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Homophobic Discrimination as a Spatial-Contextual Phenomenon:

Examining the Relationship between Places of Residence and

Attitudes Towards Gay Men and Lesbians

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1 Introduction

With heteronormativity still very much anchored in society, it can be assumed that going against the norm does not go unnoticed. The consequences can be stigmatization or prejudiced behavior. Individuals falling out of heteronormative distinctions of desire and into a minority of sexual orientation, will face a higher probability of experiencing discrimination over their life (D'Augelli & Hart 1987; Wienke & Hill 2013). Austria, being a relatively conservative country, represents a particular social backdrop that may exacerbate these challenges. This is evident in the country's political landscape, seen in voting preferences for hypothetical national council elections (the *Sonntagsfrage*). An opinion poll, where recent statistics show that the right-wing populist party, FPÖ (*Freiheitliche Partei Österreichs*), would receive the highest percentage of votes, ranging between 27% and 32% (as of 23rd July 2023; APA 2023). Additionally, Austria exhibits a higher degree of religiosity, compared to Germany for example, with approximately 77.6% of the population professing a religion in 2018 (ESS 2018). This higher religiosity often corresponds with more traditional values, which can further contribute to more conservative social environments and greater orientation towards existing norms. For individuals who challenge heteronormative sexual orientations, navigating through Austria's socio-cultural landscape might therefore pose additional difficulties due to the country's conservative tendencies and religious influence. In a European Union Agency for Fundamental Rights Austrian study, 40 % of sexual minorities surveyed said they felt discriminated against due to being LGBTI in eight¹ areas of their life in the past 12 months (FRA 2020). In a country comparison within all 28 EU member states, this is only 2 % less than the overall EU wide answer (FRA 2020).

The basis of the work is created by societal assumption of marginalized groups being more comfortable living in heterogeneous domiciles, for example, big cities. This can be attributed to the belief that central areas are home to a wide variety of people, indicating a wide range of life choices and a high tolerance for minorities, in this case, sexual diversity (Wienke & Hill 2013). A large body of empirical and theoretical work in recent years confirms that there is a high tolerance for sexual diversity in urban areas (Brady 2015; D'Augelli & Hart 1987; Oswald & Culton 2003). As reasonably as further research concluded that it is difficult for sexual minorities in rural areas (Lyons et al. 2015; Kramer 1995). Social research on homosexuality is though predominantly urban-based, resulting in relatively little knowledge about gay people in the periphery (Brady 2015; D'Augelli & Hart 1987; Wienke & Hill 2013). In addition, existing

¹ These areas include: “looking for a job; at work; looking for housing; by healthcare or social services personnel; by school/university personnel; at a café, bar or nightclub; at a shop; when showing your ID or any official document that identifies your sex” (FRA 2020)

research often emphasizes the challenges rather than the opportunities of rurality for sexual minorities (Lyons et al. 2015; Wienke & Hill 2013).

Nevertheless, there is an increasing minority research field depicting and emphasizing positive effects of rural gay life (Gray 2009; Kirkey & Forsyth 2001; Oswald & Culton 2003), arguing that gentrification or the impersonal environment of the central regions lead to relatively more conflict, with a possible increase in bullying and discrimination against marginalized groups in consequence (Wagner 2021; D'Augelli & Hart 1987). Due to the unique sampling, there is limited evidence of trends among sexual minorities in smaller metropolitan or rural areas (Wienke & Hill 2013), as most studies have been conducted in urban areas.

This thesis will hence examine the attitude towards homophobic discrimination as a spatial-contextual phenomenon in Austria. It will seek to capture possible changes in attitudes over time (from 2002 to 2018) towards gays and lesbians in spatial realm of belonging (places of residence) and examine differences in perceptions toward sexual minorities within these. In detail, it will try to grasp where prejudiced behavior is more prevalent in urban or rural areas and analyze possible changes in attitude over the (roughly) fifteen years. In a second step, it will try to distinguish the context effects of the phenomenon, precisely the effect of social cohesion on prejudices towards sexual minorities. The research's specific goal will be to find empirical justification for the argument that place of residence matters in combination with attitudes towards marginalized groups, in this case, sexual minorities. This research will take mentioned disadvantages and potential prejudices against sexual minorities and put them into a spatial context, showing that social cohesion can reduce prejudiced ideas toward marginalized groups. The objective will be to find empirical evidence for the narrative that higher social cohesion, perhaps seen in close proximity, leads to an increase in tolerant behavior.

In addition, one might assume that space or place of residence is related to prejudice, especially sexual stigma. It could be assumed that either urban surroundings have a higher tolerance because of the presence of diverse life predicaments, or rural surroundings are more tolerant of sexual minorities due to potentially higher social and collective efficacy or less overstimulated residents (see chapter 2.2.2).

The guiding research questions for this work will be:

Does place of residence matter for attitudes towards sexual minorities?

Does the intensity of contact matter for attitudes towards sexual minorities?

This thesis will be organized as follows: An overview of selected sociological theories of spatiality and prejudice, taking the work of G. W. Allport as a foundation, will be provided. The theoretical background will further explain the potential of contact within communities and its impact on exclusionary attitudes. A conceptual link will be made between prejudice, social cohesion, and spatiality, followed by the state of research on sexual minorities. This section will present an international overview of important research (focusing on North America and Germany), adding an overview of research conducted solely in Austria. The work continues with the empirical outline, consisting of the derived hypothesis, data, and methods parts, followed by the descriptive and multivariate statistic results. The work ends with a conclusion and outlook.

2 Theoretical Background

To gain insights into foundational sociological theories concerning space and prejudice, the following chapters will examine respective ideas important for this work, starting with a brief introspective of the disadvantages marginalized groups face within heteronormative societies. This is followed by sociology's understanding of spatiality, grasping different experiences of space itself, potential differences between inhabitants of specific areas through distinguishing differences within the knowledge of urban and rural characteristics. In the section following a brief insight into spatiality and sex(uality), and sexual minorities in social spaces, will be given. The goal will be to see if there are concepts of ways that place of residence impacts societal identities. And to link this to potential differences in urban identities versus rural identities and to see different outcomes in modern life predicaments depending on the spatial realms of one's belonging as well as distinguish spatiality and social cohesion within communities and their potential impact on discriminatory behavior. Next, the theories behind prejudices and stereotypes will be given, followed by an extension of a particular form of prejudice, sexual stigma. This then provides information on, for example, which characteristic differences are more likely to lead to sexual stigmatization. Thereafter distinguishments and the impact of community or collective efficacy, theorized as social cohesion, will be shown. In relation to spatiality and in relation to sexual minorities and prejudiced behavior. The chapters of 2.3 and 2.5 will each try to provide an insight into how the concepts discussed can be put into relation.

2.1 A Marginalized Group in a Heteronormative Society

The following three chapters will give examples of why it is essential to investigate minorities and will concentrate on the sociological relevance of marginalized group research. There are different obstacles for minorities, specifically sexual minorities, which they face in a heteronormative

society. The examples given, such as “minority stress theory” (Meyer et al. 2011: 204), “matrix of oppression” (Swank et al. 2013: 241) and missed opportunities, all of which are tried to put into relation with spatial differences, are thought of as placeholders for the adverse consequences sexual minorities encounter in societies following traditionally ingrained belief systems.

2.1.1 Minority Stress Theory

Existing research shows that mental health can deteriorate if being frequently confronted with prejudicial or discriminatory behavior by others, followed by increased stress and depression (Stangor 2009). But not only the narrative of prejudices can lead to this friction. Internalization of negative beliefs of one’s group, respectively one’s social identity, can also contribute to this. Ultimately it can deprive individuals of their social well-being and disrupt their idea of their social belonging (Meyer et al. 2011). This stress can be particularly significant for individuals who belong to stigmatized minority groups, as the disharmony between them and the majority can increase, making the resulting stress even greater (Meyer 2003). The frequency and subliminal nature of this constant friction in everyday life can lead to what’s called “minority stress” (Meyer et al. 2011: 204) and is conceptualized as “minority stress theory” (Meyer et al. 2011: 204, Swank et al. 2013). The theory roots mainly in the circumstance of minorities being inevitably exposed to, exemplary, heteronormative norms (Swank et al. 2013). These predetermined conditions can “create a hostile and stressful social environment” (Meyer 2003: 1) for the minority group that can lead to mental health issues and continued stress. Members of minority groups are exposed to more stress than members of majority groups because of their social status (Meyer et al. 2011; Everett 2014). Heterosexual norms and stigmatized preconditions are expected to impact minority groups strongly (Meyer 2003; Meyer et al. 2011). Ian H. Meyer (2003) suggests that prejudice and discrimination associated with low socioeconomic status, racism, sexism, or homophobia can be considered stressful as they can lead to changes that require adaptation in (everyday) life. Quantitative research further argues that there are geographical differences in the extent of mental health issues of sexual minorities versus sexual majorities. There seem to be measures that reveal a source of minority stress within state- and neighborhood differences (Swank et al. 2013; Everett 2014).

2.1.2 “Matrix of Oppressions”

Sexual minorities, even if they might be operationalized as such, are not a heterogeneous mass. Like any other group, they differ in their ethnic, socioeconomic, or gender conditions. They are at a varying degree of risk of victimization; thus, not every sexual minority faces the same stigma, oppression, or prejudices and is confronted with heterosexism or heteronormativity in the same

way. The theorized group is permeated by intersectionality, with e. g. white sexual minorities potentially experiencing differences in exclusionary attitudes compared to economically less privileged black sexual minorities (Swank et al. 2013). White sexual minorities generally “endure[] fewer discriminatory practices” (Swank et al. 2013: 252). In this context, place of residence also plays a role in oppression or pejorative behavior, as society's exclusionary attitudes favor whites regardless of where they live. (Swank et al. 2013; Meyer et al. 2011). General sociological categories, such as ethnicity, gender, social class, economic opportunities, and career advantages or disadvantages, can alter discriminatory behavior (Swank et al. 2013). Exemplary male privilege is existent within the group of sexual minorities as any other group, though male privilege is not as predominant for gay men in comparison to heterosexual men (Swank et al. 2013). Individuals falling out of heterosexual norms can thus underly a “double jeopardy” (Swank et al. 2013: 252), complicating or facilitating sexual minorities’ life predicaments. Sexual minorities face various disadvantages regarding their status, social role, etc. This can ultimately leave them in a “matrix of oppression” (Swank et al. 2013: 241).

2.1.3 Missed Opportunities

Heteronormative assumptions, which possibly culminate in stigma and discrimination, often introduced through intersectional and intergenerational reproduced systems of inequality, deprive sexual minorities of access to possibilities and opportunities (Meyer et al. 2011). In addition, the spatiality of their belonging can dictate their life path. Missed opportunities for sexual minorities can arise because of their realms of belonging. Research suggests that individuals who grow up in rural or non-metropolitan areas may experience more difficulties accessing resources and communities within the queer community and encountering hostile social climates and stigmas (Tsfati et al. 2020). This can lead to a lack of exposure to diverse perspectives and limited access to queer-friendly spaces, resulting in missed personal and social development opportunities. Additionally, individuals who grow up in environments that are less accepting of sexual minorities may face more significant challenges regarding self-acceptance and coming out, which can limit their ability to form healthy relationships and fully express their sexual identities (Meyer 2003). In summary, this leads to missed opportunities for sexual minorities arising because of their realms of belonging. Recognizing and addressing the challenges faced by sexual minorities in different areas of belonging is one way to promote inclusivity and equal opportunity for minorities, regardless of sexual orientation or geographic location.

2.2 *Sociology's Conditio Sine Qua Non*

As we have seen, geographic location seems to play an omnipresent role in all these examples of sexual minorities being disadvantaged because of their role in society. This can also be said about the establishment of sociology, which in the 20th century was directly accompanied by the foundation of the sociology of space (Löw 2010). Geographic location, understood within an overall concept of space, advanced to a core topic of social and cultural science reflection from the 1970s, with a concordance of the fundamental impact of spatiality on societies arising (Dirksmeier et al. 2020). Contributed through foundational texts of Émile Durkheim, Henri Lefebvre, Max Weber or Georg Simmel, space became essential in observing society and socialization processes – a “*conditio sine qua non*” (1908: 614) for sociology, as Simmel puts it. With understanding society and socialization as inevitably conditioned and interrelated and by spatiality, the significance of spatial conditions must be understood when trying to understand forms of socialization, at least for Simmel (Simmel 1995; Halfacree 2007). Simmel's concept of place does not refer to anything substantial but to a form of relationship (Löw 2010). Durkheim joins Simmel in his understanding of observing the social, which would be non-existing in sociology without observing space (Fuller & Löw 2017). Commonalities, disparities, linguistic expressions, traditions, and semantics of development (modern development processes, globalization, inequality, etc.) all can be viewed within the order of spatiality (Dirksmeier et al. 2020). Space can thus be treated as a sociological category just as gender, class, or ethnicity (Fuller & Löw 2017), having effects on the individuum or changing one's narrative comparably. Pierre Bourdieu referred to this as place effects (“*Ortseffekte*” (1997, as cited in Löw 2010: 616)): patterns of power or interpretations that differ in their plausibility, depending on their spatial character (Löw 2010)².

Simmel and Lefebvre developed their considerations of spatial theory based on everyday life and viewed space as relational (Löw 2010). “(Social) space is a (social) product” (Lefebvre 1991, as cited in Löw 2010: 616) as Lefebvre writes. He distinguishes between social and natural space, emphasizing that the latter is increasingly disappearing (Löw 2010). As for Lefebvre, space today is predominantly a social space and each society can produce its own space and as a contextual phenomenon, habitats can develop their own logic and impact the experience of those who live in them (Löw 2010). For example, Michael P. Brown (2000) argues that space actively participates in constructing gender, sexuality, and identity (see next chapter also). Depending on your spatial realm of belonging, your surroundings of social groups can differ and thus impact your socialization, potentially predicting or impacting your habitus, class, and social role (Löw 2010).

² e. g., addressing women is coded differently in the red-light district, then it is in the pedestrian zone (Löw 2010).

For Lefebvre, space submerges things and their relation to each other (Halfacree 2007). He argues that space is relevant only when put into human interaction and connection to the social world (Fuller & Löw 2017). This resulted in recognizing space as something humans actively produce to pursue their social interests or those of capitalism (Lefebvre understood production and control over space as capitalism's means of empowerment (Löw 2010)). Social science approaches spatial research to see space in a morphological understanding shaped by society and *zeitgeist* (capitalism, neoliberalism, etc.) and imbued with contextual dependencies (Steinführer et al. 2021; Fuller & Löw 2017) and inciting an understanding of spatiality as socially constituted, relational and consisting of a facet of components (Simmel 1995; Lefebvre 1991; Fuller & Löw 2017). As seen, spatiality holds great possibility to grasp contextual impacts of society and its structures or has its own impact on society and its structures. There are various sub-theories more on the concept of space as a (sociological) category. The following three chapters will give a brief insight into the sociology of urbanity and rurality and put spatiality and sex(uality) into relation.

2.2.1 Sociology of Urbanity

In scholarly discourses, the conceptualization of spatiality usually distinguishes between urbanity and rurality, differentiating the structures, contexts, and attributes that describe each space. Urban living spaces, for example, conceptualized by Louis Wirth (1938), are densely populated areas with a high heterogeneous accumulation of individuals (in Löw 2010: 606; Steinführer et al. 2021). John Martin Fischer's (1984) subcultural theory of urban life supports this perspective, which asserts that the primary distinction between urban and rural areas is that various subcultures, respectively sexual minorities can thrive in urban areas because of the size and density of the population (Wienke & Hill 2013). However, theorizations around urbanity are often a matter of attributions not only about the space itself but attributions to a particular idea of a persona (Dirksmeier 2020). Such as the metropolitan individuality conceptualized by Simmel, or within normative discourses, the idea of strangeness or the stranger (Abels 2009; Wirth 1938; Steinführer et al. 2021), regularly used to describe a prototype of a "city dweller" (Swank et al. 2013: 239). The stranger and the city dweller can be seen as someone in the socio-spatial context of urbanity, thus not perceived as disturbing but as usual (Steinführer et al. 2021).

The metropolitan individuality ("der Typus großstädtischer Individualitäten" (Simmel 1903 as cited in Abels 2009: 327)) as described by Simmel is found in a rapid and uninterrupted alternation, with having numerous possibilities to choose from. Berger, Berger & Kellner (1987) added to their observation of modern society, finding itself in a highly segmented and, in addition, particularly open society. Simmel further contributes that the modern age's

individualism and the number of pluralized possibilities can lead to rupture and overstimulation within the urban residence (Abels 2009). This contributed to the idea that city dwellers are somewhat overwhelmed with their everyday life by all the possibilities they are facing/ their place of residence offers them (see also 3.2.1). Modern city life, with its surfeit of possibilities and rapid change of internal as well as external impressions, can, in Simmel's understanding, lead to an increase in one's nervous life (Abels 2009), ultimately leaving the city dweller blasé (Löw 2010). The existence of this potential, which accentuates even further in urban areas compared to rural areas, can lead to what Simmel called disruption of the mental life (Simmel 1995). Wirth later refers to this in his text *Urbanism as a way of life*, published 1938, which generally disrupts perspectives and is capable of shaping strangeness into opportunities and sincerity (Steinführer et al. 2021; Swank et al. 2013).

As seen, the person of urbanity encounters an abundance of possibilities (Swank et al. 2013), making a change of identity of urban fellows visible, described in habitual urbanity (Dirksmeier 2020). As a coping capacity of individuals concerning the demands of urbanized contemporary society in a climate of subjectively conscious individualization, certain structural strangeness and contingency are seen (Steinführer et al. 2021). Urban residents are being permeated through "sometimes contradictory social cues" (Swank et al. 2013: 239), needing adaptation and flexibility in societal contexts. This leads to an adaptation and flexibility that would not be so accessible to the small-town dweller per se, or might even be considered unconventional or strange, says Swank et al. (2013). The urban dweller encounters a variety of social systems. With the spectrum with which they are confronted, this can lead to the possibility of adaptation and the reconciliation of contradictory beliefs. This, in turn, can lead to a process of transformation, with an increase in tolerance, not possible in rural areas (if rural areas are thought within the idea of relatively few inhabitants, and therefore inhabiting an already smaller mass of differentiated life concepts) (Swank et al. 2013). In the understanding of Wirth (1938), the significant characteristics of urban areas are capable of disrupting and changing socialization processes. In urban spaces, industrialization processes or the mass of social networks can have heightened possibilities of inclusivity (Swank et al. 2013). Cities often inhibit more significant concentrations of liberals, with individuals having higher academic achievement and less religiously fundamentalist (Swank et al. 2013). Because of these factors, urbanity is often characterized as civilized and tolerant of diverse lifestyles (Swank et al. 2013; Steinführer et al. 2021). Due to social heterogeneity emanating in big cities, a potential multitude of more accepting social interactions is possible. Additionally, macro-conditions such as population intensity, cannot escape a constant renewing and evolving set of

values, confronted with the abundance of possibilities in bigger spaces (Swank et al. 2013; Dirksmeier 2020).

