constructivist approach with its predominantly qualitative models.
Both approaches have their merits, but today they present themselves in contrast to each other. To overcome this dichotomy, I apply the approach of CR, which tries to combine these two different positions. Critical Realism was first formulated by the philosopher Roy Bhaskar (Archer et al. 1998). This new approach acknowledges both camps of knowledge creation and combines transcendental realism (known as philosophy of science) with critical naturalism (philosophy of social science). Bhaskar argues that transcendental realism and critical naturalism are both equally employable in the physical world and for social phenomenology.

CR presents itself as a “meta philosophy”, but for the application in social research it favours a mixed methods approach. For this study, I apply mixed methods to investigate communication on the social media platform of Twitter related to the European election of 2019 in Austria. The mixed methods approach contains both theoretical schools of sociology. The combination of qualitative and quantitative methods is the backbone of this methodology.

The present study is divided in three phases: 1) collection phase, 2) analysis phase and 3) abductive phase. The first phase consists of the collection of empirical material and data gathering. The data gathering focuses on retracting Twitter conversations involving the main Austrian candidates in the Austrian European election campaigns. The second phase is the analysis phase, with an investigation of micro-social structures where I analyse micro-social behaviour through a Social Network Analysis (SNA). In the first stage of the second analytical phase, quantitative research questions address the social and cultural status of the investigated Twitter users as independent variables. The belonging of the Twitter users to a particular social stratum is the dependent variable. Information from this quantitative stage of the investigation is explored further in a second, qualitative stage. In the second stage of this sequential mixed methods study, I analyse the use of social classifications like the Sinus-Milieus Models and compare the results of the first stage with a sentiment analysis in order to be able to establish a classification model of the Austrian Twitter users. In the second stage, qualitative observations will be used to probe significant changes in the to be established socio economic model by exploring aspects of Twitter use, the enclosed networks and topics with selected participants on Twitter. The reason for the follow-up by a qualitative research in the second stage is to provide thick accounts (Edwards et al. 2014) and to better understand and explain the quantitative results of the first stage on the basis of a socio-economic classification model for the Austrian Twitter user discussing the EU elections.

As empirical basis, I use datasets on the use of Twitter of the main candidates to the European Parliament in the Austrian EU elections 2019. I visualise the interactions of these social networks, which helps to analyse the different underlying sub-clusters. The goal is to theorise why these clusters are formed. Finally, I am interested in the underlying sentiments and motives of these structured clusters. As an
aid for this analysis I use a sentiment analysis tool (Opinion Tracker) developed by the company Datenwerk (Datenwerk 2019).1

In addition to the overall purpose of contributing to a wider debate on CR and social media studies, I am attempting to answer the following two research questions with this study. The two research questions are discussed in more detail by a hypothesis.

RQ1: How can the application of socio-economic classifications help establish a better understanding of the actors in a selected social media phenomenon?

RQ2: How does the form of use of certain social media tools or in this case the forms of use of Twitter as a communication tool, indicate the belonging (under special considerations of Bourdieu's social and cultural capital) to a certain social-economic stratum?

In order to answer my research questions, I as mentioned earlier I use a mixed methods approach. To answer the quantitative part of this study, I have developed the following hypothesis:

If individuals are intensively communicating with each other via Twitter, then this can be seen as an indicator that they belong to the same social class (considering Bourdieu's model and its cultural and social capital dimensions).

In this case the intensity of communication via Twitter is treated as independent variable and the belonging to a certain social strata are treated as a dependent variable.

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1 Opinion Tracker is a commercial social media monitoring tool developed by Datenwerk. Access to the tool was left to me out of courtesy for my research purposes. http://www.opiniontracker.net/en/
2. Literature Review

When it comes to analysing the contemporary changes of social media, from a helpful tool for private communication to a deeply mediatized instrument which monetise private data, I believe that traditional research methods are reaching their limits. In this literature review, I try to layout not only the field of today’s deep mediatization (Couldry 2017, Srnicek 2017, Dijck et al. 2018) in social media, but also describe the methods and possible applications of today’s socioeconomic classification systems (Wang 2018, Barth 2017) which are used for a finer diversification of social groups than traditional methodologies. I have structured this literature review into three distinct parts where I describe three different frameworks that I use to conduct this research. The first part gives an overview of the theoretical frameworks used for this paper and presents the underlying ideas of Critical Realism to describe the real-world problem and its controversies. In the second part, I try to layout a conceptual framework for using socio-economical classifications or social stratification in different fields like social media and communication, cultural studies and politics. The third part describes how the approach of mixed methods is applied to answer the research question comprehensively in an analytical framework.

The theoretical framework I use for my analysis should be put into its historical and ontological context and be seen in relation to the epistemological dispute about the monopoly on the analysis of the real. Former and present camps of philosophers and sociologist who dispute over the nature of knowledge creation can be divided into two different kinds. On the one side, Positivists and Empiricists who claim that natural laws of society exist generically in *a priori* and have to be discovered by scientists in experiments. On the other side are the Constructivists and Postmodern thinkers, who believe that reality and all knowledge is actively created by social interactions. The positivist position ontologically sees the natural as a priori and given, which Hamlin (2002) defines as a neo-Durkheimian position where “social structures are taken to be external and prior to individual consciousness” (Hamlin 2002:98).

The opposite camp, that is, the interpretative and constructivist camp, claims to be anti-naturalistic (Hamlin 2002) and claims that science operates in a hermeneutic circle where the researcher and the researched object are influencing each other. Some theorists even claim a strong postmodern turn “which denied explanation in favour of interpretation” (Archer 2016:1). This paradigm of interpretative sociology identifies the “relations of domination, which are the basis of everyday social experience” (Hamlin 2002:98). On an ontological level, this means that objectivity and the truth about reality can only be reached *a posteriori*, which reflects the “idea that the subjects of the social sciences are significant objects which find no equivalent
in the realm of Nature” (Hamlin 2002:99). As Hamlin (2002) points out, the third traditional sociological paradigm, the neo-Weberian school, also show an incompatibility with modern sociology like the two other (neo-Durkheim and interpretative sociology). For neo-Weberians, “social sciences cannot identify general universal causes of social phenomena” (Hamlin 2002:102) and does only look for individual reasons of a social phenomenon.

2.1. Theoretical Framework

Describing a theoretical framework of a research topic that is based on a mixed methods approach confronts the author with a methodological dilemma. The mixed method research approach uses both quantitative and qualitative data, which have two different approaches to using theory to describe social phenomena and reality. As Creswell (2018) points out, to the quantitative methods the concept of causality (X-> Y/X causes Y) is central, in which data and its variables are related to answer the research questions. When using qualitative methods, on the other hand, data is used to answer questions about a social phenomenon where theory provides “an overall orienting lens for the study of questions of gender, class, and race” (Creswell 2018:113). The dilemma arises from the contradictory concepts of qualitative or quantitative data collection and interpretation. According to Creswell (2018), using theory in a mixed methods research includes both the deductive reasoning for quantitative data and the inductive reasoning for qualitative data, “using theory deductively, in qualitative theory testing and validity or in using inductively as in emerging qualitative theory or pattern” (Creswell 2018:117).

Critical Realism (CR)

CR is often portrayed as a meta-theory rather than a theory itself (Zachariadis 2013, Archer et al. 2016, Hamlin 2002), and has to be understood as an aftermath of the postpositivist crises of the 1970s until the 1980s. In these science wars, the two sides (positivists versus constructivists) met in relentless disputes about the right and true interpretation of reality (Gieryn 1983, Labinger & Collins 2001). On the one side, the proponents of a positivistic and natural science approach where knowledge creation is based on deductive methods and theory is verified by empirical data (social facts), and on the other the constructivist approach which acknowledges that social facts are perceived inductively and used for building theoretical models about the world.

This area of conflict, as described by author Cynthia Lins Hamlin (2002), is about “the possibility of an objective account of social reality” (Hamlin 2002:97). By analysing Raymond Boudon's theoretical work “Progrès récents de la théorie sociologique” she is defining three distinct approaches of today’s epistemological traditions.
The first approach is the neo-Durkheimian paradigm, which aims to discover regularities in the form of statistical relations or chronological series. Hamlin states that “social systems should be analysed in terms of a non-random combination of characteristics” (Hamlin 2002:97) deductively to find structures or patterns in social phenomena. According to the neo-Durkheimian approach, the methods used in sociology should be based on natural science methods and deal with the relationship between variables, and these methodologies are not different from the ones used in natural science. For Hamlin (2002) the neo-Durkheimian paradigm on its ontological level includes a priori the natural order, “because social structures are taken to be external and prior to individual consciousness” (Hamlin 2002:98).

The second approach is the paradigm of interpretative sociology. Hamlin defines this as anti-naturalism (Hamlin 2002) because of its tendencies “of identifying the relations of domination which are the basis of everyday social experience” (Hamlin 2002:98). On its ontological level, this is the “idea that the subjects of the social sciences are significant objects which find no equivalent in the realm of Nature”. This means that objectivity can only be reached through hermeneutic interpretation, and this procedure, according to Hamlin (2002:101), “presupposes a circular relationship between pre-understanding and the explication of what is understood”. On an epistemological level, this interpretation derives form one’s experience and is conceived a posteriori. This interpretative approach is based on methodologies that are based on inductive reasoning.

The third paradigm can be characterised as neo-Weberian. To Hamlin, the neo-Weberian approach is incompatible with the neo-Durkheim and other interpretative approaches of modern sociology. According to Hamlin, “social sciences cannot identify general universal causes of social phenomena” (Hamlin 2002:102) and only looks for individual reasons for a social phenomenon. According to Hamlin, when analysing Weber “social phenomena are a result of the aggregation of individual behaviour” (Hamlin 2002:102), and these actions can be derived from the specific social environment of the actors.

A way out of this dilemma and epistemological controversy is offered by CR, an idea first formulated by the philosopher Roy Bhaskar in the 1970s (Archer et al. 1998). In a third way approach, CR tries to combine both the natural and the social science in theory and methodology. As Archer et al. (2016) explain, CR positions itself as an alternative to the strong positivists on the one hand, who are searching for law-like forms of regularities and analysis based on regression models and the strong postmodern turn on the other hand, “which denied explanation in favour of interpretation” (Archer et al. 2016:1) with the focus on “hermeneutics and description at the cost auf causation.” Archer et al. (2016) describe CR as a “series of family resemblances” where “various commonalities exist between members of a family”. For the authors CR is not an empirical program or a methodology, it is more a philosophical program. Archer et al. (2016:2) define CR as a meta-theoretical position.
with three distinct layers. On the first level are the empirical data, on which secondly
the researcher can build explanatory models, and then on a third layer are the meta
theories that finally form the philosophy behind the theories.

*Picture 1: Components of Critical Realism according Archer et al. 2016*

1. Data  
2. Explanatory  
   models  
3. Meta theories  
or philosophy  

The new approach of CR leads to a normative agenda for social science and science
itself with an *ontological realism* and *epistemic relativism* (Archer et al. 2016:2). One
central element of CR is the combination of qualitative and quantitative
methodologies in a mixed methods approach. Lipscomb criticises the mixed methods
research approach, which in his words is placed between realistic and pragmatic
assumption, where “pragmatism is situated in mixed method work” (Lipscomb 2011b: 2).
In that logic, realists always look for a *useful truth* and pragmatists are accepting
only *factual truth* even when it is against one’s beliefs. But according to Lipscomb,
this describes a way out of the endless controversy of post-positivist versus post-
modern philosophers and about ontology and the epistemological knowledge creation.

As Danermark et al. (2005:163) summarise it: “Critical realism is a meta-theory,
which enables us to understand the importance of methodologies in a partly new
way.” They argue that CR is not methodological relativism, but rather “a conscious
choice of design and method” (Danermark et al. 2005: 152). As Danermark et al.
point out, not all methods are equally suitable. Therefore, I have chosen to adopt the
approach of Danermark et al (2005): a *critical methodological pluralism* with a
Critical Realism approach for this research. Therefore, Danermark et al. argues that
firstly, the distinction between quantitative and qualitative methods is obsolete,
secondly that there is no such thing as universal methods, and thirdly that today’s
sociological community already advocates multi strategy research such as *method
triangulation, combined operations and mixed strategies.* (Danermark et al.
2005:152).

What types of results could one expect using CR as a meta-theory guiding multi-
methodological approaches? Since Critical Realism tries to avoid traditional
dichotomies between qualitative and quantitative methodologies, Danermark et al.
(2005) introduce a new methodological framework for epistemological knowledge
creation: the intensive and extensive empirical procedures. The relation between
*intensive and extensive research design* reflects the arc of tension of today’s
sociological theorising like “the search for generative mechanisms, as well as in investigations of how mechanisms manifest themselves in various contexts” (Danermark et al. 2005:163). The intensive empirical procedure is based on data collecting and qualitative analyses, whereas the extensive procedure comprises statistical analysis and quantitative data collection (Danermark et al. 2005). As Danermark et al. (2005) explain, these methods are “set in [the] particular meta-theoretical context” (Danermark et al. 2005:163) of Critical Realism and the procedures are to be understood as “complementary empirical procedures” rather than the opposing of qualitative versus quantitative analyses.

Danermark et al. (2005) describe the intensive procedures as trying to focus on mechanisms which produces social events. These generative mechanisms are complex and hard to study, and the researcher has to study a limited amount of cases more intensively. Intensive research focuses on social mechanism and how they work in specific situations, which “involves tracing the causal power and describing the interaction between powers” (Danermark et al. 2005:166). For the extensive procedures, on the other hand the researcher seeks to study “how common a phenomenon is” or “what the characteristics of a particular population are” (Danermark et al. 2005:166), with the particular interest of what are the empirical characteristics of a specific group and the size or the amount of people belonging to a certain strata.

Danermark et al. (2005) describe these empirically characteristics of certain strata as “demi-regularities” (Danermark et al. 2005:166). These demi-regularities are mechanism that do not appear randomly and unsystematically they are dominating mechanism over a long period of time. These mechanisms give generalities or as he calls demi-regularities/demi-laws of social strata or classes. Danermark and Lawson (1997) are claiming that social researchers try to explain social phenomena by identifying demi-regularities and are theorising about demi-laws. Danermark et al. suggests to use abductive and retroductive methods for intensive and extensive procedures in search for demi-regularities of the investigated social phenomena.