2.2.2 Sociology of Rurality

Rural areas on the other hand are conventionally equated with predominantly geographically isolated areas, either omitting statements of densely or sparsely populated, a high land-to-human ratio (Halfacree 2007), family-friendly and close-knit communities dependent on agriculture or forestry plus they are often depicting an imaginary of an idyll life (MAP 2019; Swank et al. 2013). Rurality in spatial theory is often only conceptualized as an antidote to urbanity, as a space with high homogeneity, high religious and traditional values, higher self-responsibility for everyday life, and higher resource ties as well as lower social segregation (Swank et al. 2013). Rurality can be found in structural characteristic, in e. g. close-knit-communities, that potentially functions as a small-scale unit or a neighborhood, seen as a localization of the social (Steinführer et al. 2021).

Rural areas are used as fields of projection, coded regarding their structural and density characteristics (Swank et al. 2013) or cartographically distinguished from urban areas through typically rural factors, such as the said density in agriculture or the accessibility to major urban centers (Steinführer et al. 2021). Simmel himself saw the rural, small-town way of life, with its slower and more regulated rhythm, as a contrast to the volatile, fast-paced metropolitan way of life (Simmel 1995). Though predominant perspectives theorizing rurality tends to versatile, with constructivist perspectives defining rurality as a multiplicity of facets that is characterized through a variety of experiences, intersecting within the same geographical area, acknowledging intricate social spaces (Steinführer et al. 2021). Other conceptions view rurality as something detached from mainstream trajectories but rather as a conglomerate of notions (Steinführer et al. 2021). Keith Halfacree (1994), for example, tries to incorporate a variety of discourses of rurality rather than one established definition and operationalizes rurality in a dichotomy of materiality and imaginary, focusing on its physical structures and focusing on societal ideas of rurality. Such as the rural idyll life mentioned above or the “rural locality” (Halfacree 2004 in Steinführer et al. 2021: 66). Taking ideas of a certain individuum and putting it into relation with the space itself. Halfacree’s ideas exemplify theoretical approaches to show different discourse layers within the determination of rurality and explore its relationality (Steinführer et al. 2021; Heley & Jones 2012). The reference to the rural as a residual category of modern contemporary societies has its roots in developing different approaches for a positive content of the concept, more than “other-than-urban” (Steinführer et al. 2021) or a residual social category.

As seen, there are also concepts concerning potential *trademarks* of the rural citizen. According to what John Martin Fischer (1984) later called the “determinist theory” (cited in Wienke & Hill

2013: 1261) rural residents are seen to be having better mental health, stronger social ties, and more robust shared traditions compared to urban residents, which makes them less likely to behave antisocially. Fischer (1984) put these findings in perspective by concluding that there is a traditional romanticization of rural life “while pathologizing urban life” (Wienke & Hill 2013: 1261; can also be seen in parts of Simmel’s conceptualizations of the urban). Despite this, the socio-economic status of rural inhabitants often negatively differs from their urban counterparts (Wienke & Hill 2013). They have different access to alternative information, lower income, and fewer educational opportunities, possibly leading to a more traditional value system and higher prejudices against anything outside the norm (Boso 2013). Historically, rural residents have held more traditional belief systems than their urban counterparts. Religious institutions also play a more predominant role in the life of the small town or village. The social conservatism that potentially awakens from this can greatly impact residents’ attitudes, values, and standards (Belanche et al. 2021).

2.2.3 Spatiality and Sex(uality)

Spatial sociology continues to try to elevate the understanding of space to disembark from an ontology of what it is or could be to an account of how space continuously shapes and impacts societal norms and society, being inherently affecting and affective of society (Fuller & Löw 2017). The possibility of shaping or influencing others annotated sociological concepts, such as sex or gender. Judith Butler’s discourse-theoretical constructivism acknowledged gender relations, space, and sex(uality) within her work. In *Gender Trouble: Feminism and the Subversion of Identity* (1990), Butler considers the construction of gender as a performative act that emerges through repeated social practices and discourses, arguing that the concept of place plays a crucial role within the construction (Butler 1990). In her argumentation, the construction of gender is inevitably intertwined with space, analyzing cultural norms and relations and demonstrating how space functions as a mechanism in reproducing or constraining gender(ed) identities, roles, or stereotypes (Butler 1990). Spaces are thus capable of either privileging, discriminating, or excluding gender identities or (not normative) sexual orientations. In later works (*Bodies That Matter: On the Discursive Limits of 'Sex'* (1993) or *Undoing Gender* (2004)), Butler continues to emphasize the social construction of space, sexuality, the body, and its interactions, providing important impetus for discussions of sexuality and space in the social sciences.

Additionally, Michel Foucault (1978) pointed to the fundamental relationship between space, sexuality, and power, thinking of space as something that materializes power. And that space can segregate human interaction, with the capacity of including or excluding and further materializing oppressive and disciplinary relations of power (Brown 2000). He notes how society is creating

spaces controlling people's behavior and the way sexuality is treated in certain spaces reflects social norms and power structures (Foucault 1978). For Foucault space is not neutral, but rather controlled and shaped through social power relations (1984). He argues how society regulates people's sexual behaviors and identities through knowledge systems and language and it exercises power by considering certain behaviors as normal and acceptable and stigmatizing others as deviant (Foucault 1978). Through this, Foucault questions social mechanisms and the relationship of sexuality, power, and space.

Another example of understanding space in sub-contexts is seen with Michael P. Brown (2000), who explained through the metaphor of the closet, for hiding one's sexual identity, how space can contribute to conceal or protect sexual minorities (*Closet Space: Geographies of Metaphor from the Body to the Globe* 1997/ 2000). The closet, as a metaphorical space, is capable of hiding one from discrimination because the closet is hidden. However, it can also increase internalized homophobia or self-oppression (through the act of being invisible) (Brown 2000). Brown explores the connection between the individual "closet" and larger spatial contexts such as neighborhoods, cities, and global discourses on sexual subcultures. He shows how the spatial organization of cities and communities can affect the experiences and well-being of sexual minorities. Discrimination and prejudice often manifest in these groups' spatial exclusion and stigmatization, whether through the lack of safe spaces or marking particular places as 'gay' or 'lesbian'. Brown argues that the presence and recognition of sexual minorities in space can have transformative effects. By creating spaces where sexual subcultures can exist freely and openly, discrimination and prejudice can be combated, and alternative narratives of sexuality and identity can be promoted. Brown highlights the importance of space for sexual minorities and how spatial structures and discourses can influence discrimination, recognizing that spaces for sexual minorities can be significant when promoting equality and acceptance.

Foucault, Brown or Butler tried to show the interconnectedness of sexuality, visualizing the complexity of the topic and its dependence on structural conditions. In the next chapter the condition of space is going to be put into relation with sexual minorities.

2.3 Sexual Minorities and Space

There are several indicators suggesting an impact of space when talked about sexual minorities. For example, the periphery is generally equated with more hostile social climate towards sexual minorities compared to urbanity (D'Augelli & Hart, 1987; Wienke & Hill, 2013). With scholars pointing out the importance of examining how these narratives may be transformed, especially "between cultural and personal realms" (Kazyak 2011: 3). That is why, when looked upon minorities within spatial realms conventional wisdom (Wienke & Hill 2013), will often lead to the

belief that marginalized groups are more comfortable living in these settings benefitting from open and diverse lifestyles, with access to a variety of resources, and more accepting communities (Boso 2013). Rural areas are, as said, generally considered to be more conservative, with higher levels of religious institutions, greater homogeneity of beliefs, more vital adherence to traditional values, and less access to alternative information (see 2.1.2; Boso 2013). According to research, rural and small-town sexual minority individuals are more likely to experience subtle discrimination and generally encounter more discrimination (Swank et al. 2012). Scholarly literature tends to focus on these (negative) aspects of rural gay life (Wienke & Hill 2013; D'Augelli & Hart 1987; D'Augelli, 1989). The cultural norms and expectations that prevail in rural areas, primarily shaped by institutionalized beliefs, might contribute to higher levels of stigma and discrimination against sexual minorities (Boso 2013).

Additionally, access to safe spaces for sexual minorities (as seen in Brown's closet space metaphor) is limited in rural areas, leading to isolation and lack of connection to community (Brown 2000). Potentially exacerbating minority stress, as individuals are more likely to experience anxiety when they feel disconnected and unsupported. In connection to minority stress theory, rural minorities are at a higher risk to endure minority stress compared to their urban counterparts (see 1.1; Swank et al. 2013). These ideas dictate the parameters of sociological research. Any upsurges on rural sexuality studies have mainly concentrated within qualitative research still nevertheless depicting the spatiality of rural living as oppressive and unhostile (Swank et al. 2013). Utilizing the theory of Fischer, it could be assumed that the stronger social ties as well more social behavior seen in the periphery could positively applies to the experiences of queer individuals, who may face less harassment and discrimination in rural areas.

With the theoretical groundwork mentioned in mind, it can be assumed that space, respectively place of residence, has an impact on sexual minorities. It further could be assumed that urban surroundings have a higher tolerance due to the presence of diverse life predicaments and higher occurrence of non-normative lifestyles. Another assumption could be that rural places are more tolerant of sexual minorities due to potentially higher social and collective efficacy or less overstimulated residents. What though is the foundation of tolerant or non-tolerant behavior? And what are possible factors contributing to the one or the other? The following part will concentrate on the nature of prejudice, (sexual) stigma and in what way spatiality can play a role.

2.4 Nature of Prejudices

When trying to understand the marginalization of certain groups in (for example) heteronormative societies, it is crucial to understand the theoretical derivation of the ideas of

majority and minority, or on what basis decisions about inclusion or exclusion are made. One possibility is derivation through prejudice and prejudiced beliefs. Low tolerance and strong rejection of minorities that result in discrimination are associated with prejudiced beliefs and tend to occur together. To recognize and reduce discrimination towards sexual minorities, prejudice must be recognized and reduced – as well as understood. Prejudices can be conceptualized as a negative attitude “marked by cognitions” (Son Hing & Zanna 2010: 163) towards an individual or a group (Allport 1954; Stangor 2009; Dovidio et al. 2005; Eagly & Diekmann 2005). Additionally, it can be seen as a bias, undervaluing individuals based on a perceived membership in a social group setting (Abrams 2010). Foundational seminal writings within sociological research on the topic of prejudice mostly originated from the cognitive approach of Gordon W. Allport (1954), who argues prejudices descend from an idea of in- and out-groups (people we affiliate with or not) and an idea of a majority versus a minority (Dovidio et al. 2005; Son Hing & Zanna 2010), advantaging the majority and exploiting the minority. Dynamics of prejudices work through mechanisms of control and contribute existing inequalities (Dovidio et al. 2005; Eagly & Diekmann 2005). Subsequential research to Allport’s differentiated in aspects such as extracting the notion of prejudices from being marked by negative attitudes (Dovidio 2005), meaning that prejudices are not necessarily build on negative valuation of another group, but rather the positive valuation is missing. Arguing that prejudice, and stereotypes stem rather from one’s own identification (with a certain ingroup) and not from a hostility towards others, fostering discrimination against and behaving preferential towards whom they believe to either share or not share a belief system with (Eagly & Diekmann, 2005). Research following Allport recognizes that prejudiced behavior often goes unnoticed for the prejudiced person. Showing that the biased are often unconscious of their prejudiced beliefs (Dovidio, Glick & Rudman 2005). However, prejudices are generally cognitive representations of current societies (Stangor 2009). And to fully understand prejudice, both, the structures of the social environment and the structures of the individual on a psychological level must be understood (Eagly & Diekmann 2005).

Another aspect of prejudice is the fixed belief system, particularly regarding certain characteristics that are thought to be consistent with members of certain social groups (Eagly & Diekmann 2005). And to understand prejudices is to understand these belief systems that build up on categorizations or stereotypes. Both of which that can be seen as ideas that are shared and used as shortcuts for the mind to generalize social groups (Kenworthy et al. 2005). This so conceptualized within social psychological approaches such as Tajfel and Turner's (1979) Social Identity Theory where the role of social categorization is seen as a seminal process of developing and maintaining prejudice. The substance of social categorization (social stereotypes) is drawn

from the psychological purposes they serve for a social group (Tajfel 1981; Fiske, 2015). Stereotypes divide people according to categories that can either be descriptive, such as gender or ethnicity, or achieved, such as occupation (Dovidio et al. 2005; Deaux 1996). Categorizations were thus recognized as a source of bias because they are "fundamentally responsive to social context" (Eagly & Diekmann 2005: 25; Dovidio et al. 2005). Meaning that the categorization itself might not be the issues, thus the context of it and its dependence and fragility towards societal and group narratives.

Having prejudices and building stereotypes is inevitable and inherently human³, says G. W. Allport (Dovidio et al. 2005). He further understood "prejudice and discrimination as byproducts of cognitive mechanisms that are typically functional in everyday life" (Dovidio et al. 2005: 12), byproducts rooted in originally functional needs in societies, like categorization. "Categorization is driven by desires for simplicity" says Charles Stangor (2009: 3; see also Tajfel 1981; Tajfel & Wilkes 1963), it "dominates our entire mental life" (Allport 1954/1979, as cited in Dovidio et al. 2005: 4) and enable us to function (Fiske 2005). Social categorizations can be understood as a segmentation, classification and order systems tools of the brain to go into form of social action (Tajfel & Turner 1986).

In the understanding of Gordon W. Allport prejudices stem from a "mismatch between beliefs" (Eagly & Diekmann 2005: 19) often resulting from established belief systems of status or social roles and rooted in the narrative of people striving for higher self-esteem (Allport, in Dovidio et al. 2005). Theoretical as well as empirical frameworks following Allport's ideas are left with a dissent how exactly prejudices are formed (Rutland & Killen 2015). Further research of the etiology of prejudices found denominators in the moral development within childhood, where children form stereotypical narratives based on social conventions as well as group dynamics and group identity (Rutland & Killen 2015). This then results in cognitive representations and norms that will be fixated on early on and will get harder to change (Stangor 2009). These narratives are then, potentially, are formed into prejudiced ideas and group ideologies (Rutland & Killen 2015).

Identifying with a group or the perceived membership of a social group, plays a vital role in understanding the nature of prejudices, providing the groundwork for stereotypes or social categorization as well as the need to form in- and outgroups (Dovidio et al. 2005; Meyer 2003). G. W. Allport suggests that group identification emphasizes the connection between the needs and interests of an individual and the one's of the group they are belonging to, resulting in

³ G. W. Allport also implied prejudiced people are thought to be weak and "fundamentally irrational" (Dovidio, Glick & Rudman 2005), to listen one of the irrationalities of Allport's studies.

research concentrating on identification of groups (Esses et al. 2005). This group identification, or later theorized through Tajfel and Turner (1979) as social identification (seen above) has impacted the importance of identifying with a group when looked upon prejudices. Allport saw social identification as necessary for social interactions, Tajfel & Turner saw social identity as the idea of maintaining (or heightening) self-esteem (much like Allport's idea of why people are prejudiced) based on beneficial comparisons (Dovidio et al. 2005).

Social identity approaches try to show, what triggers intergroup processes (Meyer 2003) as well as stereotyping or depersonalization of individuals (Mummendey 1985). Showing that the higher intergroup behavior gets, the higher the probability for more minority positions in out-groups and its impact (Diekmann 2021). These findings can help to understand how prejudices work, in understanding the need for individuals to identify themselves, respectively with a group.

2.4.1 Sexual Stigma

In relation to sexual minorities there is one particular form of prejudices, called sexual stigma. Which is, as any other form of prejudice, derived from contents of cultural stereotypes that are either historically entrenched or formed on the basis of valued or denigrated attributes (Herek 2009). As sexual orientation can be seen as a constructed category, it is also based on constructed ideas of power relations, denigrating anything other than the norm- in this case heterosexuality (Herek 2009). Build up on ideas of inferiority and superiority, on in- and outgroups. Stigma is here seen as a negative esteem that ascribes people to characteristics and ascribe them to a certain group or category (Herek 2009). Which, the same goes for prejudice or stigma, shared knowledge is used within these ascriptions, discrediting others. "These culturally constructed meanings are grounded in society's power relations" (Herek 2009: 441) and sexual prejudice is defined as attitudes that use categorical judgmental tendencies to respond to groups or individuals based on their affiliations.

Sexual stigma is attached to non-heterosexual behavior, non-heterosexual identity, relationship, or community. It indicates the socially shared knowledge of the devalued status of homosexuality in society, that is, its denigration and discrediting in comparison to heterosexuality (Herek 2009). Sexual stigma represents this devaluation of sexual minorities, that is mostly the comparison within a binarity of homosexuality and heterosexuality. It builds up roles and expectations that any other sexual orientation than heterosexuality inhibits negativity. The devaluation of anything other than heterosexuality, the thinking within a binarity of the one vs. the other, is exemplary seen in first knowing avowals of the term "homosexuality", published in a German-language pamphlet by Karl Maria Benkert in 1869 (Herek 2009). Benkert conceptualized homosexuality in a distinction to "normal sexuality" (*Normalsexualität*, Herek 2009). Eliminating Benkerts attempt

to represent same-sex attraction in a more positive framework and building the groundwork for the inferiority of homosexuality regarding heterosexual attractions. Only later was the word "heterosexuality" used as a substitute for homosexuality. However, the stigmatization of homosexuality in Western thought has always been an essential part of the differentiation of sexual behaviors and desires (Herek 2009) and runs through to this day in the idea of minority and majority status of homosexuality vs. heterosexuality. As it was shown, heterosexuals which have high sexual stigma, are more likely to be older, have low levels of education, highly religious, maybe even with fundamentalist beliefs, and are residents in areas where their attitude is the norm (which, in relation to North America are midwestern or southern States), less likely to believe that sexual orientation is a choice, less likely to be in close contact with open non-heterosexuals (Herek 2009). Opportunities for heterosexuals having close personal relationship with sexual minorities rose in the past few years (Herek 2009). Having such relationships is negatively correlated with sexual prejudice. The idea of relationships possibly influencing stigmatized or prejudiced beliefs could be seen within Allport's conceptualization of prejudice already. In the following, the concept of cohesion is therefore going to be integrated.

2.4.2 Social Cohesion

Once Allport conceptualized *The Nature of Prejudices* he came up with a basic formula to work against prejudices, the contact hypothesis, conceptualized and pursued as an "intergroup contact theory" (Pettigrew & Tropp 2005: 187; Kenworthy et al. 2005) later on. Saying that prejudice could be reduced through a convergence of status, overlapping goals, institutional level support, and a sense of rapprochement or similarity between groups (Kenworthy et al. 2005; Stangor 2009). Allport advocated intergroup contact theory as an important measure to reduce inequality (Dovidio et al. 2005). With current research showing, that rejecting openness (being closed-off) tends to ensure a higher probability of questioning the cohesion of a society which can lead to rejecting minorities (Zick & Rees 2021). Nevertheless, mere interaction with an outgroup member would not be enough to change attitudes towards the group and would not necessarily improve intergroup relations (Kenworthy et al. 2005). Allport's deep conviction was that "contact must reach below the surface in order to be effective in altering prejudice" (Allport 1954/1979, as cited in Kenworthy et al. 2005: 280). Further research suggests that social cohesion can reduce harmful group attitudes, for example, through the idea of "neighborhood effects" (Sampson 2012: 443), which refers to a collective efficacy or an idea of regulation through social proximity. But to create this kind of social closeness seems to be rather complicated, especially in terms of how Allport envisioned it (Sampson et al. 1997; Deitelhoff et al. 2021).

Nevertheless, contact within groups seems to be a reliable source and testimony for reducing prejudices, with differences between factors that moderate (the contact) or factors that seemingly only mediate the prejudices (Kenworthy et al. 2005). The importance seems to be that within pluralized societies seen in modern times, it must be seen as a bridging function and opportunity rather than a potential threat to one's own group (membership) (Zick & Rees 2021). With the possibility of accompanying diversity to get to a point of interaction between groups, social cohesion can be the desired catalyst to reduce prejudiced behavior and increase tolerance (Zick & Rees 2021). Contact research, focusing on contact and prejudice, found out that the highest positive effects for contact between groups (differing in their ethnic, their sexual orientation in their age or their physical or mentally disability) of all groups researched was seen within the contact of heterosexuals and sexual minorities (gays and lesbians) (Pettigrew & Troop 2005). Ultimately, then, it depends on the intensity of the social interaction within groups and whether this interaction, this cohesion, is seen as threatening or not. High collective efficacy and social interaction can mean that ties within a community are strong because they have found a common enemy and can possibly lead to mutual reinforcement of traditional (heteronormative) beliefs (Abrams 2010).

However, social cohesion can be used to change discriminatory beliefs (Pettigrew 1998, Stangor 2009; Sampsons et al. 1997) and stays an essential parameter within group relations and prejudice research (Vezzali & Stathi 2016). But social interaction, especially in today's differentiated and multifaceted society, must be contextualized and, if possible, operationalized by, for example, the intensity of contact or in which homo- or heterogeneous environment (possibly small town and big city) one considers the social cohesion (Sampsons et al. 1997). The result can either be the significant reduction of prejudices or instead even reinforce them. Normative understandings of (democratic) societies, view the importance for individuals to experience cohesion and participate in social processes as something substantial (Zick & Rees 2021). This leads to a continuing process of negotiating and processing social interaction that makes a sustainable positive experience, understanding and recognition of others relevant and one must understand in which contexts (in)equal treatment arises and manifests itself spatially (Dirksmeier et al. 2021).

2.4.3 Spatiality and Social Cohesion

In the context of the discussion on social cohesion, regional differentiation is also attributed significance here. Important seems to be the acknowledgment of spatial scales that hold influence on the interrelationship of social development and space (Dirksmeier et al. 2020). That's why within social and spatial research linking spatial disparities to social cohesion is reinforced

(Dirksmeier et al. 2020). Modern societies see themselves in a constant regulation of their norms and values formed by the opinion of their environment, seen in David Riesman's concepts of the externally-directed person (1968). Modern societies (especially in highly segmented areas) see themselves turning away from former, traditional, morality approaches to a value and belief system towards ideas that are shaped by outside, the environment that surrounds them (Riesman 1968). Space itself can therefore be linked to social cohesion (Dirksmeier et al. 2020). Social cohesion can differ from region to region, showing just how big the abundance of disparities and local differences (Dirksmeier et al. 2020) characterizes contemporary society. These spatial differentiation of social processes and phenomena also affects social cohesion. The regional variance of social cohesion is a profound example of the importance of regionalization during globalization processes (Dirksmeier et al. 2020). With spatial differences having impact on positive or negative experiences and recognitions of inequality (Dirksmeier et al. 2020).

Ensured contact and the intensity of contact in social communities can have an impact on exclusionary attitudes (Sampson et al. 2012), depending on the type of spatiality (dense neighborhoods, etc.). Though intense interaction can mitigate initial exclusionary impulse in regional aspects as to it possibly can reduce stereotypes in dense areas though in bigger cities the high diversity of different orientations proximate threats and discriminatory behavior (Enos 2014). It could as well be possible that contact in dense regions has the exact opposite effect of mutual reinforcement of traditional (and with that heteronormative) beliefs (Dirksmeier et al. 2020; Enos 2014).

As seen in chapter 2.2 and following, spatial differences stand in relation with certain narratives of residents. And to fully understand prejudice, social environment structures must be understood. Theoretical frameworks of prejudices behavior or discriminatory behavior have painted a picture that spatiality plays a role when looked upon these narratives. Complex and tight-knit societies can “engender friction” (Allport 1954/1979 in Dovidio et al. 2005: 228) and therefore heighten prejudices and stereotypical behavior. Allport referred here mostly to North America (precisely the United States), arguing that “diverse societies are particularly vulnerable to intergroup clashes because salient group differences (e.g., in appearance or clothes that identify group memberships)” (Allport 1954/1979 in Esses et al. 2005: 228) are higher or at least more easily visible. As seen today societies in general get more and more complex and divers, spatiality plays a more important role than ever. And within metropolitan areas, differing like suburban surroundings and centered surroundings (the big city), complex differences in attitude can be found (Swank et al. 2013). In general, spatial frameworks under which social cohesion is produced it seems to be important. This then could potentially have wide impact on how

experiences within in- and out-groups are being perceived and whether social cohesion leads to more friction or to a possible improvement of the society in question (Dirksmeier 2021 et al.).

2.5 Sexual Minorities, Prejudice and Social Cohesion

Sexual minorities face prejudice as a “part of a larger cultural complex” (Herek 2009: 470). Meaning, they face prejudice, discrimination and stigma the same as any other group, though the current system or culture is capable of endorsing an ideology that disempowers sexual minorities (Herek 2009). Prejudices against sexual minorities build up on ideologies that create socially shared ideas and roles and conceptions which discredit homosexuality and privilege heterosexuality (Herek 2009). Sexual prejudices are “based on information that individuals derive from their beliefs, affective responses, and past behaviours” (Herek 2009: 447). As pointed out prejudices are highly responsive to their social context (Eagle & Diekmann 2005)

The question is whether social cohesion “inhibit or reduce the negative outcomes of prejudices” (Rutland & Killen 2015: 121) towards sexual minorities? Sexual minorities in urban settings might face higher levels of exclusionary attitudes due to lower social interaction or experience discrimination or violence in densely populated areas as much as their rural counterparts due to a more (dense) conservative population (Boso 2013). Considering that rural places might be very isolating, but if contact can be assured, it might be more feasible that social efficacy can grab more when the contact is ensured in the research. Yet the question remains as to which spatial circumstances tend to fuel an open togetherness or tend to enhance a closed and prejudiced togetherness (Dirksmeier et al. 2020). With the theoretical groundwork mentioned in mind, it can be assumed that space could have an impact on attitude towards (sexual) minorities. It further could be assumed that both urban surroundings have a higher tolerance because of, e. g., the presence of diverse life predicaments, more tolerance of different lifestyles. It though could further be assumed, that rural places are more tolerant of sexual minorities due to potentially higher social and collective efficacy, less overstimulated residents, etc. (see chapter 2.1.1).

3 State of Research

In the following the state of research around sexual minorities is presented, first in an international context (mainly North America and Germany) and finally in Austria, showing compositions as well as context effects of sexual minorities living in a heteronormative society. Experiences of sexual minorities, regardless of their spatial context, vary in a great way and are additionally influenced by other aspects of life, e. g. the socio-cultural status, economic factors, their upbringing. This also goes for societal norms and values on non-normative sexual

orientations. As briefly mentioned in chapter 2.4.1. there are differences in socio-demographics that might indicate an either higher stigma or prejudiced belief system or a rather tolerant one. An overview of what might be influential within attitudes towards sexual minorities, is given in the next chapter. Followed by an insight on research depicting potential spatial differences on how sexual minorities face difficulties in a heteronormative society.

3.1 Sexual Minorities in Research

Thirty years ago, sexual minorities were the most-often victimized social group in North America, mainly because of prejudiced opinions based on negative attitudes and “irrational fears of lesbians and gays” (D’Augelli 1989: 317). Surely this has changed for the better, also on a global scale. With participants of a survey conducted 2020 by the European Union Agency for Fundamental Rights (FRA) saying that in Germany 46 % of prejudice and intolerance against queers has dropped in the last five years and 40 % across all of Europe (FRA 2020).

However, a variety of subtle forms of society still privileges heterosexuals and heteronormativity while “denigrating sexual minorities” (Swank et al. 2013: 252). Seen through “insidious practices” (Frank et al. 2013: 35), as in the absence of equal legal martial rights, assumption-making of heterosexuality, or “hostile environments that monitor and penalize homosexual behavior” (Swank et al. 2013: 256). Continuing data further shows that a majority of sexual minority youths in Europe have already experienced discrimination in at least one area of life by the time they are 15 to 17 years old (FRA 2020, see introduction). In a North American covering sexual minority youth (ages 10-24) and focusing on minimizing suicide rates, 73% of the respondent’s state that they faced discrimination at some point in their lives, either on the basis of their sexual orientation or gender identity (ttp 2021). Additionally, suicidal thoughts have risen over the last three years of sexual minority youth (ttp 2021). The same study shows data of suicide attempts rates which are much lower if the minorities in question find themselves in environments that are accepting and tolerant (ttp 2021). These environments are mainly described as urban areas, as the non-heterosexual-affirming living in rather rural areas youths declare their place of belonging as “very unaccepting of LGBTQ people” (ttp 2021: 1).

Social structure analyses of changing norms and values have usually defined similar key variables that can be used to reliably demonstrate change in societal values, including attitudes toward sexual minorities. As an example, one German study on family guiding principles viewed the value towards recognition of homosexual lifestyles as families (Schneider et al. 2015), with gender being a key differentiator. Evidence shows that women are generally more open and tolerant when it comes to considering gay couples with children as a family (Schneider et al. 2015). There

are other items that can show value and norms of a society with great certainty. High religiosity, e. g., increases the likelihood of strong orientation to entrenched norms (Nave-Herz 2014) and can be associated with a more conservative views of partnerships or family images (Naderi 2014). Another one is the level of education, capable of showing the level of disagreement towards non-normative sexual orientations on a macro level (Hartman et al. 2022). It is generally assumed that higher cognitive abilities and higher education standards, can be an indicator for liberal attitudes and a resignation against stereotypical values and norms (Zick & Rees 2021).

Another socio-demographic can play a role: economic advantage or disadvantage, e. g., state of employment. There is data showing that deprivation in these areas of life can lead to a more intolerant world view (Zick & Rees 2021). Another part is social (dis-)integration, which can either lead to insecurity or security. These items can have different impacts once interconnected, as, e. g., women with high education are thought to be one of the most tolerant and agreeing respondent groups in relation to non-normative life choices (Beham-Rabanser et al. 2019). Another item playing an important role when belief systems or (in-)tolerance are analyzed, is age. Age differences can have strong effects in changing values (also found in the German study by Norbert Schneider, Sabine Diabité and Kerstin Ruckdeschel (2015) with younger respondents being more flexible and open towards non-normative values. While social structure analysis studies are not always directly comparable with each other, it is possible to pinpoint a direction of similarity: high education, women and low religiosity can be seen as socio-demographics that will ensure a rather tolerant value and belief system towards anything outside the norm (Eagly & Diekmann 2005; Hartmann et al. 2022; Beham-Rabanser et al. 2019).

3.1.1 The Urban Bias

Most early scholarly literature and empirical research on sexual minorities is based upon the experience of people living in urban spatial realms (Wienke & Hill 2013; Eldridge et al. 2006). In sexual minority analysis, research often shows a concentration on positive possibilities of sexual minorities living in urban spaces rather than potential difficulties.

Often the reasons are easy to pinpoint: the accessibility of the field or the more open and visible diversity in urban areas, which makes it easier for minorities to be open and less afraid (to be available for research maybe even). Yet even studies that focus on gay life in rural areas tend to emphasize the challenges rather than the chances (Wienke & Hill 2013). They are emphasizing the difficulties of rurality, such as high intolerance, isolation and less social as well as institutional support compared to urban areas, which led to a bias that left empirical research with minimal comprehensive knowledge about sexual minorities in rural spatial realms (Wienke & Hill 2013;

D'Augelli & Hart 1987). Possibly, social perceptions of sexual minorities are heavily influenced by this bias, meaning that within the cultural narratives sexual minorities are often seen as only being accepted and happy in bigger cities. The fact that research concerning sexual minorities concentrates on them living in the city in the first place (Wienke & Hill 2013; Boso 2013) opens the question of an existing research gap, called “urban-bias” (Boso 2013: 562) or “metronormativity” (Wienke & Hill 2013: 1256).

Arguing, that a way of thinking of urban spaces as “quintessential gay space” (Wienke & Hill 2013: 1256) has interfered with a neutral understanding of gay lives in different spatial realms. The urban bias has an impact on sexual minority individuals, erasing their “experiences from public discourse and places the burden on individuals to make positive change for themselves” (Boso 2013: 563). There are even identities build up constructing queerness based on cultural narratives of ‘rural gay’ and the ‘urban gay’, saying that there is a huge difference in where ‘rural gays’ are fitted specific to rurality and them themselves could not see them living in urban areas (Kazyak 2011; Boso 2013). This establishes a particular set of expectations regarding what it means to be queer, which in turn, encourages sexual minorities to come out and assimilate into the *urban gay culture* (Boso 2013). Seemingly missing a wide range of queers actively choosing to stay, live or move to rural places (MAP 2019; Oswald & Culton 2003).

The assumption that all sexual minorities reside in urban areas and feel more comfortable there is (as stated) questionable, considering that within scholarly discourses surrounding sexuality and spatiality, the experiences of rural sexual minorities are often not highlighted or investigated properly. Research concerning gays and lesbians often lack inclusive understandings of the diverse ways in which sexual minorities exist and navigate their identities. (D'Augelli & Hart 1987). Sexual minorities living in either urban or rural areas may experience both: positive and negative effects of spatiality and what comes with it. Therefore, spatial research of sexual minorities need an increasing geographical diversity, detached from cultural narratives linking gay and lesbian sexualities to urban spaces, starting with a focus on research on rural sexual minorities rather than urban sexual minorities below.

3.1.2 Sexual Minorities and Spatial Research

As seen in the preceding theoretical background, spatiality can play a vital role for socialization processes, respectively stereotyping and having prejudices. This is true for attitudes towards minorities, too. Sexual minorities are, like any other group, heavily dependent on the spatial realms of their belonging. Meaning there is a major coherence on place of birth and how life evolves (Wienke & Hill 2013; Meyer et al. 2011). Research shows that minorities actively navigate towards social environments that are thought to be more tolerant “as a way of reducing exposure

to stigma to increase social networks” (Everett 2014: 54), with them knowing that heterosexist discrimination might vary depending on one’s place of residency (Swank et al. 2013; Meyer et al. 2011). The narrative around sexual minorities often reinforces a dichotomy between rural and urban spaces (as seen in the conceptualization, chapter 2.1), with rural areas being portrayed as somewhat unwelcoming for marginalized groups, while urban areas are seen as more tolerant (see above; Kayzak 2011). Empirical research indicates that a significant proportion of sexual minorities are concentrated in urban areas (i.e., Kroh 2017; Wienke & Hill 2013) and that sexual minorities are “often drawn to urban centres” (Boso 2013: 562) due to its provision of a variety of visible community, exemplary queer friendly nightlife (Frank et al. 2012). Urbanity in the gay imaginary often symbolizes “endless possibilities, pleasures and an accepting gay culture” (Boso 2013). And indeed, high proportion of sexual minorities in North America live in urban areas (Wienke & Hill 2013). The same is reflected in Germany, where, according to a socio-economic panel, most sexual minorities still reflect in the capital (Kroh 2017). Only 23 % are residential in areas of less than 100.000 inhabitants, compared to 55 % being residential in bigger cities (Kroh 2017). Cities seem to be having a “seemingly magnetic force” (Boso 2013: 566) on sexual minorities.

Another study of Tsfati et al. (2020), which researched homophobia within the periphery and center areas of Israel, showed experiences of hostile social climate and experiences with homophobia and stigmas more precisely in the smaller regions. Another study conducted in North America, Swank et al. (2013) investigated the impact of heterosexist discrimination with a variety of factors, exploring how the experience of sexual minorities was influenced by spatial location or factors that determine a sociological stance (such as race, class, and gender). However, particular attention was paid to the geographic dispersion of heterosexist experiences. It was noted that within sexual minority communities, strong differences were present, documenting major conditions of exclusionary attitudes, like rental discrimination as well as physical assaults or verbal teasing, differing between residential and metropolitan areas (Swank et al. 2013). When considering spatial factors, the study's findings indicated that "heterosexist events increase when people live in rural and small-town areas" (Swank et al. 2013: 542).

Research on sexual minorities of peripheral areas were internationally already conducted as early as 2003, in rural North America. The sexual minority respondents were asked the greatest part about rural life. Their answers were that in addition to strong relationships, life in a “small community with relative proximity to large cities” (Oswald & Culton 2003) gives them the experience of higher sense of community and social support (Oswald & Culton 2003). For them, the social climate in the periphery is friendlier and more welcoming, as residents have greater

visibility, stronger social cohesion, and an overall closer community and family life. That these positive effects of rural areas potentially apply to minorities as well is often overlooked (Oswald & Culton 2003).