Today’s media studies are dominated either by empiricist quantitative measurements or by subjectivism and its analysis of the asymmetry between producers and consumers. CR overcomes these structural gaps by avoiding “to choose between macro- and micro-causality, between inference from text and from causal linkage” (Hesmondhalgh and Toynbee 2008:21). As Hesmondhalgh and Toynbee explain, CR unifies both the inductive and the deductive approaches of social research, in order to “better reflect the need for multiple perspectives in understanding the complexity of media-society relations” (Hesmondhalgh and Toynbee 2008:21). In this regard, I would like to demonstrate the benefits in arching this gap of today’s media research. This study is an attempt to accomplish this aim, in producing a thick account of the data I have collected for the present case study on socio-economic stratification of selected Twitter users in the Austrian EU-elections campaign.
2.2. Conceptual Framework

Studying social strata is always a concern of sociological epistemology. Throughout history, and long before Karl Marx wrote along with Friedrich Engels in the Communist Manifesto in 1848 (republished by Dean 2017) about oppressors and the oppressed, thinkers like Aristotle (350 BCE) theorised on the natural division between free people and slaves. As we can see, social stratification goes way back, and the system of social classes is a ranking of people by unequal distribution of space, education, wealth, health and power. As Kerbo (2006) writes about the historical development of social stratification, he analyses that Durkheim uses social stratification as a functional theory by dividing social types by external inequality and internal equality. In this division, their internal inequalities correspond with talent and social status, whereas their external inequalities are based on the externalities like properly operating economy which allows a free flow of talent between social strata. Kerbo further analyses Max Weber's classification as “class-divisions based on ownership as well as divisions based on occupational skills” (Kerbo 2006:3) and in relation to the marketplace they are working in. According to Kerbo, Weber acknowledged that people could be “divided over honour, status, or prestige with respect to a strongly held value system and political or organisational power” (Kerbo 2006:3).

Building on the idea of Weber's value systems and organisational power relations, Pierre Bourdieu (2010) developed his idea about social strata based on economic class positions that shape the views of its members. In his widely acclaimed book “Distinction: a social critique of the judgement of taste” (Bourdieu 2010) first published in 1984, Bourdieu analyses the economics of cultural goods with its specific logic. His book “Distinction” is based on a long and extensive empirical research, which he conducted between 1963 and 1968 on French culture and society, using both qualitative and quantitative methodologies. According to Bourdieu, taste (Bourdieu 2010) is a signifier for the cultural hegemony of specific social strata. To the classical canon of financial and social capital, Bourdieu adds the idea of cultural capital as well as symbolic capital. Besides the traditional idea of financial capital, which translates into financial power, social capital defines the normative cohesion of social groups. Bourdieu defines symbolic capital as the form of e.g. academic title or membership that guarantees an economic benefit such as e.g. higher credit ranking (Bourdieu 1986) in form of material as well as symbolic exchanges. Cultural capital Bourdieu (1986) defines as long lasting dispositions in an objectified state, for instance as one could see in the case of educational qualifications or in form of cultural goods such as “pictures, books, dictionaries, instruments, machines, etc.” which supports one’s individual education, intellect or style (Bourdieu 1986).

Scholars who are critical of Bourdieu (e.g., Mader 1987) address several concerns about Bourdieu’s work. Firstly, Mader is critical about Bourdieu’s limited metaphorical preferences of game and capital (Mader 1987:442), and secondly that
he has “confound fact and value” (Mader 1987:447). It is problematic, according to Mader, of Bourdieu to “mistake value as a property of an object”, which according to Mader violates social scientific practice. A third concern that Mader (1987) addressees is that Bourdieu uses the term culture restrictively in the “sense of cultivation or distinction in arts and letters” (Mader 1987:448), which diverts from the cultural studies term used by Williams and Geertz (Mader 1987:449). A fundamental critique on Bourdieu’s idea about habitus, is formulated by Reinecke (2017): “the analysis of Habitus of different classes leads to a re-ontologisation of social classes rather than deconstruction” (Reinecke 2017:387), meaning that Bourdieu was more interested in establishing an own artificial classification of classes than a real debate and analyse of today’s class system.

In recent history several attempts to try to establish new social strata classification systems have been made. A prominent attempt was made by the British Broadcasting Cooperation (BBC) in the year 2011, the BBC’s 2011 Great British Class Survey, with a total of 161,400 web respondents as well as representative sample surveys (Savage 2013). This extensive study is an update on the 1970s codified system of the UK’s National Statistics Socio-Economic Classification (NS-SEC), which was based on professional characteristics (occupation or employment status) of Britain’s population. According to Salvage, the latest study takes into account the changes, such as “the role of social and cultural processes in generating class divisions” (Savage 2013: 220). The main achievement of this study is the consideration of Pierre Bourdieu's idea of measuring social, cultural and economic capital (Savage 2013).

Also based on Pierre Bourdieu's studies about the “habitus” of certain social groups, the researchers at the Sociovision Institute founded the Sinus-Milieu studies (Barth 2017) and built their model on the concepts of cultural and social capital. The Sinus-Milieu studies are a well-documented “non-directional life exploration” (Barth 2017:5) on the socio-psychographics of certain social classes in the DACH Region of Europe (Germany, Austria and Switzerland). The development of the Sinus-Milieu methodology to study social groups in their social environment and setting goes back to the middle of the 1980s, where the changing of traditional voter segments gave established political parties headaches (Barth 2017). The Sinus-Milieu Model explains social-psychographic characteristics of a studied social group and was developed around academic social inequality research at the university of Heidelberg. The Model provides a sociological-lifestyle explanatory framework for the analysis of given social phenomena. The idea behind the Sinus-Milieu methodology is that social groups not only can be described through demographic characteristics like age, gender, and income, but also according to their values or socio-psychographic characteristics. Today the Sinus-Milieu model can be found often in the domain of policy making and political communication (Bertelsmann 2017, Inhoffen 2017, Norwine 2014, Utrup 2018, Vehrkamp 2017), or in the studies of mobility (Haufe et al. 2016) and integration (Erdem 2013) and media and marketing (Barth 2017,
Schneider 2018) with a special look on social and digital media (Janowitz 2015, Schwartz 2016). Despite the fact that the Sinus-Milieu model is broadly used for customer segmentation in media and marketing, some critiques (e.g., Erdem 2013, Ilg 2016) argue that the Sociovision institute, the organisation behind the Sinus Model are not fully disclosing the mechanism and methods behind the Sinus-Milieu model. Erdem is critical of the “collection and analysis of data on immigrant populations” (Erdem 2013) and its post ethic vision, as well as “its de-emphasis of social inequalities rooted in relations of gender, ‘race’ and class.” (Erdem 2013:1). With similar considerations, Wolfgang Ilg (2016) points out the lack of transparency which “raises doubts about the scientific basis of this research” (Ilg 2016:1).

A common approach to social class is the question of power relations and inequality. A contemporary perspective on inequality in social and digital media is provided by Van Dijk (2006) in his book *The Network Society*, which analyses digital inequality through access and skills. A recent study form Yates and Lockley (2018) analyses the conditions of social class and social media use based on the work of Pierre Bourdieu. Simeon Yates and Eleanor Lockley (2018) conclude that “forms of digital media use are in correspondence with other social, cultural, and economic aspects of social class status” (Yates and Lockley 2018:1)

In summary, one can say that for today’s social researcher, numberless ideas to measure and uncounted methods to investigate online media communities are available. But as this literature review shows, very few attempts have been made in the academic field to investigate the socio-economic background of actors in social media. On the contrary, we know that the social media platforms themselves are developing approaches and methods to categorise their users for commercial purposes. This study seeks to fill this gap and tries to develop a methodology for social research that considers both qualitative and quantitative research methods at the same time.

2.3. Analytical Framework

As the social media researcher Simon Lindgren (2017) argues, in comparison to traditional offline forms of scientific data collection, an important feature of social media research is that “the boundary between data and subject becomes less clear” (Lindgren 2017: 237). Counting and analysing pure Twitter data and studying the underlying laws would be a particularly natural part of a positivist and empirical social science. In contrast to that, the analysing of the social structures or networks and their dependence on human actions, would be accounted for the interpretative and constructivist sociology. According to Lindgren (2017), this dichotomy of data and subject or the natural versus the social, should be repealed, especially in the case of social media studies. Under this light the social media platform Twitter opens up new possibilities for researchers. Through the use of new social media research tools, new
connections between the natural and society and theory and methods can be investigated.

The mixed methods approach I use for this research requires a different approach to the use of methodologies (Zachariadis 2013, Creswell 2018). The distinct features of either qualitative research or qualitative research, according to Creswell, have to be combined (Creswell 2018). Whereas qualitative research is more inductive, “the researcher making interpretations of the meaning of the data”, the quantitative approach is “testing objective theories by examining the relationship among variables.” (Creswell 2018:42). Zachariadis, Scott and Barrett (2013:1) explain the “increasing popularity of mixed methods approaches” by the “growing diversity in information systems (IS)”. Also, Creswell (2018) states that mixed methods go hand in hand with the progress in “our data analysis and ability to analyse complex models” Creswell (2018:51). But this, at the same time, leads researchers to the contradictory decision to use in their theorising either the form of qualitative or quantitative studies. Each of these two approaches has distinct features but are also overlapping in their structures and constructions. In a nearly Solomonic judgment, John Creswell recommends to use of a mixed methods approach in order to make use of the best of two worlds.

In relation to the first research question: “if investigating the use of Twitter is a good tool for analysing social strata?”, I am looking into the question also pointed out by Yates and Lockley (2018): “if the forms of digital media used by certain user groups reflect the social, cultural and economic aspects of certain social classes?”.

With the analytical framework for this study, I want to layout a possible new path to overcome the dichotomy between empirical and interpretative sociology in social media research. For contemporary social researchers, the use of mixed methods seems to be the state of the art methodology, since it is a combination of the best of both worlds, the world of empirical numbers and law-like regularities and the world of constructivism and its interpretations. With this study I would like to go beyond this artificial dichotomy, and use a mixed methods approach based on CR. With this investigation, I would like to contribute to the present discussions about the benefits of applying CR to social media research. One aim of this study is to address the need of an overarching philosophy and in particular a methodology to overcome the historically grown and artificial cleavage between qualitative and quantitative sociology. With this study, I would like to show the benefits of investigating social media phenomena, guided by the use of CR as a meta-theory with its combination of inductive and deductive epistemological reasoning.

2.4 Summary

Following the overall purpose of this study to describe the use of Critical Realism in social media research is a new endeavour. I have identified a gap in today's academic literature on social media research using CR as an ontological and
epistemological framework, I had no role model to follow a strict procedure for my research. Under this light, I had to adopt existing CR based research models for my own work and develop three distinct approaches for my social media research. Firstly, as explained throughout this chapter, I apply a model of Critical realism developed by Archer's et al. (2016), (see picture 1) and combine it with Danemark's model (2005) of intensive and extensive procedures for my research to create a unique theoretical framework (Chapter 2.1) for this study. Secondly, to further approach the idea of CR, I develop a conceptual framework (Chapter 2.2) where I use Bourdieu's social and cultural capital model for this research to analyse the collected data. I use this conceptual lens as an aid to analyse and produce a richer account of the empirical data. Finally, my analytical framework (Chapter 2.3) goes beyond the existing idea of only applying mixed methods to analyse the collected data. Under the idea of CR, I apply three different methods to analyse the collected data and unify qualitative and quantitative methods.

CR is more than just another form of mixed methods. In its approach, CR tries to combine quantitative and qualitative methods under ontological and epistemological assumptions which leads to an understanding of demi-regularities (Zachariadis et al. 2013). I would argue that the forms of cultural and social capital and its connected power relations can be considered as demi-regularities and should be studied not only in their qualitative and quantitative dimensions but under the overarching idea of CR. So, in conclusion it can be said, that with this research, I try to fill an existing gap within Social media studies, by opening the idea of mixed methods to the field of ontological and epistemological reasoning of Critical Realism. Therefore, in the next chapter I discuss extensively the implications of Critical Realism when it comes to deductive and inductive reasoning and how it relates to my research.
3. Theory

The present study focuses on class relations in social media but also wants to show the benefits of the use of a mixed methods approach and Critical Realism (CR) as a theoretical framework for today's social researchers when analysing social media. The overall question for this study asks if it is possible to identify class relations in social media, and if, then how? In other words, I address the question: How does social classification help establish a better understanding of the actors in selected social media phenomena? In order to attempt to answer these questions, I followed a mixed methods approach, and conducted both a quantitative and a qualitative analysis on the use of Twitter as a communication tool in the Austrian election campaign towards the European parliamentary elections in 2019. The study is based on data on the Austrian parties, and 13 of their main candidates for the European Parliament in the election in May 2019.

To address the research gap of Social media studies applying CR in the academic literature with theory, I follow the model of Archer et al. (2016), like Picture 1 (p. 12) in combination with Danermark's et al. (2005) model of intensive and extensive procedures. The arguing for applying an advanced Critical Realism framework requires an extensively interpretation of the theoretical model behind. For this reason, I spend a good amount of this theory section to introduce a deeper argumentation for the use of CR in Social media studies.

Studying such a complex social network as Twitter by applying a single (qualitative or quantitative) approach or theorising on the basis of a single idea would lead to a very limited understanding of the overall dimension of a given social phenomenon. Based on this assumption, I use CR as a new form of a social ontology that combines strong realism and its aim for the search of generic laws with hermeneutics known from the interpretive social sciences. Therefore, I follow as Gorski (2013) defines a realist turn “away from positivism and constructivism” (Gorski 2013:659) towards Critical Realism which helps me to analyse the present complexity of the EU elections 2019 as a social phenomenon and create a thick account of the studied phenomena (Edwards 2014).

In this study, I use both quantitative and qualitative research methods. That is, I apply a mixed methods approach for studying the communications and interactions of the Austrian EU candidates. The epistemological framework of this research is based on the idea of Critical Realism. Archer et al. (2016) describes Critical Realism as a “meta-theoretical position” of reflexive philosophy or in my case of reflexive sociology. As Archer et al. (2016) explain, reflexiveness is not a methodology, rather it is “concerned with providing a philosophically informed account of science and
social science which can in turn inform our empirical investigations” (Archer et al. 2016:2). *Critical Realism* holds more to epistemology than to a single theory or methodology by acknowledging that there is a circular relation between cause and effect.

### 3.1. Realities of Small World Events

The sociologist Bruno Latour (2016) defines the process of building common interests among many, that is when micro-actors become macro-actors, as a process of defining or establishing and creating power. For Bruno Latour, these actors form a “multitude” of common interests, and at the same time they form a “Body Politic” (Latour 1981:278). The professor John Law (2013) calls the complexity of the actual *romantic complexity*, arguing that reality becomes bigger and more complex the more social interactions and layers of analysis are added. This idea is contrasted by the term *baroque complexity*, when small structures influences even bigger ones. The term *baroque* is used to describe the complexity within a social event or a non-coherence of a social phenomenon. In this research, I am not only investigating the reflexivity of the romantic and baroque complexity for social interactions in the Twitter sphere, but also the interaction of *the actual* and *the empirical* by reflecting the idea of CR. For the final part of the study, in addition to investigating the emergence of micro-social behaviours, I am also looking for the structural mechanism of *the real* which are affecting the actual and the empirical level in my study.