Another North American study by Chris Wienke & Gretchen Hill (2013) viewed the overall sense of wellbeing of sexual minorities in different spatial realms and concluded that the area, here being urban or rural, does not have any “detrimental effect” (Wienke & Hill 2013) on the wellbeing of sexual minorities. This implies that, contrary to the risks often highlighted for gays and lesbians in rural areas, no significant difference was found in their wellbeing compared to their urban counterparts. The variable of wellbeing included items of happiness, health, and satisfaction with work (Wienke & Hill 2013). It hence conducted that for lesbians, residing in urban areas is more negatively affecting compared to their gay (male) counterparts (Wienke & Hill 2013), dependence and significance in the demographic on gender could be identified not only in the attitude towards but also for sexual minorities themselves.

The Movement Advancement Project, called *Where we call home: LGBT People in rural America*, also concentrates on sexual minorities living in rural areas of North America, showing challenges and potential (MAP 2019). Based on the narrative that rural areas have a higher probability of discriminating against queers (see 2.3), the project induces different categories, saying that the structures of rural areas are able to amplify the effects of rejection. The project focused on identifying the issues that affect sexual minorities in rural areas, which resulted in higher ripple effects and fewer alternative options, as well as fewer support systems. Additionally, rural areas face challenges of geographic isolation and are usually less exposed to legal protections (MAP 2019). But these structures of higher ripple effects could also possibly heighten acceptance. The MAP points out that rural America is in fact a chosen “home to many LGBT people” (2019: 7), counterplaying the stereotypical narrative of queers only being comfortable living in megacities. Manchester’s gay village being a prime example here (Binnie & Skeggs 2004). The study further emphasizes the positive aspects of rural gay life with having gay respondents saying that the benefits of rural living mitigate the challenges that they are faced with (MAP 2019). Some of the strengths of rural (dense) areas could be “ripple effects” (MAP 2019: 9), with a community being so interwoven that acceptance (though possibly also rejection) can spread more easily from one area of life into another. The research tried to show that “not only do [sexual minorities] live in rural America, but many of them want to and enjoy living in rural America” (MAP 2019: vi) with roughly three to four million sexual minorities living in peripheries. The project tried to shine a light on the chance of rurality amplifying acceptance and minimizing rejection (MAP 2019). With portraying contact within rural communities playing a vital role and having a big impact and

central for rural life (MAP 2019), as well as increased visibility and interconnectedness. With individuals saying that a rural community gives them space to develop healthy identities and healthy surroundings (MAP 2019). Such analyses seem to contradict the notion that sexual minorities in urban areas are more well off and seemingly happier compared to their rural counterparts (Wienke & Hill 2013).

3.2 Sexual Minorities in Austria

In Austria, sexual orientation is protected in the world of work, but not in all areas of life. Austrian government website display gaps in protection against discrimination, secured under the federal law on equal treatment (“Gleichbehandlungsgesetz” (GAW 2023)), indicating difficulties withing discrimination based on sexual orientation. There are small to no legal consequences when a sexual minority is harassed outside of the work world, only when the intimidation or insult takes on great features. The question that arises here is who defines this intensity and the threshold in cases like these offenses is high (GAW 2023). Austria meets the minimum of EU standard here and marks one of European laggards, when it comes to prosecuting discrimination laws to protect sexual minorities (GAW 2023).

Homosexual couples have the possibility of a registered partnership up from 2020 and can adopt since 2016 (Berghammer & Schmidt 2019). As of the end of 2018, regulations on marriage, which differed up until then for homosexual and heterosexual couples, were repealed, making it possible for same-sex couples to legally get married (Berghammer & Schmidt 2019). The survey *Queer in Vienna* (IHS 2015) concluded that 48% of the gay and lesbian participants were not fully outed at work, and that rigid internal hierarchies often delay or prevent coming out. 14% of the respondents have felt discriminated against at work in the last twelve months or have been bullied because of their sexual orientation or gender identity. The next few studies concentrate on more in-depth research conducted around sexual minorities in Austria in the last few years. Starting with an overview of one of the first commissioned studies concerning this.

3.2.1 An Overview from the Eurobarometer

One of the first studies reliably researching sexual minorities in Austria and the attitudes towards sexual minorities, was provided by the Eurobarometer study, conducted on behalf of the European Commission (European Commission 2007). In 2007, 43 % of the Austrians population believed that sexual discrimination was still very much anchored in society (European Commission 2007). Around 56 % believed, that non-normative sexual preferences were not to be discussed, and 63 % believed that for homosexuals it would be difficult admitting their sexual orientation in the workplace (European Commission 2007; Schönherr & Zandonella 2017). In a

follow-up survey two years later researching the experience of discrimination, one fourth (43 %) of the respondents had experienced discrimination (European Commission 2009; Schönherr & Zandonella 2017). In another survey, three years later, 37% of respondents in Austria believed that sexual discrimination was still very much anchored in society, compared to 43 % in 2007 (European Commission 2012; Schönherr & Zandonella 2017).

This positive trend was reversed in the 2015 Eurobarometer survey (European Commission 2015): in 2015, 57% of all Austrians suspected discrimination against sexual minorities to be widespread. This negative trend was not only seen in Austria, but also over the whole EU survey results. However, the increase could be due to society being more sensitive towards discrimination and harassment (European Commission 2015). Though 47% of Austrians would still have a problem with a gay couple kissing or holding hands in public, while only three out of ten would have a problem with a heterosexual couple. In most attitudes towards sexual minorities, Austria was in line with the European average, though brought up the rear when compared with otherwise socioeconomically similar partners of the EU, such as Belgium, Denmark, France or Great Britain (European Commission 2015; Schönherr & Zandonella 2017). In the latest Eurobarometer survey of 2019, the percentage of Austrians believing discrimination based on sexual orientation is widespread, has sunken again, to 46 % (European Commission 2019). Comparing other study results of Eurobarometer Austria 2015 to 2019, the percentage of Austrians in favor of legal equality for sexual minorities stayed the same (70 %). The attitude towards the statement if a same-sex relationship is not reprehensible has decreased slightly, from 67 % in 2015 to 65 % in 2019 (European Commission 2019). The attitude of being in favor of same-sex marriages rose by 4 %, from 62% to 66 % in 2019 (European Commission 2019).

3.2.2 “A long way to go for LGBTI Equality”

Sexual minorities in Austria still face a significant degree of stigma and discrimination, despite the country's reputation for being relatively progressive in matters of LGBTQ+ rights, says one of the largest recent studies on sexual minorities (FRA 2020). *A long way to go for LGBTI equality*, a study of European Union Agency for Fundamental Rights, found out that nearly one-third of sexual minority individuals in Austria report they experienced discrimination in the previous year (FRA 2020). Research indicates that experienced discrimination is happening in a range of areas, including employment, healthcare, or access to housing (not being granted a rental contract) (FRA 2020). In addition to discrimination, sexual minorities in Austria may also face physical violence and harassment, particularly in public spaces (FRA 2020). About half of sexual minorities questioned the survey have experienced discrimination or harassment based on their sexuality in the past year (in 2019) all over Europe, in Austria the figures aligned with 48% (FRA

2020). However, the survey also showed that not all sexual minority groups experience discrimination to the same extent and in the same way.

Women, who consider themselves part of a sexual minority (lesbians and bisexuals, thus as well trans-persons), are being discriminated intersectional, because of their gender as well as their sexual orientation (FRA 2020). It is interesting to note that in the Eurobarometer survey in the same year, 2013, when Austrians were asked about sexual discrimination, the response rate was 37%. Whereas in another survey of FRA, conducted in the same year, 2013, to ask sexual minorities on the prevalence of discrimination, 75% assumed that discrimination was prevalent in Austria. Almost twice as many respondents as in the Eurobarometer study. This could be related to the fact that the *self-involved* group experiences a higher sensitivity for the topic (European Commission 2013; FRA 2013).

3.2.3 Attitude towards Same-Sex Partnerships

Another, more recent, study published through Julian Aichholzer et al. (2019), looked at overall changes in values in Austria from 1990 to 2018. A part of the publication, conducted through Caroline Berghammer & Eva-Maria Schmidt, researched changes in values in regard to same-sex parents. The study was based on the European Value Survey (EVS) in Austria. Overall, the acceptance for same-sex couples rose over the span of 1990 until 2018. With other existing studies showing that a consent for sexual relations between adults of the same sex increased significantly in recent decades (Berghammer & Schmidt 2019). The present study shows differences in the acceptance within homosexual individuals and same-sex couples as parents (Berghammer & Schmidt 2019). It was further visible that a higher education spoke for generally higher acceptance towards homosexuals as parents (Berghammer & Schmidt 2019), with 68 % acceptance seen in respondents with high education versus 41 % acceptance seen in respondents with lower education (compulsory education (Berghammer & Schmidt 2019)). This was shown of EVS data year 2018, which asked the attitude towards the statement same-sex couples are just as good parents as other couples (Berghammer & Schmidt 2019). To this, not only higher educated people seem to be having higher acceptance towards same-sex couples (as parents), the same was visible within gender differences, where women showed higher acceptance than men and younger respondents were more open and of acceptance than older ones (Berghammer & Schmidt 2019).

These results are largely confirmed by closely related research, conducted through Martina Beham-Rabanser, Caroline Berghammer and Ulrike Zartler (2019), who analyzed data of the Social Survey Study in Austria (SSA) and International Social Survey Program (ISSP), published within a collective work on social structure and changing values in Austria. The research shows

differences in gender roles and partnership values from 1986 to 2016 (first and last conduction of SSA, partly supplemented by the ISSP⁴), saying that Austria still promotes comparatively with the rest of EU a rather conservative view of the family (Beham-Rabanser et al. 2019).

It, i. a., revealed changes in attitude towards homosexual partnerships over the last 30 years (Beham-Rabanser et al. 2019). It showed that an increasing proportion of the population has a more positive attitude towards same-sex partnerships, comparing values within said timeline. Exemplary in year 2016 around two-thirds of Austrians affirmed with the acceptance of same-sex partnerships (Beham-Rabanser et al. 2019). Though, in small contrast do Berghammer & Schmidt (2019), the data viewed of the SSA and ISSP only showed minor differences in gender. Whereas the divide between age groups was highly visible (as seen in Berghammer & Schmidt 2019). Interestingly enough, the general trend of the results, the increase in acceptance, was somewhat countered by the age groups showing a higher gap at least within the consideration of age over time (Beham-Rabanser et al. 2019). The younger ones (30 years and under) may have become more tolerant more quickly, whereas the older ones (70 years and up) did not show the same level of change in tolerance (Beham-Rabanser et al. 2019). Though the overall acceptance increases within each age group. The level of education on the other hand, shows a similar picture to Berghammer & Schmidt (2019), with higher educated people being rather tolerating and accepting in comparison to less educated people (Beham-Rabanser et al. 2019). Both studies show that the tolerance towards same-sex partnerships increased over time and that the attitude towards same-sex couples is more accepting from 1986 to 2016.

3.2.4 Attitude towards Sexual Minorities in the Workplace

A study conducted through the SORA Institute for Social Research and Consulting in Vienna on behalf of the Chamber of Labor for Vienna (*AK Wien*), researched more precisely the work situation of sexual minorities in Austria (Schönherr & Zandonella 2017). The results were based on a survey of people in Austria who identify as either lesbian, gay, bisexual as well as transsexual and/or intersex. The results are not statistically representative (due to the choice of method), but can possibly be seen as a small reflection of personal experiences of sexual minority employees in Austria (Schönherr & Zandonella 2017). They summarized a significant rise in the public of overall acceptance and tolerance towards sexual minorities (Schönherr & Zandonella 2017). However, research reflecting the experiences in workplaces depict a picture difficulties and disadvantages, in assessment of work and in the work environment itself (Schönherr & Zandonella 2017). About one fifth of the respondents stated, that marriage or birth (including adoption) congratulation are only customary among heterosexual colleagues (Schönherr &

⁴ The SSA was conducted in 1986, 1993, 2003, and 2016, and the ISSP in 1995, 1999, and 2013.

Zandonella 2017). And around one quarter had experienced insults, harassment, threats, and blackmail, or had negative experiences when using communal facilities (Schönherr & Zandonella 2017).

Another, more recent, large-scale study commissioned by the Chamber of Labor for Vienna (*AK Wien*), on general experiences of discrimination in Austria showed that sexual minorities (here gays, lesbians, or bisexuals) were 73% likely to have experienced discrimination in the last three years. Which is a very high percentage compared to the FRA study results, where only one-third of sexual minority individuals in Austria report they experienced discrimination, having in mind that the timeline was only one year compared to three years (Schönherr et al. 2019; FRA 2020). Compared to heterosexual respondents, they are more than three times as likely to have experienced worse treatment in at least one of the four areas of life examined (Schönherr et al. 2019). The study was conducted within a representative telephone survey and viewed the minorities experiencing unequal treatment, discrimination, and degradation in the areas of work, housing, medical services and education (Schönherr et al. 2019). About 2,300 people, aged 14 to 65, participated in the survey. The study asked respondents questions about their own experiences of discrimination based on socio-demographics (such as gender, age or ethnicity) as well as their sexual orientations (Schönherr et al. 2019).

4 Research Questions and Hypotheses

As seen in exciting research, there are changes in attitude towards sexual minorities visible over the last decades in Austria (Beham-Rabanser et al. 2019). And as depicted in the theoretical background, spatiality can play a role when looked at these attitudes towards minorities. This includes traditional values, stimulation status of the mind, overall pace in life, community ties, and preconditions in normative beliefs. Prejudices towards sexual minorities can thus possibly be steered and influenced, maybe even determined, by space. Though further (structural) components need to be considered.

There are differences in socio-demographic composition, e. g. people in rural regions are on average more religiously affiliated (Belanche et al. 2021). There are hypotheses, such as the education hypothesis, saying that an individual's level of education can state the individual's liberal attitude (education hypothesis, see Hartmann et al. 2022). Generally assuming that higher levels of education come with higher cognitive abilities, which lead to higher stakes of questioning naturalized stereotypes (such as heteronormative oriented stereotypes) (Hartmann et al. 2022). Or the religiosity hypothesis, where religious individuals are expected to legitimize traditional beliefs through their institutionalized orientation towards the religion or the church

(Hartmann et al. 2022). Also, women with higher levels of education are associated occupational aspirations, being interested in egalitarian gender roles, etc. (Hartmann et al. 2022).

So, although the research conducted so far provides a broad picture of sexual minorities, there are still gaps that have not been taken into account. Structural factors of space have been less integrated to date. It is also apparent that there is a lack of such research in Austria. This is where this research tries to fill in existing gaps.

The following hypotheses will consider this, as well as the theoretical background and current research stated and convert them into suppositions around the topic of attitude towards sexual minorities. Spatiality will be the main orientation, with social cohesion (in the form of intensity of contact within social interactions) as well as key variables that were found in the state of research, such as gender, level of education and age, will be used to produce hypotheses around the topic of interest. To remember, the guiding research questions are:

Does place of residence matter for attitudes towards sexual minorities?

Does the intensity of contact matter for attitudes towards sexual minorities?

Using the overview that has now been given of the theoretical background as well as the state of research, the main hypotheses guiding this work will be:

- H₁ Place of residence is related to attitudes towards gay men and lesbians.
- H₂ The tolerance towards gay men and lesbians rises over time.
- H₃ The intensity of contact is related to attitudes towards gay men and lesbians.
- H₄ The higher the intensity of contact the higher the tolerance.
- H_{4a} The higher the intensity of contact in urban places of residence the higher the tolerance towards gays and lesbians.
- H_{4b} The higher the intensity of contact in rural places of residence the higher the tolerance towards gays and lesbians.

5 Data and Method

An abundance of quantitative analyses, whose potential is not even close to being exhausted and which are increasingly available open source, gives great opportunity to use sufficient and comprehensive data already existing for own analyses. Additionally, within the context of qualification, independent data collection and generating own information justifying the survey, is mostly outweighed of disadvantages and limitations (Hartmann et al. 2022).

A secondary analysis is used in the following. While the data source used is not primarily focused on minority studies, the comprehensiveness and richness of the data could provide a suitable foundation for the research conducted here. The usage of already existing data as written above has the advantage of approximating representativeness and allowing conclusions regarding analysis results on the Austrian population. The following chapter presents the data source in depth, gives an overview of the variables used and their recoding, as well as an overview of the sample and a description of the research method.

5.1 Data Source and Study Design

The source of data will be the European Social Survey (ESS), where the main objective is to show changes within social structures, relations, or attitudes in Europe and how to interpret social and political change within Europe (European Research Infrastructure Consortium (ERIC) (ESS ERIC 2023)). The ESS is a cross-national survey that has been conducted in Europe every two years since 2002 (ESS ERIC 2023). For this analysis, the Austrian sub-study is used, conducted throughout the years by the research group *European Integration* at the Institute for Advanced Studies (IHS) in Vienna (ESS 2018). The ESS questionnaire was conducted in Austria as a traditional paper questionnaire (PAPI) version until 2010. Since wave seven, year 2014, the survey has been mainly computer-assisted personal interviewing (CAPI), or computer-assisted mobile interviewing (CAMI) with face-to-face interviews (ESS ERIC 2023). With one exception for year 2020, where data was conducted with the help of a self-administered paper questionnaire, delivered by mail or fax and supplementary questionnaire then being completed by the respondents themselves (ESS ERIC 2023). The Austrian questionnaire is in German, thus based on the (originally English) ESS source questionnaire (ESS ERIC 2023). Data-specific information is collected that relates to individual countries, such as political parties or state-recognized religions. Likewise, differences in the education system and civil law matters are recorded that correspond to the specific requirements of the respective country.

The sample of the ESS in Austria represents all persons, 15 years old and older, living in Austria, unaffected by their citizenship, nationality or first language (ESS ERIC 2023). The data is freely accessible through the ESS Data Portal. Individuals are selected through a rigorous process of random probability which changes slightly over the years, with a minimum to have to include 1,500 individuals per survey (ESS ERIC 2023). In the respective ESS surveys, different social questions are examined each year, in addition to the basic measurements persisting every year (ESS ERIC 2023). The measurements used for the thesis analysis are present in all waves, which is why the data used here can be considered a trend study, making it possible to observe social change processes in a longitudinal study. Changes from the entire sample can be related to a

representation of the population however, it is not possible to derive change at the individual level. The missing values in this data set were consistently below 10 % and were therefore removed. The data used within the descriptive analysis will be weighted through the post-stratification weight of the ESS which, in contrast to purely design-based weighting variables, provides additional information on reductions in sampling error as well as possible nonresponse bias (ESS ERIC 2023a). The post-stratification weights are adjusted to fit distributions of cross-classifications of socio-demographics (age group, gender, education). They are adjusted to fit population and marginal distributions for each region and country, obtaining the distributions from the European Union Labour Force Survey (ESS ERIC 2023).

5.2 Measurements

Sociological research generally assumes a correlation between different social markers (see education hypothesis). It assumes that e. g., heteronormative ideas have an influence on society, though they are also influenced by individuals' socialization, social positions, or their habitual affiliation – an ultimately sociological axiom (Hartmann et al. 2022). The following section analyzes these potential relationships among characteristics important for this work. Derived from the theoretical background and state of research, and aligned with the research question guiding this elaboration, variables (one dependent and several independent ones) were identified regarding the topic of spatiality as a contextual phenomenon related to attitude towards sexual minorities. The variables were utilized and recoded according to the criteria of the research question and were put into relation to one another in the analysis.

5.2.1 Dependent Variable

The dependent variable will be attitude towards sexual minorities operationalized through the variable whether gays and lesbians should be free to live life as they wish. The participants were asked whilst “Using this card, please say to what extent you agree or disagree with each of the following statement: *Gay men and lesbians should be free to live their own life as they wish*”. With response categories of “Agree strongly”, “Agree”, “Neither agree nor disagree”, “Disagree” and “Disagree strongly”. “Refusal*”, “Don’t know*”, “No Answer*” (*=Missing Values). Within the analysis, attitude will be used as a unification for the grade of agreement and will be used interchangeably with the term agreement.

5.2.2 Independent Variables

The main independent variables will consist of the respondent's description of their place of residence and their contact within their community. Place of residence is asked through: *Which*

phrase on this card best describes the area where you live? in the survey. With response categories of “A big city”, “Suburbs or outskirts”, “Town or small city”, “Country village”, “Farm or home in countryside” and “Refusal*”, “Don’t know*”, “No Answer*” (*=Missing Values).

Followed by the variable trying to showcase social cohesion. This will be understood as the intensity of contact of the respondents in their realms of belonging, shown through social activity of the respondent within their community. The questionnaire item is: *Compared to other people of your age, how often would you say you take part in social activities?* The response categories are “Much less than most”, “Less than most”, “About the same”, “More than most”, “Much more than most”, “Refusal*”, “Don’t know*”, “No Answer*” (*=Missing Values).

Important socio-demographics included in the analysis will be gender, distribution of age, level of education of the respondent, belonging to religion or denomination as well as the overall impact of time, measured through the roughly 15 years of ESS surveys.

5.2.3 Recoded Variables

For easier usage in the descriptive analysis, several variables are recoded (see Table 1). The new variables mostly combine response categories and leave out missing values. The variable describing education had to be customized to fit into ESS1 to ESS4 due to questionnaire difference within the survey. The recoding was adjusted regarding seized new measurements of educational attainment in the ESS up from 2014. The new harmonized variable was built with reference to “Construction of EISCED based on EDULVLB” found in the Appendix A1: Education, ESS7 - 2014 ed. 3.2, a construction with remeasuring ISCED-11 into ES-ISCED from ESS (ESS 2014). Table 1 will show the recoding done. In the multivariate part of the analysis, non-numeric and non-binary original independent variables were coded into dummy variables to fit the regression analysis.

Questionnaire	Value and Category	Recoded Value and Category
Gay men and lesbians should be free to live their own life as they wish	1 Agree strongly 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Disagree strongly 7 Refusal* 8 Don't know* 9 No answer*	1 Disagree strongly (5) 2 Disagree (4) 3 Neither agree nor disagree (3) 4 Agree (2) 5 Agree Strongly (1) 7 NA (7, 8, 9)
Which phrase on this card best describes the area where you live?	1 A big city 2 Suburbs or outskirts 3 Town or small city 4 Country village 5 Farm or home in countryside 7 Refusal* 8 Don't know* 9 No answer*	1 Urbanity (1, 2) 2 Urban-Periphery (3) 3 Periphery (4, 5) 7 NA (7, 8, 9)

Compared to other people of your age, how often would you say you take part in social activities?	1 Much less than most 2 Less than most 3 About the same 4 More than most 5 Much more than most 7 Refusal* 8 Don't know* 9 No answer*	1 Less than most (1,2) 2 About the same (3) 3 More than most (4,5) 7 NA (7, 8, 9)
	0 Not possible to harmonise into 5-level ISCED 1 Less than lower secondary education (ISCED 0-1) 2 Lower secondary education completed (ISCED 2) 3 Upper secondary education completed (ISCED 3) 4 Post-secondary non-tertiary education completed (ISCED 4) 5 Tertiary education completed (ISCED 5-6) 55 Other 77 Refusal 88 Don't know 99 No answer	1 Lower education (ISCED 0-2) (0, 1, 2) 2 Medium education (ISCED 3-4) (3, 4) 3 Higher education (ISCED 5-6) (5) 7 NA (77, 88, 99)
What is the highest level of education you have achieved? (ESS5-9)	0 Not completed ISCED level 1 113 ISCED 1, completed primary education 129 Vocational ISCED 2C < 2 years, no access ISCED 3 212 General/pre-vocational ISCED 2A/2B, access ISCED 3 vocational 213 General ISCED 2A, access ISCED 3A general/all 3 221 Vocational ISCED 2C >= 2 years, no access ISCED 3 222 Vocational ISCED 2A/2B, access ISCED 3 vocational 223 Vocational ISCED 2, access ISCED 3 general/all 229 Vocational ISCED 3C < 2 years, no access ISCED 5 311 General ISCED 3 >=2 years, no access ISCED 5	1 Lower education (ISCED 0-2) (0, 113, 129, 212, 213, 221, 222, 223) 2 Medium education (ISCED 3-4) (229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423) 3 Higher education (ISCED 5-6) (510, 520, 610, 620, 710, 720, 800) 7 NA (7777, 8888, 9999)
	312 General ISCED 3A/3B, access ISCED 5B/lower tier 5A 313 General ISCED 3A, access upper tier ISCED 5A/all 5 321 Vocational ISCED 3C >= 2 years, no access ISCED 5 322 Vocational ISCED 3A, access ISCED 5B/ lower tier 5A 323 Vocational ISCED 3A, access upper tier ISCED 5A/all 5 412 General ISCED 4A/4B, access ISCED 5B/lower tier 5A 413 General ISCED 4A, access upper tier ISCED 5A/all 5 421 ISCED 4 programmes without access ISCED 5 422 Vocational ISCED 4A/4B, access ISCED 5B/lower tier 5A 423 Vocational ISCED 4A, access upper tier ISCED 5A/all 5	
	510 ISCED 5A short, intermediate/academic/general tertiary below bachelor 520 ISCED 5B short, advanced vocational qualifications 610 ISCED 5A medium, bachelor/equivalent from lower tier tertiary 620 ISCED 5A medium, bachelor/equivalent from upper/single tier tertiary 710 ISCED 5A long, master/equivalent from lower tier tertiary 720 ISCED 5A long, master/equivalent from upper/single tier tertiary 800 ISCED 6, doctoral degree 5555 Other 7777 Refusal 8888 Don't know 9999 No answer	
What was your main activity the last 7 days?	1 Paid work 2 Education 3 Unemployed, looking for job 4 Unemployed, not looking for job 5 Permanently sick or disabled 6 Retired 7 Community or military service 8 Housework, looking after children, others 9 Other 77 Refusal* 88 Don't know* 99 No answer*	1 Employed (1) 2 Unemployed (3, 4) 3 Care work (8) 4 Retired (6) 5 Other (2, 5, 7, 9) 7 NA (77, 88, 99)
Do you consider yourself as belonging to any particular religion or denomination?	1 Yes 2 No 7 Refusal* 8 Don't know* 9 No answer*	1 Yes (1) 0 No (2) 7 NA (7, 8, 9)

Table 1: Recoding of original variables

5.3 Sample Overview

Round	Year	Observations	Response Rate
1	2002	2257	60.4
2	2004	2256	62.4
3	2006	2405	64.0
4	2008	2255	62.3
5	2010	2259	59.6
6	2012	/	/
7	2014	1759	51.6
8	2016	2010	52.5
9	2018	2499	50.8
10	2020	2003	33.7

Table 2: Characteristics of ESS Austria in the years 2002 until 2020

Table 2 shows the response rate of the sample overview given in percent (%). The European Social Survey conducted in Austria is slightly incomplete, with Round six, the year 2012 of the survey missing completely. The year 2020 has a significantly low response rate, as the survey was conducted through a PAPI mode of collection (with reference to the COVID-19 pandemic; see 5.1) and will therefore, as well as the year 2012, not be included in this work. Otherwise, the observations were consistently over 1750 items and the response rate was never less than 50%, which is the minimum number of 1,500 respondents per survey per year.

The following table, Table 3, shows a sample overview, with frequencies of important socio-demographics concerning the distributions of measurements over the years. As visible, the (binary) gender distribution is relatively constant and balanced over the years. Generally, most respondents were in the age group of 35- to 49-year-olds or 15- to 34-year-olds, with one exception visible in the year 2018. Most of the respondents reside in country villages and have a medium level of education, with only a minor percentage having a high level of education (highest percentage is 16 % over the years, seen in 2010). Most of the respondents over the years are in active employment, with a rather high percentage of the respondents responsible for care work most years (up to 21 %) or being already retired (up to 25 % in 2008). The distribution of religious affiliation fits the picture of rather high religiosity within Austria, depicted in chapter one, as an average of 70 % was seen over the survey years. Additionally, the religious affiliation rose over the years, going from 70 % with ups and downs, with the highest percentage visible in the year 2018 of 74 %.

	2002	2004	2006	2008	2010	2014	2016	2018
Gender								
Women	54	54	54	55	52	52	55	54
Men	46	46	46	45	48	48	45	46
Age								
15–34	29	35	33	33	35	23	25	22
35–49	32	32	32	27	26	27	25	25
50–64	24	20	21	22	20	25	29	27
65+	16	13	14	18	17	22	20	26
Place of Residence								
A big city	25	25	18	26	22	22	22	23
Suburbs or outskirts of big city	11	7	7	8	8	13	7	9
Town or small city	23	28	36	31	26	24	23	25
Country village	38	36	35	32	37	34	42	40
Farm or home in countryside	3	5	4	3	7	7	5	4
Highest Level of Education								
Lower education	32	27	23	17	18	22	15	18
Medium education	56	65	69	69	66	63	70	67
Higher education	13	8	8	14	16	15	15	15
Employment status								
Employed	58	55	58	54	62	43	48	52
Unemployed	5	4	1	2	2	4	5	4
Care Work	17	18	21	16	9	21	9	13
Retired	13	12	9	12	15	18	23	25
Other	8	19	11	16	20	15	22	6
Belonging to Religion/ Denomination								
Yes	70	72	72	67	63	72	73	74
No	30	28	28	33	37	27	27	26

Table 3: Sample overview ESS Austria

5.4 Research Method

The research design will use the data provided through the ESS. It will include a descriptive analysis of cross-tabulations and frequency counts to get a first impression of the data. The items that are used for the analysis are drawn out of the theoretical considerations and existing empirical results mentioned. It will be a statistical induction, which refers to conclusions made from the selected sample to the population. As the research design will be X centered around the variable of attitude towards sexual minorities, certain independent variables will be tested, as well as relevant control variables. The focus will be the investigation of the interrelation between the variables of interest. First, within an objective of descriptive analysis, distributions of essential variables will be represented to get an overview of the measurements and their properties. Descriptive statistics are used here to reduce complexity (Hartmann et al. 2022) and will illustrate first impressions about the data landscape and its measurements. They will describe the sample with frequency counts and cross-tabulations for the data and will include a time comparison between ESS waves from 2002 to 2018. Important to have in mind is that with relatively large samples, even slight differences become significant, which does not necessary state the importance of the items and measures. For this, the Cramers V was included, to gain further insights into the corresponding measures. Cramers V captures the strength of correlation, differing either between 0 and 1 (for nominally scaled variables) or between -1 and 1 (for ordinal or metrically scaled variables) (Hartmann et al. 2022).

For the multivariate statistic the method of multiple regression is used, a statistical method to analyze the relationship between a dependent variable and several independent variables. To be able to perform a multiple regression analysis, the multicollinearity must be relatively low, i. e., the independent variables must not be too dependent on each other. The regression model is constructed to provide the best prediction for the dependent variable based on the independent variables. It tries to estimate the change in attitude for a one unit change in each independent variable, while holding all other independent variables constant. Therefore, it would be able to determine what relationship the variable has towards the attitude statement. Within the regression model additional variables, control or third variables, will be successively added to show potential mediator effects and give information on estimators for correlations. These control or confounder variables, considered to have an influence on the main independent and dependent variables, are taken from the theoretical and research considerations, seen already in the descriptive statistic. This includes the main independent variables, such as place of residence and social activity, as well as gender, religious affiliation, level of education and age. The multivariate statistic will also be used to point out correlations between approximately 15 years of data. A moderation analysis will be added, different to the mediating analysis, to test possible significance of interaction effects by a moderator. Interaction variables are a multiplicative term introduced when one can assume that that a purely linear model without interaction effects does not represent the relationships sufficiently (Hartmann et al. 2022). The moderation analysis will, with the other confounder/ independent variables, be included in another regression model (Hartmann et al. 2022). Including confounder variables as well as moderating effects almost always increases the quality of the model, as the coefficients of determination R^2 increase. Having the advantage of controlling various independent variables simultaneously (Hartmann et al. 2022). Qualitative data, such as religious or denominational affiliation, were formed into dummy variables to also be included in the analyses. During the multivariate analysis, a basic model was successively extended by additional variables. The variables for the multivariate analysis were prefiltered, collected from the sample, with only the ones relevant for the hypotheses used and which were assumed to be connected on the basis of mentioned scientific theories and state of research. The significance of individual effects on dependent variable will then be particularly relevant in the interpretation. Significant coefficients are divided into low to highly significant according to the magnitude of the calculated p-value and marked by asterisks: * for $p < 0.05$, ** for $p < 0.01$, and *** for $p < 0.001$ (Hartmann et al. 2022). Only if variables are significant an effect on the population can be assumed with certain probability. All analyses will be conducted using the statistical software R.

6 Results

In the following, descriptive analyses of important variables will be shown combined with inferential statistical methods to examine the extent of prejudiced attitude towards sexual minorities (represented through gay men and lesbians) in different spatial groups. And, in a second step, social cohesion, in the form of intensity of contact (represented through intensity of social activity compared to others of same age) will be put into relation to attitude towards sexual minorities as well as place of residence and attitude towards gay men and lesbians. Ultimately the attitude towards sexual minorities will be placed into relation to important socio-demographics, relevant for the research, with possible influences on the tolerance or intolerance towards sexual minorities. These were extracted from the state of the research (such as age, level of education, or gender). the univariate part is complimented by the multivariate statistical analysis, which consists of a multiple linear regression analysis in which relevant interaction effects and significant coefficient values are revealed.

6.1 Descriptive Statistics

The main focus of sociological data analysis is investigating the relationships between the variables of interest. In most cases, only little sociological imagination is required to assume relatively complex and manifold interrelationships. Beliefs about conservative images of sexuality have an influence on behavior on the one hand, and on the other hand are influenced by certain social situations, class position, socialization, or social status – drawing the line to the mentioned sociological axiom (Hartmann et al. 2021).

The first step in investigating the relationship of the variables of interest is the descriptive analysis. Within the descriptive part, changes in the attitude towards sexual minorities over time will be shown within a simple frequency table for all waves. Then, the main independent variables will be put into relation to attitude and will be described. Ultimately mentioned socio-demographics will be analyzed and put into relation to attitudes towards sexual minorities.

In order to optimize the number of cases put to analysis and to keep the metric at the mentioned four-point scale (of agreement), the ordinaly scaled dependent variable will mostly be shown within an average form of mean indexes.

6.1.1 Descriptive of the Attitude

The first frequency distribution of attitude towards sexual minorities is shown through a stacked bar graph (see Figure 1), indicating the different frequencies of response categorizes in order of agreeing with the statement: *Gay men and lesbians should be free to live life as they wish*. The characteristics of values of agreement are being defined as seen in Tab. 1, with “1”= “Disagree

strongly” and “5”= “Agree strongly”. In the ESS waves analyzed, from 2002 until 2018, one could assume that most of the respondents strongly agree with the statement that gay men and lesbians should be free to live life as they wish. The frequency of the response rate of this response category differs only within 7 percentage points over 2002 until 2016, from 33 % to 41 %. Exceptions are seen in 2018, where 45 % agree strongly with the statement, and in 2016 where the highest response rate overall refers to "Agree". The highest frequency of agreeing strongly with the statement is visible in year 2018 with 45 %. The highest frequency of aversion towards the statement is seen in 2010, with 10 % of the respondents saying they disagree strongly. The lowest is seen in 2018 with 3 %. An overall trend of increasing acceptance is visible through the two response categories of agreeing (“4” and “5”). It could be assumed that rejection towards sexual minorities, in this case gay men and lesbians, has decreased in the last 16 years.

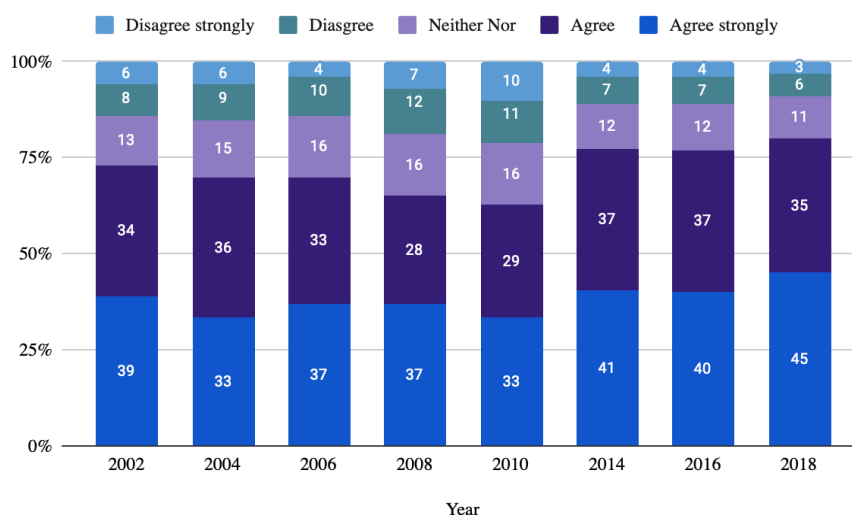


Figure 1: Distribution of attitude towards sexual minorities over all waves

Figure 2 shows the mean value in relation to agreement towards the statement over all waves. The mean value is located around the expression “4” which equals to agreeing with the statement. Only a minor escape is visible in 2010, where the mean value falls to 3.63. The presumption towards increasing acceptance of gay men and lesbians over the course of the survey years, from 2002 until 2018, is visible.