*Picture 2: Three levels of CR and reflexivity, adapted from Mingers and Willcocks (2004:384)*

On a macro-social level, this tension of *the real* manifests on the phenomenal level between the *actual* and the *empirical*, which creates causal relations. For the philosopher Roy Bhaskar *reality* is both *intransitive* (existing independently of humans) and *transitive* (Mingers and Willcocks 2004:384) like stratified and hierarchically ordered. This layering of *the real*, as can be seen in picture 2, is applied to mechanisms (natural laws), events or structures (e.g. social phenomena) and individual experiences. For Bhaskar, in his transcendental argumentation of CR, *the real* consists of many different events and some are not just those we actually witness.
These events are therefore *generative mechanisms* and are *intransitive object of knowledge* (Mingers and Willcocks 2004:384). The *transitive dimension* or the *transitive objects of knowledge* is the human production of knowledge (Mingers and Willcocks 2004:384). According to Bhaskar, the intransitive and transitive knowledge production belongs to the work of scientists and admits the *epistemic relativity of science* and “the fact that knowledge is always historically and socially located” (Mingers and Willcocks 2004:385). In conclusion, one could see that science, social and natural science are both dealing with either intransitive or transitive objects and that CR aims for explanations of independent underlying causal or generative mechanisms. On an ontological level, social structures are manmade, they do not exist independently and can be *reproduced or transformed by social activity* (Mingers and Willcocks 2004:387). Epistemologically social systems are interactive and open. As Mingers and Willcocks (2004) explain, this holds true for natural phenomena which can be controlled, and therefore studied in laboratories. This does not apply to the study of social phenomena. The measurements for social systems are limited “since intrinsically the phenomena are meaningful” (Mingers and Willcocks 2004:387) and meanings only can be understood and described but cannot be quantified and compared.

This study theorises social events on a micro-social level by applying CR on the *baroque complex* social phenomena of Twitter communication and communities. By following the CR approach, this study will describe in an abductive manner the *best possible explanation (picture 10)* for this given social event.

### 3.2. Mixed Methods Research and Critical Realism

An important feature of *Critical Realism* is that it strives to overcome the controversy between empiricism and postmodernism, which includes the “post-positivist crises in the natural and social sciences in the 1970s and 1980s” (Archer et al. 2016). *Critical Realism* does not stick to one camp, on the contrary: it favours both quantitative and qualitative research methodologies equally. In the same school of thought, John Creswell (2018) argues in his latest edition of his work *Research Designs*, that *mixed methods* research includes both deductive reasoning (quantitative data) and inductive reasoning (qualitative data). Creswell further argues that *mixed methods* include “using theory deductively, in qualitative theory testing and validity, or in using it inductively as in emerging qualitative theory or pattern” (Creswell 2018:118).

Danermark et al. (2005) extend the idea for *Critical Realism* and its deductive and inductive modes of inference with the mode of abduction (see Picture 3). This facilitates the researcher to draw new conclusions reached on the evidence and critical realistic reasoning. Danermark et al. (2015) argue that in an abductive reasoning the researcher “recontextualizes individual phenomena within a conceptual framework or a set of ideas” (Danermark et al. 2005:80f). In this mode, the researcher draws
inference from data to understand something new “interpreting within a conceptual framework” (Danermark et al. 2005:80).

Picture 3: Modes of deductive, inductive and abductive inference according to Danermark et al. (2005:80f)

<table>
<thead>
<tr>
<th>Fundamental structure/thought operations</th>
<th>Deduction</th>
<th>Induction</th>
<th>Abduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>To derive logically valid conclusions from given premises. To derive knowledge of individual phenomena from universal laws.</td>
<td>From a number of observations to draw universally valid conclusions about a whole population. To see similarities in a number of observations and draw the conclusion that these similarities also apply to non-studied cases. From observed co-variants to draw conclusions about law-like relations.</td>
<td>To interpret and recontextualize individual phenomena within a conceptual framework or a set of ideas. To be able to understand something in a new way by observing and interpreting this something in a new conceptual framework.</td>
<td></td>
</tr>
<tr>
<td>The central issue: What are the logical conclusions of the premises?</td>
<td>What is the element common for a number of observed entities and is it true also of a larger population?</td>
<td>What meaning is given to something interpreted within a particular conceptual framework?</td>
<td></td>
</tr>
<tr>
<td>Examples</td>
<td>If A then B</td>
<td>From an investigation of the attitude of a representative sample of Swedes, draw the conclusion that 30% of the Swedish population is in favour of the EU.</td>
<td>Karl Marx reinterpretation/redescription of the history of humankind from the historical materialist view.</td>
</tr>
</tbody>
</table>

In an effort of demarcation and clarification, Danermark et al. (2005) suggest not to use the old terminology and distinction between qualitative and quantitative research, but rather describe this approach as intensive and extensive procedures. Extensive and intensive procedures both describe “the search for generative mechanisms, as well as in investigations of how mechanisms manifest themselves in various contexts” (Danermark et al. 2005:163). Danermark (2005) explains the relation of intensive and extensive procedures to qualitative and quantitative methods like the intensive empirical procedure consist “substantial elements of data collection and analyses of a qualitative kind.” (Danermark et al. 2005:1963). The extensive procedure relates to quantitative data collecting and statistical analysis. Danermark et al. (2005) point out that the mixed forms of data collection are “set in a particular meta-theoretical context, that of Critical Realism.” (Danermark et al. 2005:163). The authors emphasis that these procedures are part of a greater whole, a critical realist ontology and not contrasting each other, but should be used as a complementary empirical procedure.
Empirical procedures according to Danermark et al. (2005:165)

The theoretical model I use to analyse social strata is based on the Sinus-Milieu Model. It was developed by the Sociovision Institute in the 1980’s and further detailed in the 1990’s. It has been described extensively by Bertram Barth et al. (2017). The Sinus-Milieu Model is widely accepted in the German speaking area for marketing research and socio-political research. The Sinus-Model is a social stratification tool to describe psycho-graphical characteristics of certain social groups. It has been used mainly to research and describe the social strata in the DACH-Region, that is the German, Austrian and Swiss populations. This theory indicates that by identifying specific lifestyles (for instance the different lifestyles when it comes to the use of communication utilities, or lifestyles expressed in styling of apartment interior) based on the Sinus-Milieu model, one could determine the social class of the investigated group of people. In other words, this theory follows the motto: “Show me your home and I'll tell you who you are!”. As applied to my study, this theory holds that I would expect my independent variable (the use of Twitter as a communication tool) to influence or explain the dependent variable (belonging to a certain class). The Sinus-Milieu Model is based on ideas originally developed by Bourdieu (1986), that is, the theory of cultural and social capital.

To answer the qualitative part of my study, I am looking for a hypothesis with the independent variable: using Twitter as a communication tool and the dependent variable: belonging to a certain social strata. The hypothesis I would like to prove can be formulated as:

*If individuals are intensively communicating with each other via Twitter, then this can be seen as an indicator that they belong to the same social class (considering Bourdieu's model and its cultural and social capital dimensions).*
As traditionally used for quantitative analysis, the causality of an independent variable has to be evaluated. To identify and describe the independent variable (the use of Twitter as a communication tool) I use two different social network analysing methodologies. Firstly, I use the Social Network Analysis to analyse the density of social networks. I use graph theory, first formulated by Leonhard Euler in 1736, to investigate the complexity of the built network and visualise the communications in a sociometric network diagram. This method allows for the analysis of the communication behaviour of certain people or organisations (nodes), the directions and the intensity of the interactions (edges). Secondly, I apply the structural balance theory (Heider 1958) to identify the inter-connections and communications of the investigated group based on Heider's idea on the Psychology of Interpersonal Relations (1958) and the cognitive balance of interactions, today known as Sentiment Analysis or Opinion Mining. I look for the interpersonal cognitive balance in the Twitter communication of the candidates. Therefore, I perform a Sentiment Analysis and investigate the emotions of pronounced sentences.

When it comes to the dependent variable, I am investigating the possibility to determine the belonging to a certain social class. Pierre Bourdieu's work Forms of Capital (1986) where he expands the classical concept of economic capital as a differentiator of social classes with the idea of social and cultural capital is central to this investigation. According to Bourdieu (1986), cultural capital becomes the “determinant in the reproduction of the social structure” (Bourdieu 1986:16). The Sinus-Milieu Model is based on the idea of Bourdieu's model “whereby the social class is determined by economic and cultural capital (education)” (Barth 2017:3). In the Digital Sinus-Milieu Studies, the DIVSI Internet Milieus developed by Borgstedt et al. (2016), a cluster analysis of the German social classes related to their use of Internet communicational tools was conducted. In a third analytical step of my research I apply the Sinus-Milieu model to the Austrian EU candidates and try to verify the findings of the Sinus-Milieu studies: that is, that by the form of use of specific communication tools (for this study the use of Twitter) one could conclude the belonging to a certain socio-economic strata.

3.3. Dependent and independent variables

Following, John Creswell’s Critical Realism and mixed methods approach on conducting a quantitative theoretical study, he reminds of the importance to “identify a theory that explains the relationship between independent and dependent variables” (Creswell 2018:109). The dependent variable is causally connected (dependently) on the independent variable. As the researcher changes the independent variable in an experiment, an effect on the dependent variable can be observed. In my case, the Digital Sinus-Milieu methodology is suggesting that the dependent variable is belonging to a specific social strata with the independent variable being the form of use of Twitter. To explain it in different words: by looking at the use of certain
communicative tools one could make conclusions about the belonging of people to a
certain social strata.

Analysing the Twitter sphere, I focus on a recurring social phenomenon. In my
study, I try to analyse the specific conditions for a communicative space at a specific
time: the election campaign towards the European parliamentary elections. The
battling for the 20 seats available to Austrian Members of the European Parliament is
spatially and temporally manageable. There is a limited number of candidates (I have
chosen to follow the main candidates on Twitter), and there is a limited time: in my
case, I have collected data all the interactions of these 14 candidates (not all of the
candidates use Twitter) from the 11th of January 2019 to 11th of April 2019.

The first-choice analysis tool for social scientists is undoubtedly Twitter. Twitter is
a perfect tool to study social processes for three reasons, firstly because Twitter
provides a unique opportunity for a researcher to investigate the field of
communication and how the candidates are interacting with the public. Secondly,
Twitter not only is a “public” tool which can be easily accessed by social researchers
but also provides APIs (Application Programming Interface) to extract the desired
data. Thirdly, a vast methodological toolbox, such as Social Network analysis was
created around the use of Twitter data. Furthermore, the way the candidates are using
this digital communication channel helps to understand how they are presenting
themselves and what they are communicating.

Twitter is a binary communication tool, which provides researcher and also a
broader public the possibility to download all communications between individual
users and to analyse the content and their individual connections. Therefore, it is
possible not only to analyse what the individual candidates say, but also with whom
and in what intensity they are communicating. As part of this, I use Twitter not only as
a content base, but it also enables me to do what can be termed opinion mining. This
opinion mining allows to examine the emotional background of individual tweets, and
to automatically classify them as positive, negative or neutral comments. This
classification of selected words is automatically generated by a machine learning
process that was trained via a Natural Language Processing algorithm (NLP) of words
used with a positive or negative connotation. Words that are not classified yet are
classified as neutral and can be trained. In addition to analysing the emotions of
individual tweets, I also analyse the social interconnections through a social network
analysis (SNA) of the Austrian EU candidates by investigating their interactions and
communicative intensities. In a deductive procedure I start with the more general
investigation of single social networks, which enclose the individual candidates and
analyse the intersection and their overlappings. These intense intersections or
exchanges and overlapping in Twitter communications, according to my hypothesis
indicate that most of the MEP candidates are likely to belong to the same social strata.

Following a mixed method approach, I describe first, the extensive procedures with
its quantitative measures and in a second step the intensive procedures with their
qualitative approaches. I start with the quantitative measures, that is, by describing the independent variables. In my study, the *independent variable* is the form of use of Twitter as a communication tool, and the *dependent variable* is the belonging to a specific social strata. At the beginning, in order to investigate the *independent variable*, I conduct a Social Networks Analysis (SNA) of the main candidates in a search for patterns, structures or disparities. This is followed by emotions and sentiments of single posts (tweets) using a Sentiment Analysis (SA) tool. As the *extensive procedure*, I am using the Sinus-Milieu Model which is based on Bourdieu’s theory on cultural and social capital in order to determine the dependent variable (the belonging to a certain social strata).

### 3.4. Social Network Analysis (SNA), Graph Theory

One of the building blocks of understanding today’s deep mediated social media landscape are social network analyses where networks of communications can be analysed and visualised. Social Network Analysis (SNA) is based on *graph theory* which models the relation between objects, persons or organisations. The unique feature of SNA is that individuals or groups are formulated as points (*Nodes*), which are connected over lines (*Edges*). Each of these connections have a direction and intensity. The thickness of the edge indicates a stronger connection and a more intense information flow between the nodes. For Scott (2019), the SNA is “concerned with the patterns formed by the points and lines and involves exploring these patterns, mathematically or visually” (Scott 2019:1) Exploring these patterns, effects on single persons but also on whole organisations can be studied more easily than on the pure data itself.

*Picture 5: Value Table and Graph Theory with nodes and edges between Persons (O,P and X)*

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>O</th>
<th>X</th>
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<tbody>
<tr>
<td>P</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>O</td>
<td>2</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>X</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>IN</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
Scott (2019) describes the origin of SNA in the 1960ies and 1970ies where researchers tried to show “webs of connection that tied them together through class-based links of schooling, club membership, and kinship” (Scott 2019:2) and to visualise the intensity of the connections or the *density of the network*. The origin of the social network theory can be traced to the rationalist and structuralism tradition of social research, where a fundamental idea is that the nature of human culture is based on interpersonal relationships and its underlying social structures. According to Scott (2019), this idea of a *social organism* or social system can already be found in the work of Ferdinand Tönnies (1887) in his book “Gemeinschaft und Gesellschaft” and Georg Simmel as they write about the formal sociology. As Scott is further analysing social networks as “the ‘forms’ of interaction that carry and contain the diverse subjectively meaningful contents that motivate the actions of individuals.” (Scott 2019:8). The first attempt of drawing systematically inter-connection of individual was according to Scott (2019:9) achieved by the emigrated Austrian Jacob Moreno in the 1930ies in USA. Moreno was the first who developed sociometric drawings with bubbles and connection as a sociogram, with arrows showing the direction of an interaction. These sociometric drawings based on Social Network Analysis visualise the connections between individuals and the intensity of these connections. A line between two points (individuals, ideas, concepts or organisations) shows the connectedness, and the thickness of the line shows the intensity and the direction of the connection. In the present case, the connections of the EU-candidates show the dominant communications in-between the candidates and the centrality of the main communicators. It answer questions like: Who communicates with whom, and who communicates the most?

*Picture 6: Abstract social network (provided by Gephi) — nodes (dots) are connected over edges (lines)*

According to Scott (2019), sociometric uses graph theory to measure the proximity of individuals by showing: “the number of likes that must be traversed to connect” two persons (Scott 2019:21). Either these measurements count the simple the number of contacts of persons or they count the emotional or subjective distance between persons. One feature of the sociometric methodology is that the social space in which individuals cluster or the individual position of persons in such social space can be
shown. This technic depends on a factor or cluster analysis of individuals. As Scott (2019) points out, famously Pierre Bourdieu (2010) used a cluster analysis for his stratification studies in his book *Distinction a social critique of judgment and taste* (Bourdieu 2010).

### 3.5. Structural Balance Theory and Sentiment Analysis

To create a thick account of my empirical material, I apply a mixed method approach. In addition to a Social Network Analysis (SNA), I conduct also a Sentiment Analysis. I use a Sentiment Analysis for investigating the independent variable (use of Twitter). Sentiment Analysis is based on the theory of mood and cognition and the cognitive balance of interactions (Heider 1958). As Parrott and Hertel state, the research on “emotions' effects on cognition uses mood or emotion as an independent variable” (Parrott 1999:62). In this theory, emotions are treated as categories or dimensions that affect other variables. In the opposite case—when emotions are treated as dependent variables—the authors Parrott and Hertel analyse emotions “as states whose quality or intensity can be influenced by other variables” (Parrott 1999: 62).

In the present study, I use emotion as an independent variable to analyse the belonging to a certain social strata. In my model, emotions are measured as positive, negative or neutral (indifferent) emotions or motivations. Sentiment Analysis derives from the field of analysing people's opinions and is often called opinion mining. As Bing Lui (2012) describes it, the features of opinion mining “mainly focus on opinions which express or imply positive or negative sentiments” (Lui 2012:1). Lui (2012) describes the field where opinion-mining tools are implemented as wide and for every possible domain. The application of sentiment analysis spans from “services, healthcare, and financial services to social events” (Lui 2012:3) and even the prediction of political elections (Tumasjan 2010, Chen et al. 2010) are in the domain of opinion mining.

**Sentiment Analysis and Social media**

One of the features of today’s social media is not only the instant communication but also the open display of our online relationships and its constant change. For researchers, the data on these relationships is easy to acquire and more accessible than traditional forms of social research. On this account it is no surprising that in recent years social media research based on digital interaction is booming and a variety of new methods and theories are put into practice. In particular, the methodology of sentiment analysis is of particular interest for this research, as through sentiment analysis the quality of online relationships can be deduced from the form of use of Twitter as a means of communication. From the analysis of the online relationships, one can draw conclusions on whether users are part of a certain group or are belonging to a particular social class.

The boom of sentiment analysis after the turn of the millennium can be traced back firstly to the increased use of social media like MySpace, Facebook and Twitter,
secondly to the increased processing power of big data where a vast array of connections, communications and information can be processed simultaneous at a minimum of time.

3.6. Cluster Analysis and Sinus-Milieu studies

As described above, a central element in Bourdieu’s analysis of stratification of populations is his adaption of a cluster analysis for his research. For finding similar structures in datasets either factor analysis or cluster analysis are helpful (Savage 2013, Borgsted 2016 and Barth et al. 2017). For social scientists, both methods are equally important for the purpose of segmenting individuals or finding patterns in social phenomena. Firstly, in general terms a factor analysis is used to measure the variability of correlated variables. Variability is a statistical method that measures the squared deviation of a random variable from its mean as a central point of its distribution. Factor analysis helps social researchers find a set of representative features in a reduced set of data without examining all the data at once. Factor analysis as a form of simplification is used in the fields of marketing, genomics and social science for segmentation and pattern recognition but also for data reduction. On the other hand, cluster analysis as a form of categorisation allows grouping of individuals or objects with similar characteristics like for instance around a social phenomenon. Therefore, social researchers can find representative cases in a reduced data set. A general explanation for cluster analysis is that therefore the clustering of persons or objects helps to find the belonging of persons or objects most likely to the same distribution. A modified technic of cluster analysis is used for the plotting of Sinus-Milieu graphs (Borgstedt 2016:113).

Picture 7: Sinus-Milieus for Austria 2016

Barth and Flaig (2017), the main authors of the more recent Sinus-Milieu studies, are describing their milieu-based segmentation approach for market research purposes.
in identifying homogenous groups “with higher internal communication and differentiation from other groups” (Barth 2017:3). The Sinus-Milieu studies are rooted in the work of Pierre Bourdieu as the author Bertram Barth explains in the introduction of the book “Praxis der Sinus-Milieus” (Barth 2017) where the social class is defined over its economic and cultural capital. For Barth and Flaig (2017) *Milieu-specific value orientations* of individuals are expressed through everyday practices and specific lifestyles (Barth 2017:4). These lifestyles demonstrate at the same time milieu affiliations and differentiation from other milieus. For Barth and Flaig, social milieus show a stable belonging of individuals to certain groups or milieus over constant values and conventions. On the other hand, lifestyles are bound to fashion and express short-term preferences. (Barth 2017:4). As Barth and Flaig claim that the Sinus-Milieus are based on a deductive reasoning where, firstly different lifestyles are investigated through exploratory research (Barth 2017:5) and out of this empirical generated narrative material in a second step generalised categories are built *a priori*. According to Barth and Flaig (2017), this leads to a hypothetical social milieu model where individuals are grouped through their values and lifestyles and basic attitudes towards life itself. In a third step, these results are examined quantitatively (cluster analysis) through a representative generalisation in a *deductive process* where the initial hypothetical model is changed in an iterative process (Barth 2017:5) until theory and empirical data matches. As Barth and Flaig point out, this is a deductive approach that is in stark contrast to the common German inductive-empirical approach where first through cluster analysis groups are built and *a posteriori* narratives for aggregated groups or clusters are formulated.

The Sinus-Milieu models are originally based on ten different aggregate lifestyle groups, which held actuality until 2016. These 10 different groups are distinguished through a vertical raster of belonging to the Lower-, Middle- or Higher class and on a vertical base in values of (A) *Traditionals (tradition)*, (B) *Mainstream (modernisation)* with materialistic approaches and (C) *Leading Edge or Modernists (reorientation)* which acknowledge multi-optional experiences and a modern life with paradoxes. The groups populating the model described by the authors Barth and Flaig (2017) members of the *Sinus Sociovision* (Sinus Institute) are first the *Established* which are self-confident and think in the terms of success and feasibility on top of the higher class and are distinguished from *Modern Elite-Performers* which belong to a young and unconventional elite. The *Post materialists* are hover between the Middle and Higher Class and have liberal and post materialistic values, intellectual interests.

On the traditional side of the model *Conservatives* can be found with their humanistic values and cultivated forms. *Traditionals* prefer security and orderliness with GDR-Nostalgia and believe in socialist visions of solidarity and justice. In the centre of the model the *Middle Class* (modern mainstream) is strongly status-oriented and aims for social establishment. Below the mainstream, the *Consumption-Oriented* feel socially discriminated and follow the consumption patterns of the Mainstream
with lower income. The *Creative Avantgarde* are highly individualistic and see themselves as lifestyle avant-garde. The pure *Hedonistic* cluster is a pleasure seeker, have a low social status and refuse to accept the expectations of a performance-orient Hedonistic. (Translated from Barth 2017).

Today, the Sociovision Institute also provides the Digital Sinus-Milieu, *DIVSI Internet-Milieus 2016 – Die digitalisierte Gesellschaft in Bewegung*, a study conducted for the DIVSI (Deutsches Institut für Vertrauen und Sicherheit im Internet) (Borgsted 2016), where the Sinus-Milieus of the Sociovision Institute are mapped in their use of Internet communication tools.

*Picture 8: DIVSI Internet Milieus and Digital User Groups (Sinus 2017, Borgsted 2016)*

### 3.7. Cultural and Social Capital

The question I try to answer in my study is rooted in Pierre Bourdieu's idea of *Distinction: A Social Critique of the Judgment of Taste* (Bourdieu 2010) where he proposed the idea of *cultural capital*. In Bourdieu’s later analysis form 1986 he connects the social and cultural capital of individuals to the belonging of certain social groups or classes. The social belonging to a specific group or social strata in my model is the dependent variable and indicates the outcome of the investigated model. In his analysis *The Forms of Capital*, Bourdieu (1986) elaborates on social capital, which he determines as “linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition”. This institutionalised relationship signifies social cohesion and demonstrates belonging to a certain group. In Bourdieu's words, social capital “provides each of its members with the backing of the collectivity-owned capital, a ‘credential’ which entitles them to credit” (Bourdieu 1986:1), and therefore signals the belonging to an exclusive club.
As he further analysis that social capital “depends on the size of the network of connections” (Bourdieu 1986:10). Belonging to a certain social class means that one “can effectively mobilise” the volume of this possessed capital in its economic, cultural and/or symbolic dimensions. Besides the obvious economic capital such as money, assets and property, the cultural capital comprehend all social status which is connected to education and upbringing and include features like intellect and style which promote social mobility. For Bourdieu (1986), cultural capital is “effectively transmitted within the family itself” (Bourdieu 1986:15) and is accumulated by spending time and useable time (like from a mother) “to ensure the transmission of this capital….into the labour market through prolonged schooling” (Bourdieu 1986:15).

Picture 9: Table, structured overview on Bourdieu’s concepts of social and cultural capital

<table>
<thead>
<tr>
<th>Social capital</th>
<th>Cultural capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>small network</td>
<td>institutional</td>
</tr>
<tr>
<td>big networks</td>
<td>embodied</td>
</tr>
<tr>
<td>exclusive clubs</td>
<td>school</td>
</tr>
<tr>
<td>church/ Twitter</td>
<td>skills, dialect</td>
</tr>
<tr>
<td></td>
<td>fashion, luxury</td>
</tr>
<tr>
<td></td>
<td>goods</td>
</tr>
</tbody>
</table>

Pierre Bourdieu defined the two concepts of cultural and social capital in his groundbreaking article from 1986, and only in his later work (Bourdieu 2010) elaborated on the formations of these two concepts, by explaining that people possess “cultural capital of familiarity and a social capital of ‘connections’” (Bourdieu 2010:362). The concept of cultural capital can thus be described as firstly, institutionalised like education, and secondly as embodied (like speaking dialect or possessing a skillset) and thirdly as objectified as wearing certain fashion or consuming certain luxury goods (Bourdieu 2010). On the one hand, one could say that the cultural capital is about what one inherits or acquires through one’s family, and on the other hand, social capital describes the collective value of the network one belongs to.

While cultural capital is convertible into economic capital over a long-term perspective through longer schooling and in the form of educational qualifications, symbolic capital on the other hand is “made up of social obligations (‘connections’)“ (Bourdieu 1986:3), or relationships and can be valorised in the form of titles, prestige or recognition. When symbolic capital is mostly inherited from family, then cultural capital “becomes determinant in the reproduction of the social structure” (Bourdieu 1986:16). For Bourdieu, the scarcity of cultural capital in class-based societies rests on the lower classes “lacking the economic and cultural resources to prolong the education of their children” (Bourdieu 2018: 6). In his words
this means that agents cannot aggregate cultural capital or education beyond the minimum necessary for the reproduction of their labour-power.

Savage et al. (2013) developed for the BBC an ambitious British Class Survey where the authors used the ideas of Bourdieu on differentiation of classes not only through their economic power but also thorough their cultural and social capital. Savage et al. (2013) criticise their predecessor in social strata research and former class models such as traditional class schemata deployed in Britain by the UK’s National Statistics Socio-Economic Classification (NS-SEC) system until the 1980 with only six classes by strictly differencing in professionals at top and unskilled workers at the bottom. After that very limited model Goldthorpe and Marshall (1992) formulated another very successful model in the 1990’ies. According to Savage et al. (2013) this model differentiated between employers and employees based on labour contracts like professionals and manager. Savage et al. (2013) criticises this model as to static, because this model is based on a “deductive class schema” and “do not appear to be closely linked to people’s class position” (Savage 2013:222). Another critique on Goldthorpe and Marshall, formulated by Savage et al.(2013) is the missing of social mobility in their model. Savage et al. (2013) point also to another severe criticism about the Goldthorpe approach: its sampling size is small and micro classes like the ‘elite’ could not be distinguished (Savage et al. 2013:222).

For these reasons, Savage et al. (2013) suggest a new and “multi-dimensional way of registering social class differentiation” (Savage et al. 2013:223) based on Pierre Bourdieu’s three capital differentiation (economic, cultural and social). As Savage et al. (2013:223) argue, “classes are not merely economic phenomena but are also profoundly concerned with forms of social reproduction and cultural distinction”. The authors also refer to the classic Weberian idea of “class formation” by allowing an “examination of how stocks of the three capitals might combine to generate distinctive class boundaries” (Savage et al. 2013:223) by applying Bourdieu’s model.

Social Media and Class

Yates and Lockley (2018) argue in an article about social media and social class that only a limited number of social media studies are based on a Bourdieu perspective with its three distinct forms of capital. For the economic dimension of Bourdieu's model Yates and Lockley (2018) analyse data from an NRS study about the Internet users in the NRS social classification and point to a “higher proportion of Twitter users in the higher NS-SEC classes, 1 and 2” (Yates and Lockley 2018:1295). Both authors underline to the problematic situation that these data are not “subjected to statistical testing of interaction effects” (Yates and Lockley 2018:1295) and that all social media platforms “are skewed toward content produced by younger, wealthier, and better-educated citizens (Yates and Lockley 2018:1295). To analyse the social capital dimension, Yates and Lockley (2018) propose to study the people's network of social ties. This social capital can be characterised in social bonds which are
according to Yates and Lockley (2018) “both a personal and a community commodity that is linked to civic engagement, political engagement, and the formation of the public sphere” (Yates 2018:1295). One of the distinct features in Bourdieu's model is that social capital can be translated into cultural capital or even valorised or exchanged in economic capital” (Yates 2018:1295) as e.g. community- and distinction-based social capital. As Yates and Lockely (2018) point out, Twitter has the highest bridging social capital (2nd Instagram, 3rd Facebook, 4th Snapchat) compared to Snapchat which has the highest bonding capital like kinship (2nd Facebook, 3rd Instagram and 4th Twitter). Yates and Lockely further theorise that different social platforms “are used to maintain different forms of social ties” (Yates and Lockley 2018:20196). For Yates and Lockely (2018), social capital can be measured in forms of personal contentment, greater trust, and participation in civic and political activities (Yates and Lockley 2018:1296). Bourdieu (1986) is defining cultural capital as knowledge acquired through socialisation that can be experienced through cultural consumption and leads to an institutional recognition of one's cultural capital. Furthermore, Yates and Lockely (2018) also analyse similar studies which are related to “linking cultural capital, habitus, and cultural forms to digital inequality” (Yates and Lockley 2018:1297). Yates and Lockely (2018) conclude from these studies that technology is a performative function and therefore the use of social media or other ICT's serves the cultural and economic interests of individuals.
4. Research Design, Methodology and Empirical Material

Following the ideas developed within the school of thought of Critical Realism (CR), I use a mixed methods approach to conduct my research. This section of the study tries to accomplish three parts. At the beginning, this part shows an adopted and unified model of the different approaches in CR. The second part of this adopted model contains three phases (Collection Phase, Analysis Phase and Abductive Phase) and two dimensions of methodological approaches and methods. The different methodological approaches (Data Retentions, Mixed Methods and Meta Theory) are supported by distinct methods to create explanatory models for investigation. To this end, as a third part of this research design I try to use Social Network Analysis (SNA), Sentiment Analysis and the Sinus-Milieu Studies to answer the research question and the inferred hypothesis.