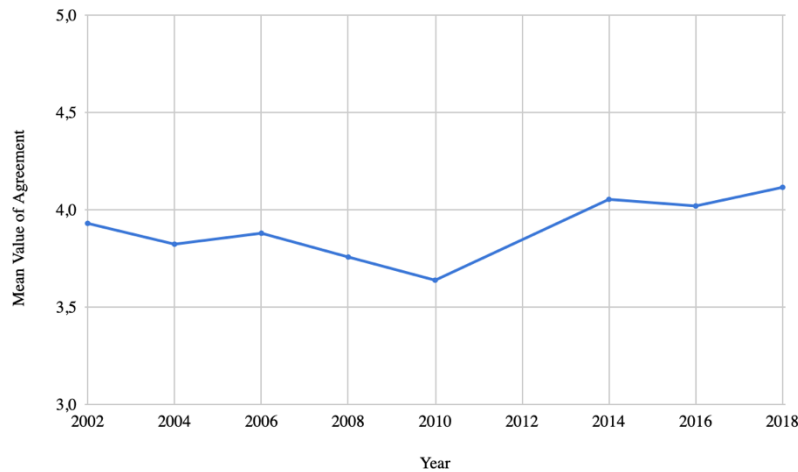


Figure 2: Changes in attitude towards sexual minorities over all waves

6.1.2 Descriptive of the Place of Residence

In a second step the main independent variable, place of residence, will be analyzed. The original variable will be used in the first frequency table, with the recoding following in a second step of the descriptive statistical measures. The recoded variable is further going to be used when dependent and independent variables are placed in relation to each other to make the results more useful in relation to the research question. The following table shows the distribution of residence over all waves.

Place of Residence	2002	2004	2006	2008	2010	2014	2016	2018
A big city	25.0	25.1	18.1	25.1	22.3	21.9	21.9	22.8
Suburbs or outskirts of big city	11.2	6.8	6.7	8.2	7.7	13.3	7.0	8.7
Town or small city	22.8	28.3	35.6	30.8	26.3	23.7	23.4	24.6
Country village	37.8	35.8	35.3	32.4	37.1	34.0	42.5	39.7
Farm or home in countryside	3.2	4.0	4.3	3.2	6.6	7.1	5.1	4.2

Table 4: Distribution of places of residence over all waves

Evidently, seen in Table 4, most of the respondents live in a country village over all waves, with one exception seen in 2006 where most of the respondents said the area where they live would be best described as a town or small city. On average, one third of the respondents live in a large city.

Figure 3 shows the changes in the mean value of attitude according to the three residential groups, recoded into three under segments of places of residence (see Table 1), over all waves. Figure 3 shows that the mean value of agreement towards gay men and lesbians is quite fluctuating for urban-periphery and periphery residents. In almost every survey wave, respondents living in urban places have the highest mean value of agreement, with one strong

outlier seen in 2014, where respondents living in peripheral areas have the highest mean value of agreement. This graphic shows a trend of acceptance being higher in urban areas, similarly for urban-periphery areas. A clear convergence over time is visible.

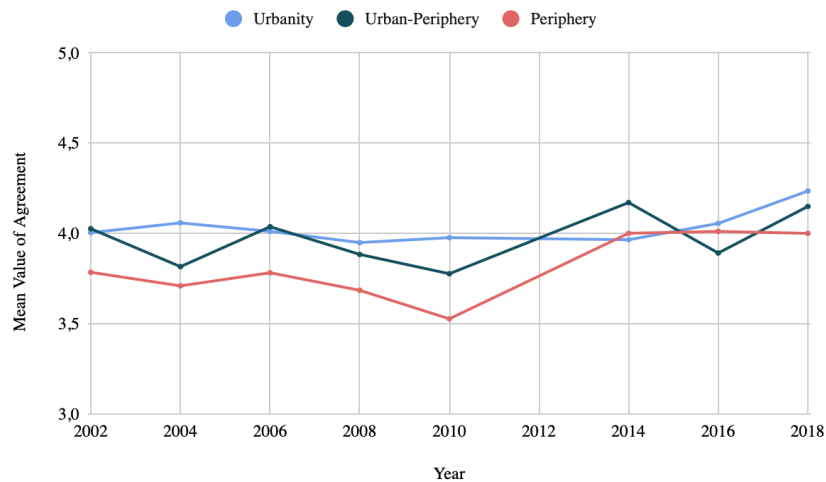


Figure 3: Changes in attitude regarding place of residence towards sexual minorities over all waves

To check the significance of the differences within the items an ANOVA-Test is carried out, with the original variable of places of residence taking the average for all waves.

Df	Sum Sq	Mean Sq	F value	Pr(>F)
1	158	158.11	120.9	<2e-16 ***
Signif. codes: 0.001 '***' 0.05 '**' 0.01 '*'				

Table 5: ANOVA-Test for place of residence and attitude towards sexual minorities over all waves

The F-statistic of the test is 120.9 and the p-value is less than $2e-16$, indicating that the difference in means is not due to chance but is statistically significant. The p-value means that the probability of finding a difference in means as extreme as the observed one or more extreme when there is no actual difference is extremely small. Therefore, it can be said with a high degree of confidence that place of residence is significantly related to attitude toward gay men and lesbians. The significance is indicated by the three asterisks (***), indicating that the difference is highly statistically significant. Overall, these results suggest that place of residence has a significant influence on attitude towards sexual minorities. Thus, the correlation measure of Cramers V between attitude and places of residence is 0.077, indicating a rather weak relation between the two values.

Figure 4 shows frequencies of changing attitude with a recoded variable for attitude, combining the response category of agreeing (“4”) and agreeing strongly (“5”) in combination with the dependent’s residential groups. Figure 4 reinforces the findings depicted in Figure 3, showing that agreement is potentially higher in urban areas compared to peripheral areas, with an exception visible in 2014 and 2016 where both of the values almost align. A general upward current is visible, seeing agreement answers towards the statement rising within all places of residence over time, when looked at 2002 compared to 2018. A convergence over time can be seen here thus there seems to be a negative trend towards convergence visible in 2018. Cramers V measures 0.06, indicating little to no association between the variables.

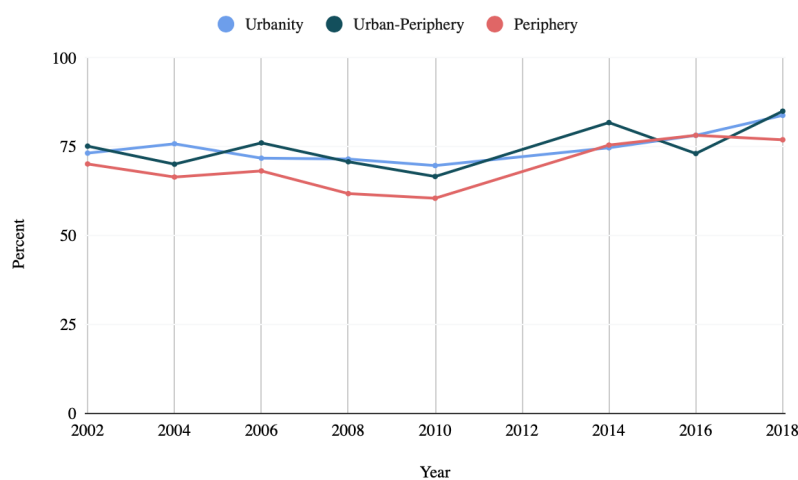


Figure 4: Changes of agreement towards sexual minorities within different places of residence over all waves

6.1.3 Descriptive of the Social Activity

The next part of the descriptive analysis refers to social cohesion in regards to attitude towards sexual minorities. Figure 5 refers to the question within the ESS survey of *Compared to other people of your age, how often would you say you take part in social activities?* The answer categories are recoded into taking less part in social activities than others, about the same as others and more than most others. In Figure 5 the mean value of attitude towards gay men and lesbians is shown in relation to intensity of contact. It is visible that there is a generic relation of intensity, showcasing an overall lower mean value when the contact is less. It could be assumed that agreement with the statement is higher where the intensity of contact is higher. This could lead to suggestions of social contact in form of social activities having an influence on attitudes towards gay men and lesbians. There is a clear convergence visible, starting slowly from 2008 until 2018.

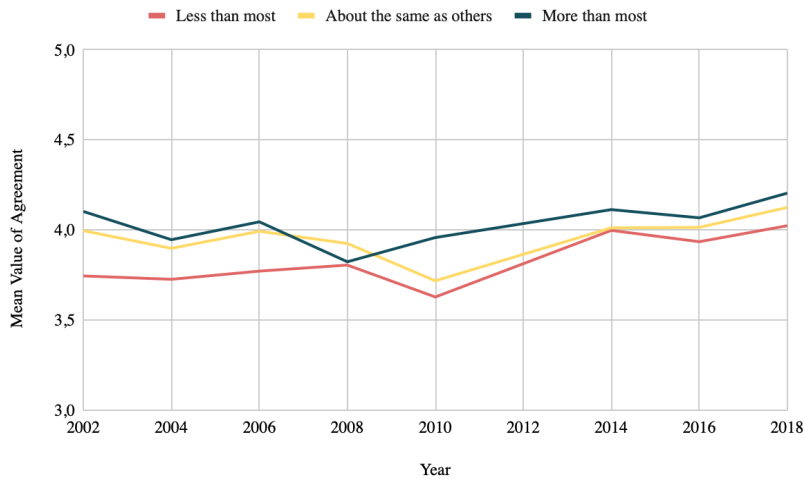


Figure 5: Changes in attitude towards sexual minorities in relation to the intensity of contact

Figure 6 shows the intensity of contact of the respondents, put into relation with the three categories of residence and level of agreement. It shows a simple frequency tendency of contact in the different places of residency towards being agreeing with the statement whether gay men and lesbians should be free to live life as they wish. The response category of agreeing (“4”) and agreeing strongly (“5”) with the statement are combined, trying to showcase an overall direction of agreement through the bar chart. Then each intensity of contact is shown in different spatial realms with the percentage showing the frequency of how the respondents responded in agreeing towards the statement.

It is visible that, in relation to intensity of contact with relation to place of residence, the overall agreement might be higher when contact is more intense with higher percentages showing that the overall agreement has a higher probability when respondents are socially more active than most others. The frequency of choosing categories of agreeing and agreeing strongly is lower, when they are socially less active, plus, when generally when they live in the periphery.

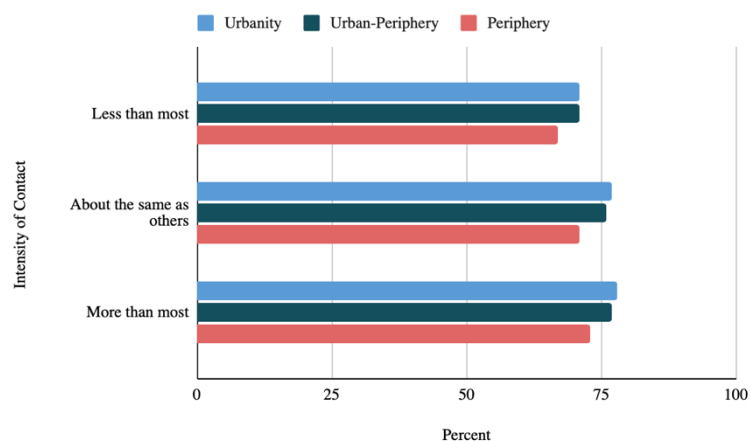


Figure 6: Impact of intensity of contact in places of residence on changes in agreement

To check the significance of the differences within the items another ANOVA-Test is carried out looking at intensity of contact, taking the average for all waves, resulting in:

Df	Sum Sq	Mean Sq	F value	Pr(>F)
1	99	99.35	76.19	<2e-16 ***
Signif. codes: 0.001 '***' 0.05 '**' 0.01 '*'				

Table 6: ANOVA-Test for intensity of contact and attitude towards sexual minorities over all waves

A significant relationship between intensity of contact and agreement towards gay men and lesbians is visible. The F-value is 76.19 and the p-value is very low (less than 0.001), indicating that the relationship between these variables is not due to chance. Intensity of Contact seems to be playing a role in explaining attitudes toward sexual minorities. This means that the intensity of contact that respondents have with members of sexual minorities has a significant impact on their attitudes. Cramers V for intensity of contact and the attitude towards gay men and lesbians is 0.06. Indicating a rather weak relationship between the two measurements.

6.1.4 Descriptive of the Socio-Demographics

In the following, descriptive analyses of important socio-demographics are shown. Starting with the change of mean value of agreement in regard to gender. Figure 7 shows that women are on average more agreeing towards sexual minorities, as the mean value is continuously higher than the mean value of their male counterparts in the survey. The correlation between the two variables, gender and agreement, measured through Pearson, is -0.12. This means that there is a weak negative linear relationship between the two. The p-value of 1.229e-08 indicates that the correlation is statistically significant and did not occur by chance. The confidence interval of -0.163 to -0.080 means that the true correlation between the two variables lies with a 95% probability between this interval. Cramers V is 0.12, indicating a still rather weak but visible correlation between gender and attitude towards sexual minorities.



Figure 7: Distribution of attitude in relation to gender over all waves

The next figure, Figure 8, shows a simple frequency count in form of a bar chart as a cross-section for the ESS survey waves of 2002 until 2018, where response categories of agreeing and agreeing strongly with the statement were combined (“5” and “4”), trying to showcase an overall direction of agreement within different genders. The results show that a female has a response percentage of 74 % towards either agreeing or agreeing strongly with the statement that gay men and lesbians should be free to live as they wish. Males have a generally lower response rate towards answering “Agree strongly” or “Agree”, with 65.4 % in total over all waves.

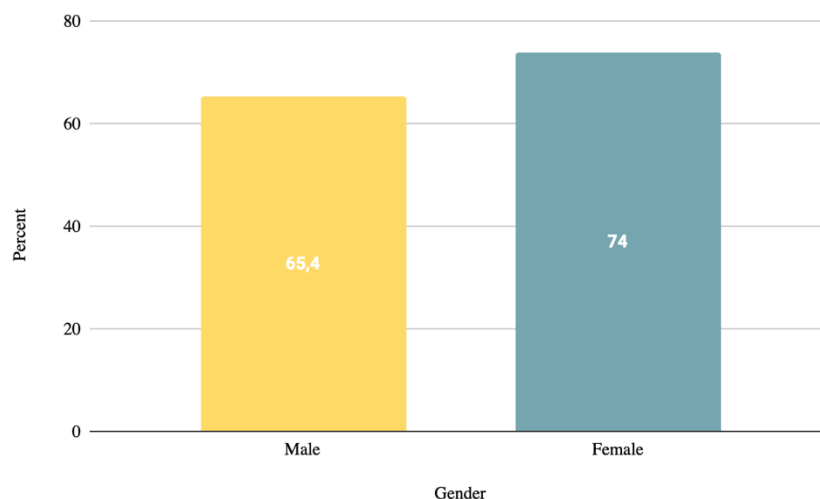


Figure 8: Gender and changes in attitude (cross-section over all waves)

In Figure 9 the variable of agreement is put into relation to age groups and shows a possible tendency for the relation within a mean value distribution. As visible in Fig. 8 older respondents

(age group 65+) compared to other, younger respondents, have a higher disagreement towards gay men and lesbians. As the mean values have the highest value continuing over all waves compared to the other age groups. This could lead to suggestions of age having an influence on attitudes towards gay men and lesbians. Cramers V is 0.14, indicating a weak but visible correlation with age slightly related to attitudes toward sexual minorities.

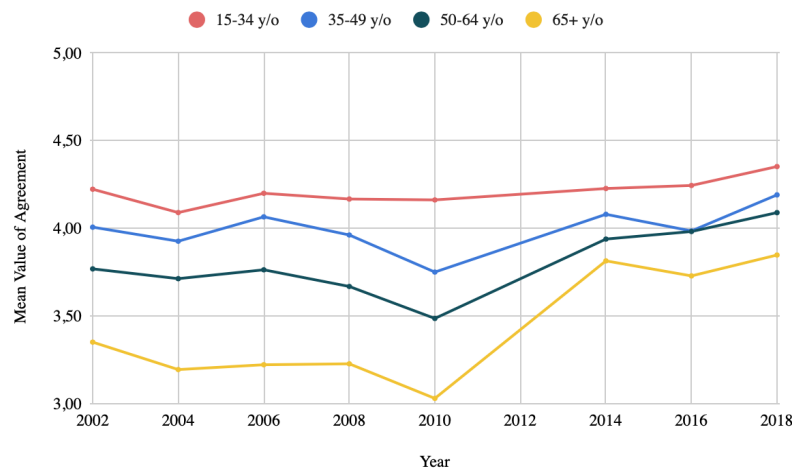


Figure 9: Changes in attitude in relation to age groups over all waves

The next two graphs, Figure 10, and Figure 11, give an overview of the level of education in relation to attitude. Fig. 10 measures the representation of a central tendency of education in relation to the tolerance towards sexual minorities. It is visible that the mean values are continuously lower for people with a lower level of education, indicating that people with lower education levels have a higher disagreement with the statement.