Picture 10: adopted model of applied CR and mixed methods to analyse Twitter users

CR also incorporates the idea of reflexive sociology (Wacquant 1989), which consider that all scientists and in particular social scientist are inherently laden with biases. That means that the idea of reflexivity (in Picture above: reflexive relations) take into consideration the interrelationship of the researcher with the data and with theory. CR proponents argue that theorists should become more aware about this reflexivity, and more aware of those biases in order to become more objective scientists. According to Archer et al. (2016), reflexivity can be reached by combining different methodologies and by mixing quantitative and qualitative approaches, “to reconstruct the complex, contingent, and conjunctural nature of causality” (Archer e.al. 2016:5).
In order to achieve a measure of reflexivity and causality, I apply the model developed by Danermark et al. et al. (2005) of intensive and extensive procedures. By intensive empirical procedure, Danermark et al. et al. (2005) refer to qualitative data collection and interpretation. These intensive procedures should be accompanied by an extensive procedure of quantitative data collection and statistical interpretation (Danermark et al. 2005). Danermark et al. (2005) see this methodology of complementary empirical procedures as “set in the particular meta-theoretical context” (Danermark et al. 2005:163) of Critical Realism.

My study is divided in three phases. The first phase consists of data retention. In the second phase of my study, I use extensive procedures, and conduct an extensive data analysis and a search for exploratory models. To find exploratory models, the data is deductively analysed by quantitative data methods (i. Social Network Analysis) and (ii. Sentiment Analysis). In addition, I apply intensive procedures that are accompanied by inductive and qualitative methods (iii. Sinus-Milieu) to gain more insights into the collected data. In a final and third stage, my findings are matched with the Sinus-Milieu model and Bourdieu's theory of cultural and social capital in order to reach a meta-theoretical level of the investigation. In an abductive manner, I seek to find the most likely explanation for the investigated phenomenon.

*Picture 11: deduction, induction and abduction according Sober (2005)*

<table>
<thead>
<tr>
<th>Methods applied</th>
<th>Deduction quantitative Methods</th>
<th>Induction qualitative Methods</th>
<th>Abduction (Sober 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasoning</td>
<td>Deductive reasoning (&quot;top-down logic&quot;)</td>
<td>inductive reasoning (&quot;bottom-up logic&quot;)</td>
<td>Abductive reasoning</td>
</tr>
<tr>
<td>Sentiment Analysis</td>
<td>Looking for neutral, positive or negative sentiments</td>
<td>associated to classes</td>
<td>seeks to find the simplest and most likely explanation for an observation.</td>
</tr>
<tr>
<td>Social Network Analysis</td>
<td>Clustering the different groups</td>
<td>associated to classes</td>
<td>With inference to the best explanation provides plausible conclusions without verification like “best available explanation”</td>
</tr>
<tr>
<td>Sinus-Milieu</td>
<td>The data gathering by Sinus is done quantitative Socio-economic Factors /Bourdieu’s Model</td>
<td>The visualisation is done qualitatively</td>
<td></td>
</tr>
</tbody>
</table>

**4.1. Extensive Procedure with Deductive Methods**

According to the model developed by Danermark et al. (2005), the extensive procedure investigates regularities, common patterns and looks for distinguishing features of a population. This face of the research is a large-scale survey of a particular population which is supported by a statistical analysis. It tries to answer questions like “How widely are certain characteristics or processes distributed or represented?” (Danermark et al. 2005:165). As Creswell (2018) suggests, the
extensive procedure should “identify a theory that explains the relationship between independent and dependent variables” (Creswell 2018:109).

Generally speaking, according to Danermark et al. (2018), extensive procedure are investigations about *How common a phenomenon is?*, and this step tries to describe empirically the characteristics of an investigated population. In my study, I try to determine if the form of use of Twitter is an independent variable that influences the dependent variable (belonging to a certain social strata), that is, if there is a causal effect between these two variables.

**Sampling and Data Collection Process for Deductive Methods**

I chose to study Twitter as a sociological phenomenon around the Austrian EU-election campaigns in 2019. In this research, I am interested in studying the structures of Twitter conversations according to phenomenological sociology as described by sociologist Alfred Schütz. My study is an attempt to apply computorial sociology, and new ways to gather data in the confined communication space of the Twitter sphere. Due to saturation purposes and consistency of data, I have decided to study the use of Twitter in a limited time and confined space, that is during the Austrian election campaign towards the election to the European Parliament in 2019. I have limited my study to the 14 main candidates from Austria. The data collection covered the time form the first nominations in the middle of January (11 of January 2019) until the beginning of the intensive election campaign middle of April (11 of April 2019). Since I am only interested in studying what the forms of use of Twitter can tell about the social belonging of the candidates, I ended the data gathering before the intensive phase of the election campaign. The studied population consists of the top 14 candidates, who are using Twitter as a means of communication, for the European Parliament from each of the six parties which are represented in the Austrian national parliament.

The selection of the candidates was made in the following way: I included all the candidates from the first place (main candidate) on the list until the eighth place. All places below the 8th place are unlikely to get elected and where not included. Also, not all candidates are using Twitter as a communication tool, and some of the smaller parties did not have eight candidates listed. Today, the Austrian party with the highest number of MEP is the Social Democratic Party with 5 MEP:s. The sampling is limited to the top candidates because only candidates that are likely to get elected are constantly campaigning and communicating. This results in a sample of the 14 most active candidates that matches with the parties and their main electable candidates.

The election campaign for the 20 Austrian seats in the European Parliament is confined in time and space and also the gathered data is saturated for the purpose of this study. Because of its structure and application, Twitter provides a unique opportunity for researchers to study specific social phenomena. Since Twitter is a binary communication tool it enables researcher and also a broader public to
download all communications and analyse the content and links. Twitter itself provides an application programming interface (API) to gather all the selected single tweets in a defined time frame. Through this procedure, researchers are able to analyse not only what the candidates communicate but also with whom they are exchanging information.

**Picture 12: All main candidates of the Austrian EU elections 2019 with their communicative profiles**

<table>
<thead>
<tr>
<th>OVP</th>
<th>Twitter</th>
<th>Facebook</th>
<th>Instagram</th>
<th>Others</th>
<th>Twitter Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Othmar Kato</td>
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<td>2</td>
<td>-</td>
<td>XING</td>
<td>@kato_othmar</td>
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<td>Kamila Eduarder</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>XING</td>
<td>@eduarder_kamila</td>
</tr>
<tr>
<td>Angelika Warnig</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>FB1</td>
<td>@warnig_angelika</td>
</tr>
<tr>
<td>Simone Schützleither</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
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<td>2</td>
<td>3</td>
<td>FB2</td>
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<td>Walther Partos</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Christian Negati</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Barbara Thaller</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>Christian Zoll</td>
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<td>3</td>
<td>3</td>
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<td>2</td>
<td>3</td>
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<td>@vilmovky_harald</td>
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<td>Georg Mayer</td>
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<td>2</td>
<td>3</td>
<td>FB2 Li</td>
<td>@mayer_georg</td>
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<tr>
<td>Peter Mark</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>LinkedIn</td>
<td>@mark_peter</td>
</tr>
<tr>
<td>Roman Hasler</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>XING</td>
<td>@hasler_roman</td>
</tr>
</tbody>
</table>
| Vonne Schuster | 1 | 3 | XING | - | x@

<table>
<thead>
<tr>
<th>SPÖ</th>
<th>Twitter</th>
<th>Facebook</th>
<th>Instagram</th>
<th>Others</th>
<th>Twitter Handle</th>
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<td>Andreas Schieder</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td>@schieder_andreas</td>
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<tr>
<td>Editha Wagner</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td>@wagnereditha</td>
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<td>Günter Stile</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Bernd Wehrl</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Hannes Heideck</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Julia Herr</td>
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<table>
<thead>
<tr>
<th>Twitter Sum</th>
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</thead>
<tbody>
<tr>
<td>OVP</td>
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<td>PPO</td>
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<td>SPÖ</td>
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</table>

For this investigation I use Twitter not only as a content base to analyse the sentiment (positive, negative or neutral) of the tweets candidates formulate, but I also use these data points to analyse the communication networks of the individual candidates in a Social Network Analysis (SNA). Since every tweet has a sender From: NAME and often an intended recipient that is indicated by @NAME, a relation can be established between sender and receiver. These relations are visualised in a network and are connected over nodes (participants) and edges (connections).

**Picture 13: Example Tweet of candidate Andreas Schieder**

![Example Tweet of candidate Andreas Schieder](image)

As a result of this data collection over Twitter, I have gathered a total of 37,282 single data points from the 14 EU Parliament candidates who are communicating over

2 The anatomy of a tweet as in this example, consists of a sender (@SCHIEDER) in the header of the tweet. The body of the text is the information or communication with links to a) keywords or #Hash-tags and direct mentions @NAME. The bottom of a tweet contains information of conversations (speech bubble) or retweets (circle of arrows) and likes (harts).
Twitter. Excerpts from the data can be found in the appendix of this study. The empirical data for this study is based on the communications between the 14 candidates. The candidates obviously also use other means of communication, such as Facebook, Instagram or YouTube. This study concentrates its efforts on investigating the communication structures on Twitter, since this communication is unfiltered and direct. This way of communication is in sharp contrast with communications over Facebook or YouTube, which is more often made by the team of the candidates, and not by the candidates themselves.

**Analysing Methods for Deductive Methods**

My extensive procedures consist of two steps. Firstly, I conduct a Social Network Analysis (SNA) of my collected data. In this Social Network Analysis, the *nodes* and *edges* of a conversation are analysed (graph theory explained in part 3.3 of this study). *Nodes* are the sender and receiver of Information and the *Edges* are the connections and the exchange of information between the nodes. The thickness of the edges is indicating the strength of the connections or the intensity and respectively the number of the interactions.

I follow the outline provided by the social network analyst Luca Hammer (2017), where he describe specific steps to create successfully a visualisation of a SNA. With the help of the Gephi software version number 0.9.1, I conduct an analysis of the candidates’ Twitter network. In this outline firstly, I have to apply a *modularity filter* to calculate the sub-communities for my investigated population. To create an acceptable visual representation of the SNA, I use the *ForceAtlas2 layout* algorithm and use different colours to differentiate the underlying clusters. The *ForceAtlas2* layout and creates the image of all the *nodes and edges* in the network. *ForceAtlas2* is a layout provided by Gephi software and is made to spatialise small-world phenomena. As explained in a presentation by the programmers themselves, the *ForceAtlas2* layout “is focused on quality (meaning “being useful to explore real data”) to allow a rigorous interpretation of the graph (e.g. in SNA) with the fewest biases possible, and a good readability” (Gephi 2011). The *ForceAtlas2* layout was developed by Mathieu Jacomy and is built on top of the *ForceAtlas* layout already programmed in 2007.

The result of the second extensive procedure (Sentiment Analysis) is a list of sentiments and a visualised communication network that shows the intensity of the information exchange for the population being studied. In a second step, I conduct a sentiment analysis of the collected data. This sentiment analysis is based on the structural balance theory formulated by Fritz Heider in 1958. Heider formulated this structural balance theory in his book *Psychology of Interpersonal Relations* (Heider 1958). The main idea is that people try to reach a *cognitive balance* in their sentiments and a consistency in their relationships (Heider 1958). This sentiment analysis is today better known as opinion mining. I conduct my sentiment analysis with the
software of *Opinion Tracker* where tweets and personal relations over the Twitter sphere are collected over a certain period of time. In an applied form of statistical and automated discourse analysis, the collected tweets are matched with a defined catalogue of words. In this lexicon, words are classified as being *neutral, positive or negative*. The result is a codified list of words with neutral, positive or negative sentiments.

In the context of analysing social media, one uses sentiment analysis, which helps to analyse displayed reality by liking or disliking others content. This *likes* or *dislikes* trains the social media algorithms to present it user again different content, which they probably *like more*. By giving feedback again this deep mediated loop never ends.

Lui (2012) argues that in this deep mediated process “individuals and organisations are increasingly using the content in these media for decision making.” (Lui 2012: 2). In a very compressed summary one could say that this discussion process is guided through a *text analysis* and *natural language processing* (NLP) to create a *sentiment classification* system, where “Given a sentence x, determine whether x expresses a positive, negative, or neutral (or no) opinion.” (Lui 2012:37). This determinations can be compared with *sentiment lexicons* where “Positive sentiment words are used to express some desired states or qualities while negative sentiment words are used to express some undesired states or qualities.” (Lui 2012:79).

### 4.2. Intensive Procedure and Inductive Methods

The second stage of my investigation consists of intensive procedures and qualitative data gathering. This second stage is what Danermark et al. (2018) describe as the “study of individual agents in their contexts” (Danermark et al. 2018:165). The goal is according to Danermark et al. (2018) to *focus on the generative mechanisms* of certain sociological phenomena or events. The intensive procedures try to answer questions about *how mechanism works in concrete situations and* ask about the power relations and the interactions of powers.

#### Data Collection Process for Inductive Methods

Based on the extensive procedure of data collection and analysis, the intensive procedure looks for patterns and regularities which can be investigated with qualitative methods. Using a comparative method, the characteristics of the investigated population can be matched with the digital Sinus-Milieu studies. The Sinus-Milieu studies are based on socio-psychological lifestyle studies of the Sociovision Institute. Barth et al. (2017) describe the methodology of Sociovision and of their Sinus-Milieu model as a deductive approach where the results of a lifestyle investigation are matched against a *milieu indicator*. The final *milieu mapping* is examined through a quantitatively investigation with a cluster analysis as a representative generalisation. The Sinus-Milieu studies originated in the 1980ties and have been used for political strategy building and marketing communication since then.
Analysing Methods for Inductive Methods

In my study, I try to analyse the communications and interactions between the Austrian candidates to the European Parliament in the light of the idea of social classes formulated by Pierre Bourdieu (1986). Bourdieu famously extended the idea of economic power and capital with the idea of cultural and social capital to explain certain social strata and the reproducibility of social layering. I use the digital Sinus-Milieu studies, that are based on Bourdieu's capital model, to see if they are suitable for the determination of demi-regularities in my collected material, like the definition of social classes (Danermark et al. 2018:166).

For the present study, I use a comparative method to match the findings of my own investigations on Twitter-communication with the digital Sinus-Milieu studies conducted for the DIVSI Institute about digital social stratification. The digital Sinus-Milieu studies are conducted for Germany. To match the German results with the Austrian data sample, I use the Austrian version of the Sinus-Milieu studies and apply the digital Sinus-Milieu version to the Austrian Twitter sphere.

Barth et al. (2017) describes the methodology of Sociovision as a deductive approach where, firstly different lifestyles are investigated through exploratory research (Barth 2017:5) and out of this empirically generated narrative material, in a second step generalised categories are build a priori. According to Barth and Flaig (2017), this leads to a hypothetical social milieu model where individuals are grouped through their values and lifestyles and basic attitudes towards life itself. In a third step, these results are examined quantitatively (cluster analysis) through a representative generalisation in a deductive process where the initial hypothetical model is changed in an iterative process (Barth 2017)

4.3. Data Retention and Sampling

Studying the baroque and romantic complexity of Twitter conversations has many features. Firstly, as the social media researcher Simon Lindgren (2017) argues, in social media research “the boundary between data and subject becomes less clear” (Lindgren 2017: 237). Secondly, all the data is digitally available and publicly observable. Thirdly, through an application programming interface (API), all the conversations are easily accessible and fourthly, therefore without much effort processable by machines and prepared for analysis. Similar efforts can be conducted for Facebook, but since communication via Twitter is more direct and unfiltered, I chose only to use Twitter conversations for this study. This study is an attempt to apply computorial sociology for media studies and show a new way of gathering information on specific communications and new tools of interpretation.

I have focused this study on a sample consisting of the 14 main candidates from Austria who are using Twitter or show a Twitter address in their social media profiles. All the candidates who were announced at the end of January 2019 are listed in the above (picture 11). Most of the candidates use diverse social media channels to
communicate with their constituency but not of all use social media with the same intensity and to the same extent.

The data retention covered a time period from January (11 of January 2019) until April (11 of April 2019). Before that time period, only few candidates where already nominated. I stopped the data retention in the middle of April due to saturation and to have high consistency before the campaign gets wild in the intensive end of the campaign. Since I am interested only in studying the forms of Twitter conversation and not the actual content of single tweets, I ended the data retention early with the beginning of the intensive campaign. The interest in understanding the interconnections between Twitter users does only need the frequency of the interactions but not necessarily the quality or content of the interactions. The goal of the sampling was to study the forms of use of Twitter to tell more about the social belonging of the candidates to certain social clusters. The studied population is a full sample of all the top candidates who are using Twitter for the election campaign towards the European Parliament from each of the six parties which are represented today in the Austrian Parliament. The candidates out of this group have the highest chance to win one of the 19 seats (after GB left EU) of the Austrian EU Parliamentarians.

4.4. The Empirical Material

This section is a short description of the Austrian candidates reflecting Bourdieu's social- and cultural capital characterisations. The main source for the individual background and social characterisations was gathered from the web platform Meine Abgeordneten (2019), a non-profit transparency data base. In a self-description, the platform characterises its goal as “creating transparency about the CVs and the personal and business functions and interests as well as the public statements of the politicians included in it”. (Meine Abgeordneten 2019).

4.4.1 ÖVP

In 2014, at the last European parliamentary election, the Österreichische Volkspartei (ÖVP), gained the highest percentage of the votes with the total of 27 per cent and 5 seats. The ÖVP can be characterised as a Christian conservative and right wing party. In this year’s election campaign, its main candidate was Dr. Othmar Karas, MBL-HSG. He has a higher education degree. He is member of a Catholic fraternity and active in the chamber of Commerce and the Federation of Austrian Industries and has been active in politics since his teenage years. The second candidate on the ÖVP list is an acting secretary of state: Karoline Edtstadler. She is a graduated lawyer. She is vice president of the Austrian sports club “Sportunion” and member of the conservative political list for the Austrian interest-group for employees. The third on the list is Angelika Winzig, who has a professional business background and is active in the chamber of commerce. She is deputy president of the conservative political group in the chamber of commerce. The next on the ÖVP list
with Twitter activities is Lukas Mandl. He is active in a catholic fraternity. He is also active in the conservative political list for the Austrian interest group for employees and lector in sociology at the University Vienna. He has been active in politics since his teenage years. Christian Zoll is the youngest of the conservative candidates. He has a university degree. Already in his early teenage years, he was actively involved in the conservative political school student’s organization. Since Christian Zoll is not a member of parliament his data could not be collected over MeineAbgeorneten.at. Instead, I have collected data on him from his own homepage. (Zoll 2019).

4.4.2 SPÖ
The *Social democratic Party of Austria* (SPÖ) gained in the last EU election 24,1 percent of all votes and 5 seats in the EU Parliament. Andreas Schieder is the main candidate of the Social Democratic Party. He has a university degree. He was already politically active in his teenage years and is today he has political responsibilities on the local level as well as on the national level (e.g., in an environmental and recreational organisation, the *Naturfreunde*). The second candidate is Evelyn Regner. She is based in the trade union movement and has been politically active since her time at university. Julia Herr is the youngest of the social democratic candidates, she is active in the socialist youth organization and is still studying (Herr 2019).

4.4.3 FPÖ
The *Freiheitlichen Partei Österreichs* (FPÖ) is an extreme right wing party. In 2014, FPÖ gained 4 seats with 19,7 per cent of the votes. The main candidate is Harald Vilimsky. He has not finished his higher education. Early in his studies, he switched to the parliamentary club of the FPÖ. The second on the list is Georg Mayer. Mayer is member of an ultra-conservative fraternity and still active share holder in a company. The fifth on the list of the FPÖ is Vesna Schuster who is today member of a regional parliament. She finished her school education (Matura) and went to a technical college for social care taking and is self-employed. (Landtag Noe 2019).

4.4.4. Grüne
The main and only active Twitter candidate of the Austrian Green party (*Die Grünen*) is Werner Kogler. The green party won 14,5 percent of the votes in 2014 and has 3 seats in the European parliament. Kogler is the longest serving member of the European parliament of all investigated candidates. Since 2013, Kogler has also been a member of the Austrian parliament and the spokesperson of the Austrian Green Party. He was one of the founding members of the green movement in Austria.

4.4.5 Neos
The *Neos* is the youngest party in the Austrian Parliament and gained 8,1 percent of the votes in the European elections in 2014. The Neos is a modern liberal-conservative party with one seat in the European Parliament. The only candidate that is using Twitter this Claudia Gamon, who is one of the younger candidates in this
investigation and since 2015 member of the Austrian Parliament. She started her political engagement at university level and was candidate for the liberal movement to the Student Parliament.

4.4.6 Initiative 1 Europa
The latest nominated candidate is Johannes Voggenhuber, a pensioner and with his group Initiative 1Europa a split of the die Grünen Austria. Johannes Voggenhuber is also a founding member of die Grünen Austria and was member of the Austrian and EU Parliament before. Voggenhuber has only finished mandatory school and has no higher education.

4.5 Ethical Considerations
The social space of Twitter consists of over 340 million active users per month, with 500 million tweets posted per day. (Shaban 2019). Twitter describes itself a platform that applies all General Data Protection Rights for its users\(^3\). For this study, I am using only publicly available data. I use public records of the candidates (Austrian Parliament Website). Also, the candidates are public figures, all of their conversations and interactions that are made public on Twitter cannot be considered personal data. I have not been able to identify any ethical obstacles to conducting this study, nor any risk that it would not comply with European GDPR regulations. Regarding my own positionability, I want to make clear that I have experience of consulting in election campaigns and do know some of the candidates personally. Therefore, I have deeper insights in the personal environment and lifestyles of some of the candidates, which helped in the interpretation of the collected data.

\(^3\) see https://gdpr.twitter.com/en/faq.html
5. Findings and Analysis

For this research, I decided to try to apply the epistemological and ontological approach of Critical Realism (CR) to study the complex interactions on Twitter of the Austrian candidates to the European Parliament in the European election campaign of 2019. For this reason, this chapter is structured in a particular way. Since CR unifies two varying schools of thoughts, I complete the extensive and intensive procedures separately from one another. This leads to a double effort and seeming doubled content and using the same data in two different ways. I would like to stress, though, that this double procedure is purposeful, and chosen to create a thicker account of the gathered data. Another reason for recapitulation of the methods in this section is due to the fact that the developed model I use is part of the findings. I developed this model based on Critical Realism for further use and application in future social media studies to investigate the "baroque complexity" of social media interactions.

The main purpose of this study was to show the application of CR in the field of social media studies. CR claims that it creates a thicker account of data for interpretation and therefore a deeper understanding of existing social phenomena can be gained. The final reductive phase is characterised by abductive reasoning and is focused on finding an ex-post explanation by formulating mechanisms and characteristics or matching meta-theoretical approaches.

In this findings chapter of my study, I also focus on the analysis of empirical data that was gathered over Twitter with focus on the main candidates in the Austrian EU-election campaign, through extensive and intensive procedures. One outcome of my study is also a new methodological approach, a new combination of different Social media analysis tools. Therefore, I have included my analysis of the methodology used as a part of the findings. Furthermore, I use two different the qualitative and quantitative schools of analytical language and methodological this leads sometimes to a doubling of analytics and interpretations of findings.

5.1. Applying Critical Realism (CR) and Small World Problems

In this modern sociological dilemma of ontological and epistemological dichotomies, CR opens a third way and tries to combine the natural and the social in theory and methodology. As Archer et al. (2016) analyse, CR stands between the strong positivists and the strong postmodernists, where on the one hand CR researchers look for law-like regularities, which are based on statistical regression models with cause and effects, and on the other hand acknowledges hermeneutics and reflexivity to investigate empirical and observable events. The economic researchers Minger and Willcocks (2004) propose an elaborated model for CR where the domains of the real, the actual and the empirical are unified. (Minger and Willcocks 2004).
These tree domains of the CR ontology are described by Minger and Willcocks (2004) as firstly, the real with its permanent mechanisms and structures. Secondly, as the actual domain where one can find events (or non-events) that are generated by the underlying mechanism, and finally the empirical domain with events that are actually observable and experienced by individuals (Minger and Willcocks 2004:384). This model combines both the search for natural and law-like mechanisms and the social that depends on our observations and interpretations. One could say that CR acknowledges the reflexivity but also the emergent relations between the domains of the actual and the empirical of small world events.

The intent of this study is to research the emergent micro-social behaviour of Twitter users and to analyse social media as an indicator of social stratification. By following my research question and analysing these micro-social behaviour and according to my hypothesis, one could analyse the socio-economic relationships and social stratifications for specific user groups. By rephrasing the hypothesis, the focus of the study might become even clearer: Show me your social interactions on Twitter and I tell you who you are! — Or which social class you belong to. This clearly demonstrates the reflexivity of a given social emerging behaviour (Twitter interactions) in an empirical studied event. In my case, the social phenomenon is the EU election campaign of 2019 that the emergent behaviour of the Twitter users reflects the actual belonging to a certain social class. The sociologist Bruno Latour (2016) defines this process of belonging and building interest of many, when micro-actors become macro-actors as emergent behaviour of power. Our investigated candidates obviously belong to the same group of micro-actors or sub-clusters and are showing micro-social behaviour.

5.2. CR and Applied Analytical Methods

Twitter is arguably the perfect application to study small world problems which reference to a bigger framework of social phenomena and socio-economic mechanisms. As the sociologist Buch-Hansen (2013) argues, while it seems that Social Network Analysis (SNA) is bound to the domain of the quantitative research, it provides also some interpretative features of analysing clusters. But since SNA tries to look behind the obvious counting of connections and intensities, this technic seems “detached from the positivist social science” (Buch-Hansen 2013:306). For Buch-Hansen SNA provides firstly a foundation of methods to analyse social relations and secondly, it has a superstructure that addresses the “social-theoretical nature and implications of social networks (Buch-Hansen 2013:307). In other words, the features of SNA provide for CR, on the one hand a generalisation of social mechanisms like the positivist school demands and a thick explanation in the sense of constructivist interpretation. One of the results that SNA produces are Sociograms, where individual connections between the actors get visible. As Buch-Hansen (2013) claims, SNA itself cannot alone explain causal relationships but “based on the tenets of Critical Realism”
it can be a “supplement to other methods” (Buch-Hansen 2013:320). Therefore, SNA can be used to generate overviews of complex social relations.

The same argument can be made for Sentiment Analysis. On the one hand, Sentiment Analysis can be seen as a pure positivist analytical tool to count and quantify the personal interactions between actors, and on the other hand, sentiment analysis is a tool for a machine aided discourse analysis, by characterising parts of conversations as positive, negative or neutral sentiments. Sentiment analysis thus provides weak tool for a positivist approach in searching for mechanisms, but it is a good tools and aid for interpretations.

By combining these two analytical tools for empirical studies, SNA and Sentiment Analysis, both sociological domains can be satisfied, the constructivists theorists with a thick analysis of sentiment and the positivists with an analysis of social relations conducted with SNA.

Looking at the causality of Twitter conversations related to social stratification, the Sinus-Milieu studies provide a rich toolset. On the one hand the model of the Sinus-Milieu is rooted in Bourdieu's ideas on social and cultural capital (Barth 2017) and in the other, it provides an interpretative approach to analyse personal lifestyles. In their book *Praxis der Sinus-Milieus*, the researchers Barth and Flaig (2017) as the main authors of the Sinus-Milieu studies present their milieu-based segmentation approach to identify homogenous groups “with higher internal communication and differentiation, from other groups” (Barth 2017:3). The Sinus-Milieu studies are based on two different approaches. The first approach, as Barth and Flaig (2017) explain, is that social milieux show a stable belonging of individuals to a certain social group or segment. The second approach is that these segments are defined as lifestyle milieus and are bound to fashion the expression of short-term preferences (Barth 2017). Barth and Flaig describes the process of Sinus-Milieu studies as being firstly, *a priori* based on exploratory research (Barth 2017:5) out of empirical data, and in a second step, categories are created, and hypothetical Social-Milieus are generalised. Based on this inductive procedure, generalised narratives are distilled, and milieu based categories are built (Barth 2017:5). In a third step, these results are analysed *a posteriori* through cluster analysis and matched with the previously built Lifestyle-Milieu model. Using both qualitative and quantitative methods, the Sinus-Milieu studies would qualify as belonging to the domain of mixed methods. At the end of the 1980ies, the Sinus-Milieu approach with its mixed method methodologies was definitely advanced in the domain of epistemological reasoning, but under the light of CR, today the Sinus-Milieu model lacks ontological reasoning and a deeper analysis of underlying social mechanisms. The present study tries to close this gap by applying both the new forms of Social Network Analysis and Sentiment Analysis, and combining the digital Sinus-Milieu studies of today with a deeper understanding and ontological approach of Bourdieu's cultural and social capital theory under the light of CR.
5.3. Extensive and Intensive Procedures

5.3.1. Extensive Procedure

The first part of this analysis is built on an extensive procedure, which consists of deductive reasoning and looks at the collected empirical data. The main focus of the analysis is on the Twitter conversations and the communicative network of the 14 selected Austrian candidates to the European Parliament in the 2019 European elections. This extensive procedure consists of three parts. Firstly, the main candidates and their support network are identified. Secondly, out of this map (see mind map below) a shortlist of the most used keywords or #hashtags are distilled to start the process of data gathering and collecting the data for the social network analysis. In a third step, the gathered data is processed using a Social Network Analysis (SNA) tool. I use the Gephi software, which is tailored to visualise complex networks. The complete list of keywords can be seen in the Appendix (Mind map).