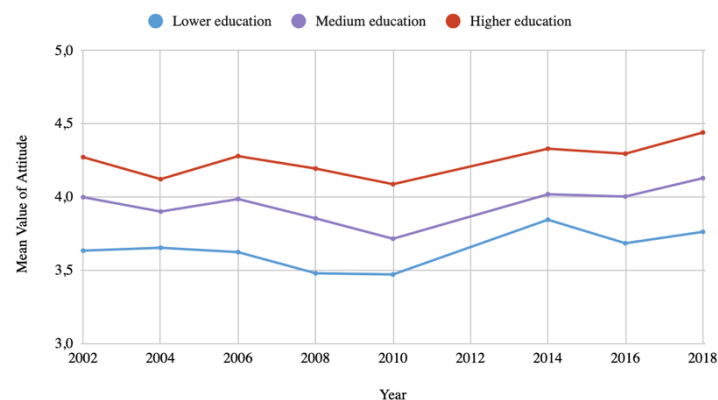


Figure 10: Changes in attitude towards sexual minorities in relation to educational level

The next figure, Figure 11, shows a simple frequency count in form of a bar chart, where response categories of agreeing and agreeing strongly with the statement were combined (“5” and “4”), trying to showcase again an overall direction of agreement. The results show that a

respondent with a higher level of education has a chance of being agreeing towards the statement as their response percentage is 80 % towards the two categories and respondents with a lower education have a frequency of 59 % to answer “Agree strongly” and “Agree”. The correlation measure of Cramers V for educational level and changes in attitude is 0.12, which means that there is some (low) association visible.

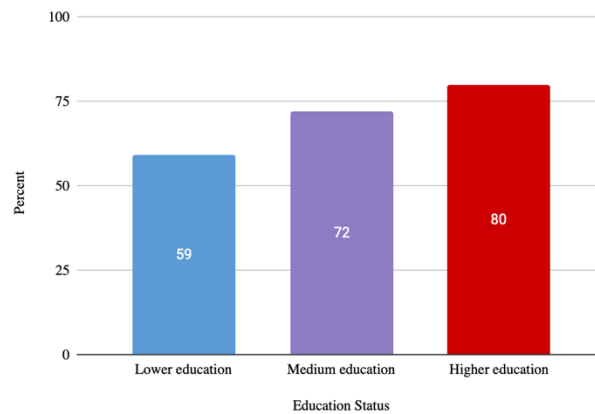


Figure 11: Educational level and changes in attitude (cross-section over all waves)

In the last descriptive, Figure 12, the religious status is put into relation to attitude towards gay men and lesbians. The mean value indicates the average value of agreement with the statement based on the respondents' religious affiliation. In this case, the categories of religious affiliation are "Yes" and "No". For year 2002, the average agreement score for religious respondents ("Yes") is 3.8 and for nonreligious respondents ("No") is 4.2. This pattern continues for subsequent years. The average agreement scores for non-religious respondents remain relatively constant between 4.0 and 4.4. Interpreting the averages, one could say that religious respondents generally show slightly lower agreement with the statement than non-religious respondents. This could lead to suggestions of religious affiliation being related to attitudes towards gay men and lesbians. Cramers V for religious or denominational affiliation is 0.19, which is the highest correlation measure visible within the here analyzed variables.

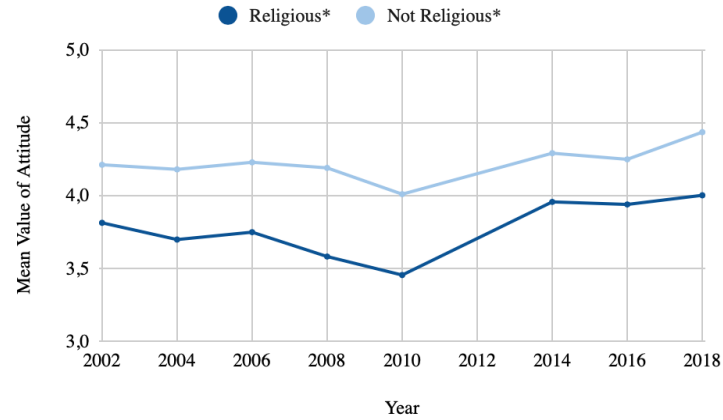


Figure 12: Changes in attitude in relation to religiosity over all waves (**religious or denominational*)

In summary, a presumption towards increasing acceptance of gay men and lesbians over the course of the survey is visible. Further, reinforcements of a more agreeing attitude towards gay men and lesbians are visible in urban areas compared to peripheral areas (urban-peripheral as well as peripheral). Additionally, a generic relation of social cohesion towards attitude towards gay men and lesbians could be assumed, as an overall lower acceptance was visible when the social activity was less. In addition, females generally had a higher probability of being more accepting towards sexual minorities, as their mean values of attitude was continuously higher compared to their male counterparts. Also, the youngest respondents and the one's with the highest education seemed to be the ones having higher answer categories of acceptance. Religious or denominational individuals tend to agree less with the statement. The following, the multivariate statistic, will check if these initial assessments can be supported.

6.2 Multivariate Statistics

This chapter will investigate the multivariate part of the analysis. Descriptive methods are useful to getting to know the data and prepare for more in depth analysis. Based on the theoretical background, the multivariate part intends to show how great possible influence of different variables on the attitude towards sexual minorities is. With the help of inferential statistics, one can make statements about a population on the basis of sample data. Multiple linear regression analysis can be used to test relationships between variables, as well as reflect mediated influences (Hartmann et al. 2022). The main goal here is to relate characteristics of the dependent variable to important influencing variables. The model will be extended to include interaction effects, providing insight into different effects over time for the variables

6.2.1 Coefficients of Attitude towards Sexual Minorities

Starting with a simple model that attempts to determine the attitude towards gays and lesbians based on place of residence and intensity of contact. Added the impact of time, visualized through the ESS 2002-2016, coded as dummy variables, as well as the level of education, age, belonging to a religion or denomination and gender. In a second step, interaction effects will be added to the model to provide insight, first, whether variables have different effects over time in relation to place of residence. In a third step, the interaction effect between places of residence and intensity of contact will be looked at. Significant values are marked with * ($p < 0.05$).

The influence of the place of residence in Table 5, the first regression model, shows that there is significant influence within rural places of residence, thus it can be accepted that recognition and tolerance tend to be higher in large cities and lower in small towns and larger cities. Also, intensity of contact is significant, showing that more contact could lead to more tolerance.

The intercept represents the expected value of the dependent variable (Attitude toward gays and lesbians) for all other independent variables set to zero. In Model 1, the intercept is 3.97 (***). This means that the expected value of the dependent variable when all other independent variables are zero is 3.97. The coefficient for the urban variable shows the average difference in the expected value of the dependent variable between urban and non-urban areas. In Model 1 to Model 3 in Table 5, the coefficient for urban place of residence is 0.07 (**), indicating that the expected value of the dependent variable is 0.07 higher on average in urban areas than in non-urban areas. The coefficient for the rural variable shows the average difference in the expected value of the dependent variable between rural and non-rural areas. In Model 1, the coefficient for Rural is -0.16 (***), indicating that the expected value of the dependent variable is 0.16 lower on average in rural areas than in non-rural areas. Over the regression model, with other variables

included, it rises towards -0.09 (***), indicating that over time and other impacts, the rural residence will be more accepting.

The coefficient for the variable of less social activity than others shows the average difference in the expected value of the dependent variable between individuals with less contact in their community and individuals with more contact. In Model 2, the coefficient for less contact is -0.14 (***), indicating that the expected value of the dependent variable is 0.14 lower on average for persons with less contact than for persons with more contact. The coefficient for the variable of more contact in Model 2 of Table 5 is 0.07 (**), indicating that the expected value of the dependent variable is 0.07 higher on average for persons with more contact than for persons with less contact. The coefficient for the variable of each ESS year shows the average change in the expected value of the dependent variable per unit of ESS surveys. Indicating that on average agreement towards the statement rises over time. Within the age groups the results of the descriptive analysis can be confirmed, regarding younger respondents being overall more agreeing towards sexual minorities. Further, it is visible, that the alignment towards more agreement within the 65+ age group is higher. Whereas the coefficient of the variable of youngest respondents stays constant. In Model 5 the level of education is added, showcasing that on average the expected value for individual with higher education have a higher average of being more agreeing towards sexual minorities. The coefficients range from -0.21 (**) to 0.27, depending on the level of education the individual has. In Model 7 of Table 5 it is visible that religion and gender plays a significant role. Interestingly, the expected value of religious respondents in relation to respondents who are not religious is the lowest of all values (-0.34(***)). Ultimately, the model shows that women are more tolerant in relation to men, indicating that the expected value of the dependent variable is 0.31 (***), higher on average when the respondent is female instead of male. With only urban places of residence losing its significance in the overall model, all other variables show comparable influence as in their individual analysis. It can be concluded that the influence of the rural place of residence as well as contact and socio-demographics show clear tendencies in regard to attitude towards sexual minorities. R^2 indicates the proportion of the variance of the dependent variable that is explained by the independent variables (Hartmann et al. 2022). Adjusted R^2 accounts for the number of independent variables and is an adjusted version of R^2 . In this model, R^2 increases from 0.01 in Model 1 to 0.11 in Model 6, while Adjusted R^2 increases in parallel. This suggests that the independent variables can explain a greater proportion of the variance in the dependent variable as the model progresses.

Multiple Regression Model							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Intercept)	3.97 ^{***} (0.02)	4.00 ^{***} (0.02)	4.19 ^{***} (0.03)	4.31 ^{***} (0.03)	4.27 ^{***} (0.03)	4.50 ^{***} (0.03)	4.35 ^{***} (0.04)
Urban Place of Residence	0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.05 [*] (0.02)	0.03 (0.02)	-0.01 (0.02)	-0.01 (0.02)
Urban-Rural Place of Residence	—	—	—	—	—	—	—
Rural Place of Residence	-0.16 ^{***} (0.02)	-0.15 ^{***} (0.02)	-0.16 ^{***} (0.02)	-0.15 ^{***} (0.02)	-0.12 ^{***} (0.02)	-0.09 ^{***} (0.02)	-0.09 ^{***} (0.02)
Less Contact Than Others		-0.14 ^{***} (0.02)	-0.14 ^{***} (0.02)	-0.08 ^{***} (0.02)	-0.07 ^{***} (0.02)	-0.08 ^{***} (0.02)	-0.09 ^{***} (0.02)
About the Same Contact As Others	—	—	—	—	—	—	—
More Contact Than Others		0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.09 ^{***} (0.02)	0.08 ^{***} (0.02)	0.07 ^{***} (0.02)	0.08 ^{***} (0.02)
ESS1: 2002			-0.18 ^{***} (0.03)	-0.27 ^{***} (0.03)	-0.23 ^{***} (0.03)	-0.23 ^{***} (0.03)	-0.23 ^{***} (0.03)
ESS2: 2004			-0.26 ^{***} (0.03)	-0.37 ^{***} (0.03)	-0.33 ^{***} (0.03)	-0.33 ^{***} (0.03)	-0.32 ^{***} (0.03)
ESS3: 2006			-0.18 ^{***} (0.03)	-0.27 ^{***} (0.03)	-0.24 ^{***} (0.03)	-0.24 ^{***} (0.03)	-0.23 ^{***} (0.03)
ESS4: 2008			-0.26 ^{***} (0.03)	-0.34 ^{***} (0.03)	-0.33 ^{***} (0.03)	-0.34 ^{***} (0.03)	-0.35 ^{***} (0.03)
ESS5: 2010			-0.37 ^{***} (0.03)	-0.46 ^{***} (0.03)	-0.46 ^{***} (0.03)	-0.48 ^{***} (0.03)	-0.48 ^{***} (0.03)
ESS7: 2014			-0.08 [*] (0.04)	-0.12 ^{***} (0.04)	-0.11 ^{**} (0.04)	-0.11 ^{**} (0.03)	-0.10 ^{**} (0.03)
ESS8: 2016			-0.09 ^{**} (0.03)	-0.12 ^{***} (0.03)	-0.13 ^{***} (0.03)	-0.13 ^{***} (0.03)	-0.13 ^{***} (0.03)
ESS9: 2018	—	—	—	—	—	—	—
15-34 Years Old				0.20 ^{***} (0.02)	0.23 ^{***} (0.02)	0.20 ^{***} (0.02)	0.20 ^{***} (0.02)
35-49 Years Old	—	—	—	—	—	—	—
50-64 Years Old				-0.21 ^{***} (0.02)	-0.18 ^{***} (0.02)	-0.17 ^{***} (0.02)	-0.16 ^{***} (0.02)
65+ Years Old				-0.54 ^{***} (0.03)	-0.47 ^{***} (0.03)	-0.44 ^{***} (0.03)	-0.43 ^{***} (0.03)
Low Level of Education					-0.21 ^{***} (0.02)	-0.20 ^{***} (0.02)	-0.22 ^{***} (0.02)
Medium Level of Education	—	—	—	—	—	—	—
High Level of Education					0.27 ^{***} (0.03)	0.25 ^{***} (0.03)	0.25 ^{***} (0.03)
Religious/ Denominational						-0.32 ^{***} (0.02)	-0.34 ^{***} (0.02)
Male	—	—	—	—	—	—	—
Female							0.31 ^{***} (0.02)
R ²	0.01	0.01	0.02	0.07	0.08	0.10	0.12
Adj. R ²	0.01	0.01	0.02	0.07	0.08	0.10	0.11
Num. obs.	16447	16447	16447	16447	16447	16447	16447

*** p < 0.001; ** p < 0.01; * p < 0.05

Table 7: Coefficients of attitude towards gays and lesbians

6.2.2 Interaction Effects of Place of Residence and Time

The next regression model, Table 6, presents the interaction effects of residence over time. Showing a moderation effect, indicating an expression of an independent variable influenced by the expression of another independent variables. If the direction of the interaction coefficient matches that of the main effect, the interaction variable strengthens the main effect. Conversely, the main effect is reduced by an opposite, negative direction of the moderation effect. If the interaction coefficient is not significant, the main effect is considered and fixed as a marginal effect. Within the moderation effect analysis visible in Table 6 no interaction is visible for urban places of residence, meaning the moderator of time has no significant influence on the attitude towards sexual minorities in urban places of residence.

However, a small but significant moderation is visible for rural places of residence. The difference of the gradients signifies that the difference between the gradient of rural places of residence and the year of the surveys is 0.01. The regression lines are here though also almost parallel and have almost no interaction value. Besides the interaction effects, Table 6 shows distinctly again, that being religious (or belonging to a denomination) has a significant influence on the disagreement towards sexual minorities and is one of the few characteristic values that rises, over the course of the adjustment of the models. Religious affiliation is the only measurement within this analysis, indicates a negative development over the years. That is, it is possible that religious affiliation is anticyclical to the rest of the influencing variables that were tested, causing the attitude to become less approving, to develop negatively. And not, as with all the others, a general levelling towards higher acceptance. Meaning that in relation to sexual sub-cultures, the trend towards greater tolerance over time, as otherwise seen in residuary measures, indicates in relation with religious or denominal beliefs a convergence towards even greater disagreement with time.

Multiple Regression Model							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Intercept)	3.91 ^{***} (0.03)	3.94 ^{***} (0.03)	3.97 ^{***} (0.03)	3.95 ^{***} (0.03)	4.17 ^{***} (0.04)	4.02 ^{***} (0.04)	4.02 ^{***} (0.04)
Urban Place of Residence	0.08 (0.04)	0.07 (0.04)	0.05 (0.04)	0.04 (0.04)	-0.00 (0.04)	-0.00 (0.04)	-0.00 (0.04)
Urban-Rural Place of Residence	—	—	—	—	—	—	—
Rural Place of Residence	-0.24 ^{***} (0.04)	-0.24 ^{***} (0.04)	-0.21 ^{***} (0.04)	-0.20 ^{***} (0.04)	-0.17 ^{***} (0.04)	-0.17 ^{***} (0.04)	-0.17 ^{***} (0.04)
ESS 2002-2018	0.01 ^{**} (0.00)	0.01 ^{**} (0.00)	0.01 [*] (0.00)	0.01 ^{***} (0.00)	0.01 ^{***} (0.00)	0.01 ^{***} (0.00)	0.01 ^{***} (0.00)
Less Contact Than Others		-0.14 ^{***} (0.02)	-0.11 ^{***} (0.02)	-0.06 ^{**} (0.02)	-0.08 ^{***} (0.02)	-0.09 ^{***} (0.02)	-0.09 ^{***} (0.02)
About the Same Contact As Others	—	—	—	—	—	—	—
More Contact Than Others		0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.09 ^{***} (0.02)	0.08 ^{***} (0.02)	0.08 ^{***} (0.02)	0.08 ^{***} (0.02)
Low Level of Education			-0.26 ^{***} (0.02)	-0.19 ^{***} (0.02)	-0.18 ^{***} (0.02)	-0.20 ^{***} (0.02)	-0.20 ^{***} (0.02)
Medium Level of Education	—	—	—	—	—	—	—
High Level of Education			0.27 ^{***} (0.03)	0.26 ^{***} (0.03)	0.25 ^{***} (0.03)	0.25 ^{***} (0.03)	0.25 ^{***} (0.03)
15-34 Years Old				0.21 ^{***} (0.02)	0.18 ^{***} (0.02)	0.18 ^{***} (0.02)	0.18 ^{***} (0.02)
35-49 Years Old	—	—	—	—	—	—	—
50-64 Years Old				-0.18 ^{***} (0.02)	-0.17 ^{***} (0.02)	-0.16 ^{***} (0.02)	-0.16 ^{***} (0.02)
65+ Years Old				-0.48 ^{***} (0.03)	-0.45 ^{***} (0.03)	-0.44 ^{***} (0.03)	-0.44 ^{***} (0.03)
Religious/ Denominational					-0.30 ^{***} (0.02)	-0.33 ^{***} (0.02)	-0.33 ^{***} (0.02)
Male	—	—	—	—	—	—	—
Female						0.31 ^{***} (0.02)	0.31 ^{***} (0.02)
<i>Interaction Effects</i>							
Urban Place of Residence: ESS 2002-2018							0.00 (0.00)
Rural Place of Residence: ESS 2002-2018							0.01 ^{**} (0.00)
R ²	0.01	0.02	0.03	0.08	0.09	0.11	0.11
Adj. R ²	0.01	0.02	0.03	0.07	0.09	0.11	0.11
Num. obs.	16447	16447	16447	16447	16447	16447	16447

*** p < 0.001; ** p < 0.01; * p < 0.05

Table 8: Interaction effects of place of residence and time

6.2.3 Interaction Effects of Place of Residence and Social Activity

In Table 7, Model 1, the intercept is 4.00 (**). This means that the expected value of the dependent variable when all other independent variables are zero is 4.00.

When the ESS surveys are coded as continuous variables, shows the average change in the expected value of the dependent variable per unit of year value. In Model 2, the coefficient for the ESS survey years of 200-2018 is 0.01 (***) and in Model 3 it is 0.02 (***), indicating that the expected value of the dependent variable increases by the corresponding coefficient with each increase of 1 in the two years. In this regression mode, the intensity of contact loses its significance, once the whole model is generated (Model 6).