In the first step of the analysis, there is the need to identify the supporter network and the connections of the Twitter conversations. All the findings are displayed in a mind map see in Appendix: Picture A1.

This mind mapping procedure is accompanied by a selection and listing of the main #Hashtags candidates used at the start of their campaigns. These #Hashtags are considered likely to be the main campaign slogans which the candidates will use for the rest of their campaigns. The reason for this is that the selection keywords for a campaign is normally a careful procedure where a whole campaign team is involved, and a particular concept or wording is selected strategically. I, from my personal experience of political campaigning, can confirm that the choice of keywords is central to election campaigns.

The second step of the data selection was to distil the most likely and most meaningful keywords to start the Social Network Analysis (SNA). For this, I also interviewed the social researcher Petra Permesser (Interview Permesser 2019). Permesser works for the Austrian social media consultancy firm Datenwerk, which is specialised in sentiment analysis and political consulting. She investigates, for commercial purposes, the Austrian European election campaigns. In order to collect data from the Twitter sphere I used the software platform Opinion tracker provided by Datenwerk (Datenwerk 2019).

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4 The author himself participated in and worked as a consultant in several election campaigns in Austria (from 1995 until 2000)
This list of distinct words, together with the selection of the 14 candidates build the focus for the search of connections and conversations on the Twitter sphere. Based on the research design described in chapter 4, the search in the time span from the 11th of January 2019 until the 11th of April 2019 resulted in 37,282 data points and 7,941 connected persons.

i) Social Network Analysis (SNA)

In a third step of the extensive procedure, I used the collected data to create a special map of all the connections and interactions found in the investigated data set. To visualise these connections of individuals who are using Twitter as a communication tool, a Social Network Analysis (SNA) is an efficient method. A SNA provides a visualisation of interaction between nodes, like users or organisations, and the connections between them as edges. The social researcher Jon Scott describes SNA as “concerned with the patterns formed by the points and lines and involves exploring these patterns, mathematically or visually” (Scott 2019:1). Not only the connections but also the intensities of these interactions are visualised by SNA, or according as Jon Scott (2019) describes it as drawing systematically inter-connection of individuals. These methods are also known as sociogram or as sociometric drawings. The idea of drawing a sociogram is using graph theory to visualise the proximity of individuals or by showing “the number of links that must be traversed to connect” (Scott 2019:21) two individual.

For drawing a sociogram of the collected data, first I cleaned the data and used only the references @NAME in all the tweets to create nodes and edges for the conducted SNA. For cleaning and structuring of the data, I used Luca Hammer’s (2019) script, based on the programming language python. This cleaned data, I used to create a visualisation of the Social Network for all candidates and keywords selected in the first part of creating a SNA. To create the image (picture 16) of the full network based on nearly 8,000 individuals and 40,000 data points, I followed the

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5 Python is a higher programming language which is organised in modules with a clear and optimised syntax and help researchers to organise easily their data sets.
instructions by the social researcher Luca Hammer (2019). In his step-by-step guide for a meaningful analysis of social networks, Hammer (2019) provides special insights into the Gephi Software for social media researchers. His method starts with an effort to structure all data through a modularity filter. This filter is a particular applied cluster analysis. Used on the data that was collected for this study, the filter resulted in the report enclosed in the Appendix.

*Picture 15: Full sociogram of the studied Austrian EU Candidates and network, visualised by SNA*

The outcome of this step of the SNA provides a beautiful image, but also confusing complexity. Therefore, I create a more focused selection with fewer nodes and edges. This enables a smaller selection and more concentrated view on the selected data. To create a subset of the selected data I changed the range of both filters and this eliminates the number of edges with a weight outside a specific range. With this procedure, I narrowed the degree range to numbers above 125, and the range for the modularity filter to numbers above 4.

This means, all connection with fewer than 125 respectively 4 connections are filtered out. To create new clusters for this subset of the SNA, I run the modularity filter again. This creates a moderate and an easy to comprehend visual representation of the selected group.

The main finding of this process is that the communication structure is divided into four different clusters. These clusters show a relatively high internal communication structure and can be clearly demarcated. The clusters are divided in a light green, a pink, a light blue and a dark green cluster, the colours are automatically assigned by

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6 Gephi is an open source software to visualise social network and cluster analysis, developed by students of the University of Technology of Compiègne (UTC) in France

7 Please note that the colour code does not correspond to the different political camps.
the software. Within these four clusters, I identified three distinct clusters (red circles of Sub-clusters) of candidates who are communicating with each other more often and addressing more tweet to each other. The pink cluster shows a higher inter communication activities with thicker and stronger edges (connections) between the candidates @dieGamon, @SCHIEDER, @Vilimsky and @JVoggenhuber\(^8\).

*Picture 16: SNA with Sub-clusters A, B, C*

ii) Sentiment Analysis

As part of the extensive procedure, the sentiment analysis can also be considered a qualitative and deductive methodology to analyse huge amounts of communications data. Sentiment Analysis is based on structural balance theory and the idea of establishing a cognitive balance between actors, firstly formulated by Fritz Heider (1958). In his book The Psychology of Interpersonal Relations, he formulated the idea of cognitive consistency where sentiments or relationships indicate a “change toward balance within existing unbalanced sentiment” (Heider 1958:208). According to Wang et al. (2018), by including graph theory this means that “a directed link between two nodes (i.e., users) is assigned a positive or a negative sign” (Wang et al. 2018:14).

According to Wang et al. (2018), the attitudes towards other users in the network can be shown as positive edges symbolising trust, support or endorsement, and showing distrust, opposition or dispute for negative edges. Wang et al. (2018) describe the process of sentiment analysis as highly dependent on machine-learning algorithms in order to estimate the positive, negative or neutral sentiments but also to

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\(^8\) Through this selection and reducing of the dataset some of the candidates are hidden because of too few interactions with other candidates.
“ensure high prediction accuracy for links of low embeddedness” (Wang et al. 2015:2). In their article, Karlgren et al. (2012) argue that Sentiment Analysis serves two different purposes. The first purpose is to serve consumers who wish to find reviews of products made by other customers, and “rank them by authoritativeness, reliability and thoroughness” (Karlgren et al. 2012:2). The second purpose is to help producers who are interested in getting an overview on the “general mood of consumers vis-à-vis their product or service” (Karlgren et al. 2012:2). In both cases, Sentiment Analysis aggregate opinions or emotions on certain terms. These collected sentiments express positive, negative or neutral feelings towards a term or a product.

For this study, I used the platform Opinion Tracker (Datenwerk 2019) to first collect the data of the selected Twitter users, and secondly to analyse the data by applying a sentiment analysis algorithm. A Sentiment Analysis for all 8,000 nodes would lead to a high saturation and overly complex analysis. Therefore, I decided to concentrate the Sentiment Analysis on the 6 most active candidates, not only because these candidates show the most activities on Twitter, but also because they show the most overlapping interactions with each other and promise therefore the most valuable data. For the reason of saturation and consistency, I selected only data which indicates the first 1,000 mentioning of a specific main candidate (@Othmar_Karas, @SCHIEDER, @Vilimsky, @dieGamon, @WKogler and @JVoggenhuber).

a) @Othmar_Karas
@Othmar_Karas is the top candidate of the Christian Democratic party ÖVP. ÖVP presently holds the largest number of Austrian seats in the European Parliament. I was able to collect the first 1,000 mentions of @Othmar_Karas after a little then one week. Othmar Karas is a regular Twitter user, the peak on January 19 can be explained by the official nomination as the main candidate. I have not been able to identify any consistent use of specific hashtags or keywords in Karas’ campaign. This can be also seen in the diverse and equally distributed tag and word cloud.

b) @SCHIEDER
Andreas Schieder is the main candidate of the Social Democratic party SPÖ, with the second number of seats in the European parliament. The limit of 1,000 mentions of @SCHIEDER was reached after 17 days. Andreas Schieder is a constant Twitter user, with a great variety of topics and themes. Important topics for the start of his election campaign were #eureantwort and #europa.

c) @Vilimsky
Harald Vilimsky, the main candidate of the extreme-right wing party FPÖ also reached the first 1,000 mentioning after 10 days, which is indicating a strong supporter network and also a highly self-referencing of @Vilimsky.

d) @dieGamon
Claudia Gamon is the main candidate of the liberal party NEOS, with only one seat in the European Parliament. She reached the 1,000 mentions after 19 days. Since Claudia Gamon, rarely posts her generic content, (she is most of the time re-posting tweets from her campaign team with the explicit mentioning of @dieGamon), her main used keyword is @dieGamon. Interestingly, her campaign team were the first to strategically decided on one central message
with the keyword #Neuropa, but @dieGamon the main candidate is using this generic keyword very seldom.

e) @WKogler

Werner Kogler is the main candidate of die Grünen, the fourth biggest Austrian party in the EU Parliament. He needed nearly four weeks to reach 1,000 mentions on Twitter. This fact shows very well the struggle the green party faces today because of its split into two parties in 201x, with @JVoggenhuber belonging to the new part and who therefore campaigns for the same voter group.

d) @JVoggenhuber,

is the newest candidate running for a seat in the European Parliament. He started his campaign late, which explains the long period (two months) for reaching his 1,000 mentioning on Twitter. Voggenhuber belongs to party that split from the green party Die Grünen.

The findings on the personal interactions of the main candidates can be summarised in a number of points. Firstly, the similarities of the candidates are their political trajectories: almost all of them have been politically engaged since their teens or tween years. All of them are highly interconnected and show a strong social capital in connecting with other networks like party or organisations. All of the candidates are communicating with each other and are building a strong interconnected network. The only exception is @Othmar_Karas, at least in the investigated period he did not participate in the inter-connective peripheral communications in which the other candidates were involved. One can clearly see that the candidates @SCHIEDER, @dieGamon and @Vilimsky are constantly communicating with each other (see Picture 16), they are building the sub-cluster A together. The other sub-cluster are only peripheral communicating with the main sub-cluster in the investigated period.

5.3.2. Intensive Procedure

Danermark et al. (2015) and Creswell (2018) suggest that in order to complete the mixed method approach, one has to perform inductive investigations and a qualitative analysis of the empirical material. That is, this is to be done in addition to the extensive procedures and the quantitative analysis (see section a.). In this study, the intensive procedures are the digital Sinus-Milieu studies. Sinus-Milieu studies were developed by Sociovision and the DIVSI Institute (Borgstedt et al. 2016). In this part of my study, I try to conclude the analysis of my empirical data. I focus on the parts of the research question that are concerned with socio-economic classifications, and also try to answer my hypothesis (Chapter 5): can forms of use of Twitter be used to determine social stratification?

iii) Sinus-Milieu Model

The Sinus-Milieu study generically, as described in the book Praxis der Sinus-Milieus (Barth et al. 2017) aggregates lifestyle-clusters of empirically studied social groups. The aim of the Sinus-Milieu model is to generate a chart of social-economic strata based on Bourdieu's idea of social classification which is stretching from cultural to social capital (Borgsted et al. 2016, Barth et al. 2017). These ideas are
based on Bourdieu's field theory, where agents of certain social strata compete for the resources of social capital (like reputation or image) and for cultural capital (e.g., education and intellectual skills) (Bourdieu 1986, 2010).

The Sinus-Milieu model provides a specific protocol that can be used to generate cluster charts. As described by Barth et al. (2017), this protocol starts by firstly conducting qualitative interviews and looking for representative features for building several lifestyle based groups. The outcome of these interviews is groups of like-minded people who are characterised by the same narratives and who share common features. These pre-clusters are formulated as varying hypotheses and are transferred in to a second step of the analysis where these hypotheses are tested by means of a quantitative survey and evaluated through a cluster analysis.

The DIVSI Institute performed these two-step analysis of lifestyle clustering for the Sinus-Milieus with a special focus on Internet based lifestyle segments in their latest DIVSI-Internet-Milieu study (Borgstedt et al. 2016). This study, as Borgstedt et al. (2016) state, reflects the recent developments of a digital society and, according to the authors, “represents a comprehensive empirical foundation” for today’s sociological phenomena. This model distinguishes between three digital user groups (Barth 2017, Borgstedt 2016). First, with 20% the smallest segment of digital users are the digital immigrants. Digital migrants have little knowledge of digital communication and are safety-oriented or selective in their use of the Internet. The second biggest group, with a share of 38%, are the digital outsiders with no or a distant use of Internet. Digital outsiders are amateurs when it comes to digital communication technologies. The biggest and third group, with 41% of all users, are the digital natives. Digital natives consists of either digital or efficiency oriented users, or of users who are purely entertainment-driven in their use of the Internet.

The digital user group model is based on the underlying Sinus-Milieu model and comprehend ten different lifestyle clusters. These ten different Sinus-Milieus can be mapped on two dimensions: on basic value orientations (x-axis), going from traditional to modernisation to reorientation of the studied groups, and on social stratification (y-axis), from lower to upper strata.

In the latest iteration of the Sinus-Milieu model, Jan Hecht und Nico Hribernik (2017) of the Sociovision Institute also adopted the Sinus-Model “to bridge the gap between the offline and the online” (Hecht and Hribernik 2017:103). This model depicts the higher and more intensive use of digital media and social media on the right side of the model (the 41% digital natives). This segment is dominated by the “digital sovereign”, or by efficiency and entertainment oriented digital users.

Unfortunately, Hecht and Hribernik (2017) have not presented a detailed explanation of how they reached this specific classification. Their only vague explanation invokes the monitoring of online use and “methods used in marketing and prognosis” (Hecht 2017) such as predictive targeting.
Presumably, the analysis of Hecht and Hribernik (2017) correlates with the theory of *Diffusion of innovations*\(^9\), which pursues an explanation of how and why certain new ideas or the use of new technologies are spread throughout a population. Combining the two models, the diffusion model and its spread of innovation and the Sinus-Milieu Model, one could clearly see the increasing use of Internet communications in the *reorientation segment* and upper strata segment of the Sinus-Model (right top section of Sinus Model). As the digital Sinus-Milieu model indicates, one could see that belonging to the upper strata causes a more intensive use of social media.

### 5.4. Answering Research Questions and Hypothesis

The mixed method approach unifies deductive and inductive reasoning by combining intensive and extensive procedures. Using a mixed method approach, one not only completes one of the traditional methods (e.g. quantitative research), but also goes beyond this, e.g. by combining a second part like qualitative research to generate a richer analysis for this study. Under this light the findings of this study are, in the same way as the analysis, presented in three parts: Firstly, I discuss in this part the findings from the extensive procedure, that is the findings from Social Network Analysis (SNA) and the findings of the Sentiment Analysis. Finally, I present the discussion on findings from the intensive procedure, the Sinus-Milieu Model. All

\(^9\) The Diffusion of innovations theory is based on the theorising of Everett Rogers in 1962, where he argues that diffusion is a communicative process that spreads innovation within social groups. This model distinguishes between innovators (2.5%) who are leading and the early adopters (13.5%) who are following the innovators, the early and late majority (each 34%) and the laggards (16%) who are resistant to innovative ideas. The idea of Diffusion is that the adoption to innovation is normally distributed.
three parts of the analysis are presented separately and a unified conclusive discussion with abductive reasoning can be found in the conclusion chapter of this study.

Discussion on Social Network Analysis (SNA) Findings

This research started with an investigation of the 14 main Austrian candidates to the European Parliament, and an analysis of their communicative network. The collected data of this network consists over 30MB of information and includes 40,000 data points and the Tweets from over 8,000 individuals. This SNA generated a highly complex imagery, with 51 different clusters. To focus the analysis and limit the interpretations to a meaningful extent, I then concentrated the SNA to the main six candidates and their closer social network. The findings are special and unique because looking in the detailed data, the SNA reveals that the main candidates are communicating to a large extend with each other by referencing and sending tweets to each other. One can clearly see that three of the main candidates are building their own little sub-cluster A (see picture 15). This is indicated by the thicker and stronger connections (indicated by the thickness of arrows) within this cluster (see Analysis picture 15). The stronger and thicker connections can be found in the sub-clusters A, B and C. For instance, even though they belong to opposite sides of the political spectrum, @Vilimsky (extreme-right) is constantly exchanging with @SCHIEDER (social democrat), @dieGamon (liberal) and @Jvoggenhuber (former die Grünen) and are building the sub-cluster A. The exception of this is @WKogler (die Grünen) in sub-cluster B, who is communicating at the border of the highly intensive main candidates’ sub-cluster and the conservatives’ sub-cluster C, with @Angelika Winzing who only participating in their discussions peripheral.

Discussions of Sentiment Analysis findings

In a second step, I also conducted a Sentiment Analysis on the gathered Twitter data. This Sentiment Analysis included a natural language programming analysis (NLP) supported by a machine learning algorithm. It shows certain patterns and sentiments in the use of certain terms and themes the main candidates are using (see Appendix). But unfortunately, the use of this specialised methodology doesn't produce any useful results neither in my endeavour to answer the research question nor to test my hypothesis. Kalgren et al. 2012 explain this with the fact that sentiment analysis
terms and concepts are “mapped to a positive-negative polarity dimension” and that “Mood in this context can be thought to be an underlying moderator of human action” (Kalgren et al. 2012:7). In this perspective, in portraying the discussion with a dualistic characterisation of the used words or topics does not help fulfil the purpose to understand the deeper underlying patterns or structures of social strata. Kalgren et al. (2012) support this when they argue that Sentiment Analysis methodology is a helpful tool for consumers to find good comments or reviews, and that producers “might be most interested in aggregating the general mood of consumers vis-à-vis their product or service” (Kalgren et al. 2012:2). I conclude that this method of a Sentiment Analysis, in the form as proposed and conducted, does not help in analysing social stratification. Furthermore, it does not support the answering of my specific research question as primarily anticipated, nor the formulated hypothesis. In order to reach the purpose of my study, a combination of Sentiment Analysis and qualitative methods seems more purposeful.

Discussions of Sinus-Milieu and Bourdieu’s Cultural and Social Capital

Summarising the analysis of the digital Sinus-Milieu model, one could say that the innovative approach by the Sinus-Milieu Model to match the digital user groups with Bourdieu's idea of social and cultural capital, reveals unexpected social classifications. Bourdieu's idea of people competing in their social fields over social and cultural capital by establishing distinctive behaviours, like special language or wearing special fashion opens the possibility to use cluster analysis to specify social fields in different lifestyle-clusters. For certain digital user groups, the Sociovision Institute clearly identifies social stratifications that correlate with the intensity of use of Internet technology (see Picture 19: with its highlight of the Twitter user segment.

For the empirical material of this study, one could derive the conclusion that Twitter users belong to the segment of digital natives (see Picture 8) and within this segment, the digital Sinus-Milieus place the Twitter users in the field of the digital sovereign and efficiency oriented users. These two groups of the digital natives are connected to the traditional Sinus-Model (see picture 7) and are overlapping with the group of elite performers, creative avant-garde and with parts of the pragmatic modern middle class and hedonists.

My analysis of this special constellation of personal interactions and communication over Twitter of the main candidates is that they belong more or less to the same social strata because of their interconnections on the social and cultural capital levels. These exchanges manifest themselves in the intensity and the frequency of their interactions (in short time a high number of exchanges in both directions). Looking also at the personal characteristics (see personal description in part 4.4. of the empirical material) of the candidates (age, political experience, education) supports also the conclusion that all the candidates are belonging to the same social strata. This is supported by similar educational careers and already an engagement in
politics at a young age. According to Bourdieu (1986), this can be attributed to the same social and cultural capital of all the main candidates. This seems to be a statement about the obvious. As the author Ducan Watts from the Harvard Business Review (2012) underlines the importance for social research “of studying the Obvious” (Watts 2012). He describes that social researchers are not studying the mystical or non-obvious world of ants or atoms, but by studying non-exotic phenomena it is easy to come up with a “plausible sounding hypothesis” (Watt 2012) but difficult to prove it right or wrong.

*Picture 19: Sinus-Milieus for Austria 2016 (Integral 2016) matched with Twitter user (Hecht 2017)*

Looking into the dimensions of social and cultural capital (Picture 20) one could distinctively see the overlapping in both dimensions. The analysis of the social and cultural capital is also based on personal experience. Since I have worked for several years in political organisations, I do know some of the candidates personally and can verify the social capital and some of the cultural capital dimensions they possess. All candidates have experienced the same kind of socialisation, having become active in a political youth organization in their teens or twenties show almost. They have all built their social capital. Furthermore, the cultural capital of the candidates has been increased with university education. The candidates have learned to use a high-level language to communicate and interact with others. To conduct a thorough analysis the objectified cultural capital of all candidates, neither the SNA nor Sentiment analysis are providing enough data. Other methods are necessary.
### Social and Cultural Capital according Bourdieu (2010) concepts matched with candidates

<table>
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<th>Cultural capital</th>
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<td>big networks</td>
</tr>
<tr>
<td>political engagement since teenage years</td>
<td>ÖVP</td>
</tr>
<tr>
<td>political engagement since teenage years</td>
<td>SPÖ</td>
</tr>
<tr>
<td>political engagement after school leaving</td>
<td>NEOS</td>
</tr>
<tr>
<td>political engagement since teenage years</td>
<td>FPÖ</td>
</tr>
<tr>
<td>political engagement since University</td>
<td>die Grünen</td>
</tr>
<tr>
<td>political engagement since the 1980ies</td>
<td>div SM</td>
</tr>
</tbody>
</table>
6. Conclusions

Due to the increase and spread of ICT and social media, today's social research faces new difficulties and challenges to produce relevant analyses of contemporary social phenomena that are reflecting societal changes. At the same time, the study of social media today offers social researchers a number of new opportunities that did not exist a few years ago: to retrieve data, to conduct research, to combine different data sources, etc. Unfortunately, in sociological research there is often a perceived dichotomy between qualitative and quantitative methods. With this study, I am addressing this misunderstanding. This outdated conflict between the epistemological sovereignty in interpreting events is still present in academic research and teaching. This study wants to show a way out of this anachronism, by attempting to show how the two different approaches could be married to produce thick descriptions of social phenomena.

With this research, I want to show that applying Critical Realism (CR) not only serves sociological and philosophical knowledge production but also serves ordinary students an interesting and fitting tool to investigate contemporary social phenomena. One of the under stated beneficiaries of CR is an opportunity to resolve the dichotomy between inductive and deductive methods, by introducing the idea of extensive and intensive procedures (Edwards et al. 2014, Archer et al. 2016, Gorski 2013). These differences are not only surfacing on a semantic and linguistic level, but also presuppose a different understanding of the interplay of qualitative and quantitative research methods. This new and different understanding manifests itself in the application of a mixed-method approach to social research (Creswell 2018, Danermark et al. 2005), which not only examines the laws of nature of a social phenomenon, but also summons up the full scope of interpretative methods.

This new approach does not result in an easier and faster working pace for researchers, on the contrary this new approach is more demanding and time consuming. But as I can testify through my own experience with this study, it provides more meaningful results, making the most out of both qualitative and quantitative procedures for the analysis. With these procedures, as Edwards et al. (2014) is stating, CR is “moving from the empirical to the real through the use of abduction” (Edwards et al. 2014:17). With abduction, social phenomena and everyday objectives are re-described in “an abstracted and more general sense” (Edwards et al. 2014:17).

Under this light of abductive reasoning, which looks for the simplest and most likely explanation or the best available explanation for an observation by answering the research question and the formulated hypothesis, I conducted three different
statistical and investigative procedures with the goal to produce “thick accounts of the phenomena under investigation” (Edwards 2014:16).

To answer the first research question:

*RQ1: How can the application of socio-economic classifications help establish a better understanding of the actors in a selected social media phenomenon?*

I changed my first and broad attempt of studying social classification under a critical and Marxist lens to instead basing my analysis on the approach of Critical Realism. Each and every social media platform or even large media corporations like the BBC are using socio-economic classifications today to better understand their audiences. Usually these attempts only superficially touch social phenomena and produce generic and replaceable findings by just blindly collecting numbers and data. Other attempts to make socio-economic classification use artificially produced personas based on few investigations with no larger empirical base. After working professionally for the past years with socio-economic classifications and now closely studying different methods and approaches, I have concluded that the sole classification of humans into any groups does not meet the purpose of better understanding a social phenomena. What this present research wants to demonstrate is that not only a mixed methods approach, with the combination of qualitative and quantitative methods towards social research is necessary but not enough. Furthermore, I conclude that only a more thorough investigation based on Critical Realism allows a deeper and better understanding of actors in a studied social media environment. Therefore, Critical Realism provides a purposeful framework to combine deductive and inductive methods with abductive logical reasoning based on quantitative empirical data and qualitative interpretations.

To answer the second research question:

*RQ2: How does the form of use of certain social media tools or in this case the forms of use of Twitter as a communication tool, indicate the belonging (under special considerations of Bourdieu's social and cultural capital) to a certain social-economic stratum?*

I followed a three steps methodology. **Firstly**, I carried out a two-steps SNA which revealed small sub-clusters of the main EU candidates with intensive inter-connectivity and communications. This indicates that they are exchanging information and communications intensively, which I interpret as an indication that they are sharing the same social and cultural capital. **Secondly**, I conducted with the gathered data a Sentiment Analysis, where a positive or negative connotation with terms and words are presented. Due to the natural limitations of a Sentiment Analysis, which is limited in aggregating the general mood of users (as described in chapter 5), the Sentiment Analysis does not help in answering the research question or hypothesis.
For further investigations and further developments, a more elaborated procedure for Sentiment Analysis combined with critical discourse analysis would be more useful and open up or a broader application of Sentiment Analysis in social research. The third step in this research was an application of the Sinus-Milieu studies, which are, in turn, based on Bourdieu's field theory with Bourdieu's ideas on cultural and social capital. By applying both models, a deeper understanding of the context of the investigated group of EU candidates was created.

To answer the research question (see above) and the hypothesis:

*If individuals are intensively communicating with each other via Twitter, then this can be seen as an indicator that they belong to the same social class (considering Bourdieu's model and its cultural and social capital dimensions, both remaining useful methods, the Social Network Analysis (SNA) and Sinus-Milieus Studies are supporting the hypothesis as well as the research question. By abductive reasoning one could say that because of using certain communicative tools (such as Twitter) a causality of the belonging to certain socio-economic clusters can be determined. Furthermore, one could also determine that all of the candidates, because of their intense inter-connective communications via Twitter, are more likely belong to the same social strata. Firstly, because they possess the same properties of social capital (e.g., belonging to big networks like political parties and possessing the same kind of extended network that is formed during engagement in youth politics, see picture 20), and because they possess the same kind of cultural capital. The Sinus-Milieu studies therefore provide a helpful tool to place and investigate a social phenomenon in a specific socio-economic environment. Unfortunately, the Sinus-Model belongs to a commercial institution and all the details of their investigative process are not disclosed. A more open and transparent presentation of the Sinus-Models would be beneficial for future research.*

In summary, I would like to conclude that by compiling this research, my overall goal, to demonstrate the use of Critical Realism as an epistemological framework to create a thicker account of social media research, has been fulfilled. The combination of extensive and intensive procedures generates better results than each procedure would have done separately, and a mixed methods approach with both qualitative and quantitative analysis was more fruitful than just one of these two methods. The additional benefit of Critical Realism for this research, is that it delivers a transcendental realism of demi-regularities like social stratification, but also at the same time achieve a measure of reflexivity and causality that is beneficial to social media research. Therefore, this research points at a new way to investigate social media. In my future research, I would like to develop a deeper understanding of CR applied in social media research and investigate the application of other methods for this purpose.
7. References


Appendix

Picture A1: Mindemap of all main candidates and uses #Hashtags
Picture A2: Modularity Report for SNA and Distribution


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<td>Date: 2011</td>
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<td>Kind: Force-directed</td>
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<tr>
<td>Graph size: 1 to 1 000 000 nodes</td>
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Picture A4: Modularity Report for SNA and Distribution, Step 2 with fewer communities

These are the results of the Sentiment Analysis for each of the main candidates

Picture A5: Table, @Othmar_Karas mentions in sentiment analysis

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<th>Persons</th>
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<th>Topics</th>
<th>count</th>
<th>word count top 20</th>
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<td>Europawahl</td>
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<td>karas 180</td>
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<td>Karas Gut</td>
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<td>Karas Gut</td>
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<td>Övp</td>
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<td>Europäer</td>
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<td>@viimsky 174</td>
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</table>

| ovp            | 159   | europa   | 146   | europawahl   | 137   | franz 137 |
| @m             | 137   | video    | 130   | entschieden  | 128   | @vilimsky 127 |
| mai            | 125   | kandidiere | 124  | eu           | 118   |
### Picture A6: Table, @SCHIEDER mentions in sentiment analysis

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<td>(derStandard.at Red.)</td>
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<td>Claudia Garmon</td>
<td>42</td>
<td>Spö</td>
<td>49</td>
<td>zwei</td>
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**wien** 707  
sonntag 632  
uhr 629  
dabei 576  
ersten 563  
freitag 556  
gibt 536  
gut 528  
spiel 515  
kommt 496

### Picture A7: Table, @Vilimsky mentions in sentiment analysis

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### Picture A8: Table, @dieGamon mentions in sentiment analysis

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### Picture A9: Table, @WKogler mentions in sentiment analysis

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