The main focus here though is the interaction effects, showing how the relationship between the independent variables and the dependent variable changes, depending on the combinations of interacting variables. In this model, there are four interaction effects, depending on the place of residence and the intensity of contact of the individuals. The interaction effect for urban place of residence and less social activity than others is -0.05. The negative interaction value of -0.05 shows that the influence of on the dependent variable is attenuated as a function of place of residence, meaning that the main effect of urban place of residence in relation to attitude towards sexual minorities is weakened. The next interaction effect, the difference between the gradient of urban places of residence and more social activity, is 0.07, signifying a small difference within the gradients. The interaction effect of rural places of residence and contact is almost non-existing. Though the moderation of rural place of residence and less social activity has a significance, the effect of -0.01 shows a relatively small attenuated in the gradients of the regression lines of rural places of residence and less social activity. None of the interaction values are significant.

Multiple Regression Model

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
(Intercept)	4.00 ^{***} (0.02)	-22.02 ^{***} (3.24)	-16.26 ^{***} (3.23)	-28.62 ^{***} (3.20)	-28.61 ^{***} (3.18)	-28.06 ^{***} (3.14)	-28.25 ^{***} (3.15)
Urban Place of Residence	0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.04 (0.02)	0.04 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.03)
Urban-Rural Place of Residence	—	—	—	—	—	—	—
Rural Place of Residence	-0.15 ^{***} (0.02)	-0.16 ^{***} (0.02)	-0.13 ^{***} (0.02)	-0.12 ^{***} (0.02)	-0.09 ^{***} (0.02)	-0.09 ^{***} (0.02)	-0.08 ^{**} (0.03)
Less Contact Than Others	-0.14 ^{***} (0.02)	-0.14 ^{***} (0.02)	-0.11 ^{***} (0.02)	-0.07 ^{**} (0.02)	-0.08 ^{***} (0.02)	-0.09 ^{***} (0.02)	-0.07 (0.04)
About the Same Contact As Others	—	—	—	—	—	—	—
More Contact Than Others	0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.07 ^{**} (0.02)	0.09 ^{***} (0.02)	0.08 ^{***} (0.02)	0.08 ^{***} (0.02)	0.06 (0.04)
2002 - 2018		0.01 ^{***} (0.00)	0.01 ^{***} (0.00)	0.02 ^{***} (0.00)	0.02 ^{***} (0.00)	0.02 ^{***} (0.00)	0.02 ^{***} (0.00)
Low Level of Education			-0.27 ^{***} (0.02)	-0.19 ^{***} (0.02)	-0.19 ^{***} (0.02)	-0.21 ^{***} (0.02)	-0.21 ^{***} (0.02)
Medium Level of Education	—	—	—	—	—	—	—
High Level of Education			0.27 ^{***} (0.03)	0.26 ^{***} (0.03)	0.25 ^{***} (0.03)	0.25 ^{***} (0.03)	0.24 ^{***} (0.03)
15-34 Years Old				0.21 ^{***} (0.02)	0.18 ^{***} (0.02)	0.18 ^{***} (0.02)	0.18 ^{***} (0.02)
35-49 Years Old	—	—	—	—	—	—	—
50-64 Years Old				-0.18 ^{***} (0.02)	-0.17 ^{***} (0.02)	-0.16 ^{***} (0.02)	-0.16 ^{***} (0.02)
65+ Years Old				-0.48 ^{***} (0.03)	-0.45 ^{***} (0.03)	-0.44 ^{***} (0.03)	-0.44 ^{***} (0.03)
Religious/ Denominational					-0.30 ^{***} (0.02)	-0.33 ^{***} (0.02)	-0.33 ^{***} (0.02)
Male	—	—	—	—	—	—	—
Female						0.31 ^{***} (0.02)	0.31 ^{***} (0.02)
<i>Interaction Effects</i>							
Urban Place of Residence:Less Social Activity							-0.05 (0.05)
Urban Place of Residence:More Social Activity							0.07 (0.06)
Rural Place of Residence:Less Social Activity							-0.01 (0.05)
Rural Place of Residence:More Social Activity							0.00 (0.05)
R ²	0.01	0.02	0.03	0.07	0.09		0.11
Adj. R ²	0.01	0.02	0.03	0.07	0.09		0.11
Num. obs.	16447	16447	16447	16447	16447		16447

*** p < 0.001; ** p < 0.01; * p < 0.05

Table 9: Interaction effects of place and residence and social activity

As seen, the main results of the multivariate statistic show a distinct image and confirm much of the descriptive analysis. Though urban places of residence showed small to no significance in regard to attitude towards sexual minorities, rural place of residence seems, with the variables of gender, age, religion, etc., to be a significant factor when looked at agreement or disagreement. In the next section, the hypotheses initially formulated are tested in summary.

7 Interpretations and Limitations

This chapter will take up the hypotheses mentioned and apply them to the results of the analysis, check their validity, whether they can be retained or rejected.

- H₁ Place of residence has an impact on attitudes towards gay men and lesbians.
- H₂ The tolerance towards gay men and lesbians rises over time.

Concentrating on H₁ and H₂, the analyses show that place of residence indeed plays a role within attitudes towards gay men and lesbians, thus the correlation seems to be rather low. This was shown within the measurements of Cramers V correlation as well as the regression analysis. The attitudes of rural and urban residents almost converged in 2014 and 2016. After that, however, the attitude of rural residents declined again, while tolerance continued to rise steadily among urban residents. The differences between urban or rural habitual areas had a stronger positive progress of attitude, whereas urban-periphery respondents only show minor changes within their prejudice or tolerance over time in the descriptive analysis. The results further show that the agreement (“Agree strongly”) towards gay men and lesbians rose over the years, thus not being stringent with one escape visible in 2010. As there is a small escape in 2010 seen in almost every variable analyzed over time it will not be largely interpreted. The existence of this difference does not necessarily imply an actual significance, it could be due to an unbalanced sample survey or a sample error. In general, the hypothesis can be retained, that tolerance towards gay men and lesbians rises over time, this goes for the main independent variables as well as for the socio-demographics used in the analysis.

- H₃ The intensity of contact is related to attitudes towards gay men and lesbians.
- H₄ The higher the intensity of contact the higher the tolerance.

Both hypotheses, H₃ and H₄, can be retained, as the intensity of contact shows a positive relation to the tolerance towards gay men and lesbians. This could possibly mean that social cohesion can play a role within attitudes towards non-normative sexual orientations. However, within the data used in this analysis, it is not further developed whether contact is happening between groups, or

within one's in-group. Thus, it could be related that social cohesion in the form of social activity is related to attitudes towards sexual minorities with a marginal effect. The limitation here may be that social activity is only a small subset of social cohesion. It can be seen as a placeholder, and it clearly indicates the intensity of contact. But to capture social cohesion on a larger scale, the variables would need to be more summarized and differentiated to make broader assumptions about the impact of social cohesion on attitudes.

H_{4a} The higher the intensity of contact in urban places of residence the higher the tolerance towards gays and lesbians.

H_{4b} The higher the intensity of contact in rural places of residence the higher the tolerance towards gays and lesbians.

In connection with H_{4a} and H_{4b}, the intensity of contact showed a relation in regard to the tolerance towards sexual minorities. This goes for urban, as well as peripheral areas. However, contact seems to be more meaningful in urban places of residence. At least within bivariate statistics there seems to be a seemingly higher impact on attitude towards gays and lesbians in urban areas, however when the moderation effect is analyzed, the interaction of contact is neither significant in urban nor rural areas.

When looking at socio-demographics in relation to the state of already existing research, this analysis shows that the younger individuals were generally more accepting towards gays and lesbians' way of life. Interestingly enough, this analysis shows opposite results in relation to the age group results of Beham-Rabanser, Berghammer and Zartler (2019), where an increase in acceptance was more visible within younger respondents, and older ones had not the same ascent. Here, older respondents had a more significant increase in their positive attitude over time in comparison to younger respondents, which were generally more accepting thus did not increase their tolerance by a high degree. The analysis also showed that if the level of education is higher, the attitude towards sexual minorities will be of more tolerance. These findings find consent with, e. g., the study of Beham-Rabanser, Berghammer and Zartler (2019) viewing acceptance of same-sex partners as parents. As well as the overall notion, that higher education standards, can be an indicator for liberal values. The analysis further showed that religious affiliated respondents generally disagree more with the statement and that religion might be one of the main factors, having a negative impact on the attitude towards sexual minorities. This could support the thesis, that religious people are generally more norm-orientated and have a higher probability of orientating to traditional and conservative values and views. It was further visible that respondents, who are female, are overall more tolerant than male respondents. This

aligns with the research of Berghammer and Schmidt (2019) as well as the study of Beham-Rabanser, Berghammer and Zartler (2019).

As the topic is very complex a definitive answer to the hypotheses in some cases still requires further research. It has been shown that it could be assumed that the rural residence can make it more likely to have a higher frequency of less tolerance towards sexual minorities and a higher disagreement. At the same time, it cannot be conclusively said that a contrary picture is visible in large cities, as the values are not significant enough. Nor can a conclusive assessment be made of the extent to which social activity plays a greater role in either urban or peripheral areas, since the results are not significant enough. There thus could be a relation assumed that it generally heightens the agreement towards sexual minorities. It might also be beneficial to have a more detailed survey on social cohesion, as it is such a diverse and complex theory. For further studies it would be interesting to link the information of rural residents generally having lower income and utilize whether this or other measures such as (less) educational opportunities lead to these heighten prejudiced behavior visible.

8 Conclusion

In the beginning of this thesis, we saw ways on how normative societies impact sexual minorities. It was visible, that the intersectionality for the group of sexual subcultures is as relevant as in any other group, with not only their non-normative-conforming sexual orientation having impact on the disadvantage role in a heteronormative society, but also other socio-demographics such as being female or belonging to an ethnic minority. All of which can be traced back to certain stereotypes and prejudiced belief system. It was once more confirmed that (preconditioned) societal norms can (negatively) influence the life of minority groups. So, to work against preconceived and entrenched values, it helps to understand the socio-psychological and sociological structures of prejudices, stigmatizations, and stereotyping. Luckily in the past decades, the overall attitude and tolerance towards sexual minorities has seen a global uplift, as society is becoming more and more tolerant towards non-normative lifestyles, gender dispositions, and minority groups in general. This can also be observed in Austria. However, a large part of sexual minorities still faces stigma and prejudiced behavior. Someone who is falling out of heteronormative ideas of sexual orientation experiences discrimination during their life with a high probability, even nowadays.

The thesis concentrated on spatiality as a contextual phenomenon, potentially influencing prejudiced beliefs and inhabiting different local identities. Place of residence as a spatial-contextual phenomenon in the examination of attitudes towards gay men and lesbians seem to

play a significant role in conceptualizing the *gay imaginary*, with urban areas being widely recognized as more tolerant and welcoming. This narrative of urban areas inhibiting or attracting more open-minded individuals was once more retained in the results of this work. This could possibly be attributed to Wirth's understanding of the characteristics of urban areas that are able to disrupt and change socialization processes. Similarly, that urban areas have significantly higher compositions of liberals, higher academics, and fewer religious fundamentalists (Swank et al. 2013). It would be particularly interesting to look at the compositions of residents in order of these characteristics and see if this is true for the data source in question.

Also, the results showed a tendency of urban inhabitants having a more tolerant attitude towards sexual orientations outside of the norm when compared to their rural counterparts. This could mean that the *rural imaginary*, displayed by e. g. Simmel or Fischer, cannot be applied in sexual minority research. An approximation towards more acceptance seen over time was also true, independent from the respondents' realms of belonging. Further research could acknowledge the importance of spaces for minorities, so that the discrepancies of them living in different spatial realms, such as urbanity and periphery, are further researched and possibly not such counterparts anymore in relation to their acceptance of lifestyles outside the norm. And, as we have seen also, the experiences of rural sexual minorities are often not highlighted or investigated properly (especially in European research), it would be interesting to concentrate more on these dense areas. Where convictions potentially spread faster and are harder to invalidate. It would be interesting to explore the implications further, given some of the strengths of rural (dense) areas with a community that is so interwoven that either acceptance or rejection rises. Additionally, it would be interesting to see how rural areas can implement social cohesion to support open values. And if there are maybe even further possibilities thanks to the strengths of their communities (see ripple or neighborhood effects).

Moreover, further research could advantage of the differences in the conception of urban and rural, e. g. by Simmel, Halfacree, Butler, or Brown, to better understand the relevance of the idea of a *city dweller* or the *rural locality* on attitudes toward sexual minorities. Or potentially further acknowledge identity concepts such as David Riesman's external-directed individuals which we see in modern highly segmented societies. This external direction seen within identity research might also have an impact in shaping and reproducing belief systems. Because as modern societies are further impacted through the outside and are turning away from traditional forms of shaping their identities, potentially also applicable to concepts of norms and values, it might be more important than ever to look at the 'outside'; to look at the space that surrounds us and to find ways to build this space according to open value systems and ideas of inclusion and

integration. As Lefebvre put it, natural space is disappearing more and more and becomes more and more interrelated with society.

Overall, the results of this thesis fitted the generic trend observed and showed a general upward trend visible in the tolerance and acceptance of orientations outside the current sexual norm, making it possible to observe social change processes through the longitudinal study of the ESS. It might be possible that the overall upward current in attitude showcases a generic growing sensitivity and shift in relation to societal norms. However, it is questionable whether an alignment with more tolerant belief systems in certain societal groups has a long-term and sustainable impact on fundamental patterns of prejudice, stereotypes, or stigma. With the shifts in social norms might be influential but not engaging enough to change one's belief system.

Additionally, this research showed similar results in regard to socio-demographical characteristics being important in agreement, with individuals of higher education, females and with a low religious affiliation ensuring a rather tolerant belief system. Whereas it seems as if the exact opposite: being male (aligned with the binary notions of gender used in the survey), low education levels and high religious affiliation, can potentially lead to higher discriminatory behavior and increases the probability for more conservative ideas and an orientation towards the already existing norms. This thesis tried to show that there are ways of reducing such probability, for example through social cohesion. What is known is, that opportunities for close personal relationships seem to have risen between heterosexuals and non-heterosexuals (see chapter 2.4.2). And as contact is negatively correlated with stigmatized beliefs, this can lead to less sexual prejudice in the long run. Assuming then, that the upward current will hold and will continue to hold or even strengthen its approach to tolerant beliefs.

It seems still rather complicated to grasp social cohesion, collective efficacy or contact in relation to its impact on these beliefs, to further generate contact that reaches below the surface in order to reach its effectiveness. The difficulty that presents itself is, a. o., to see cohesion as the bridging function, and not as potential threat. It is not conclusively clarified which characteristics of contact lead to significant reductions of prejudices or instead reinforce them. Social cohesion measured through the amount of social activity (described as intensity of contact here) is not enough to make substantiated statements about how this might influence attitudes towards sexual minorities. Society is inevitably imbued by social interaction, which in turn is an ongoing process of negotiating and working through interaction. In this negotiation, it is necessary to understand which interactions lead to recognition and understanding of the other, potentially manifesting equality, and which interactions are considered a threat. Recognizing the moments where social interaction can lead to positive and potentially works against the internalization of traditional and

outdated belief system. However, the data used showed limits in conducting a broader in-depth analysis, as it was not possible to down pin social cohesion in a more profound way.

Seen in, e. g., Foucault's, Brown's or even Butler's work, the interconnectedness of sexuality is ubiquitous. Through questioning societal norms and mechanisms shaping sexuality, the concepts or perceptions are put into a critical spotlight. It thus makes it possible to understand the complexity of it and the impact social structures can have on norms, prejudiced behavior, or attitude towards minorities. And by understanding its historical and social contexts, the structures influencing sexual norms can be better understood and question its existing patterns.

Society, as Simmel puts it, is the sum of the interactions in which individuals stand in relation with each other (Abels 2009). If everyone works towards being open with each other and being open for the (benevolent) exchange between each other, chances are that society will see an impetus towards tolerance and inclusion on all sides. As cognitive representations of current societies, it stays important to understand the structures of the social environment and the psychology behind prejudices, to reduce biases and stigma. It could be argued that stereotypes or prejudices are a representation of current societies and a way of showing 'where we are at'. As we see the mentioned growing sensitivity and shifts, one could say we are at least on the right track.

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Appendix I

I. Abstract

This thesis is concerned with research of sexual minorities and how behavior towards sexual minorities is potentially influenced by spatiality. Specifically, it examines how attitudes toward sexual minorities, or gays and lesbians, have changed in Austria over nearly 15 years, from 2002 to 2018. The paper approaches spatiality from a sociological perspective in terms of differences that become visible within different affiliations. It shows how spatiality can impact exclusionary behaviors and prejudices, potentially including sexual diversity. It also addresses theories of prejudice, social cohesion (which also affects prejudicial behavior), and sexual stigma. Sexual orientation is presented as a socially constructed category built on society's ideas of inferiority and superiority. As well as on the idea of culturally constructed notions of power, where a non-stigmatized group places itself above a stigmatized one. Prejudice, stigmatization, and stereotyping seem inescapable, yet harmful, perpetuating the status of minorities and majorities created by group dynamics and exclusionary mechanisms. Hypotheses are formed from theory and research evidence, regarding the influence of time and spatiality on exclusionary/nonconsenting attitudes toward sexual minorities. These will be tested for, among other things, the possible influence of social cohesion. This is done through a secondary analysis of data from the freely available European Social Survey data source, which shows changes in social structures, relationships, and attitudes, and how to interpret social and political change in Europe. The relevant data were extracted, processed, and described and analyzed using descriptive and multivariate statistics. The results show a general convergence over time towards more accepting attitudes. Also evident is a correlation between rural residences in terms of attitudes toward sexual minorities and a relationship between macro-level sociodemographic characteristics such as gender, age, educational status, and religiosity.

II. Kurzfassung

Diese Arbeit befasst sich mit der Forschung sexueller Minderheiten und wie Verhalten gegenüber sexuellen Minderheiten potenziell durch Räumlichkeit beeinflusst wird. Im Detail wird untersucht, wie sich die Einstellung gegenüber sexuellen Minderheiten, bzw. Schwulen und Lesben, in Österreich über fast 15 Jahre, von 2002 bis 2018, verändert hat. Die Arbeit nähert sich dem Thema Räumlichkeit aus einer soziologischen Perspektive in Bezug auf Unterschiede, die innerhalb verschiedener Zugehörigkeitsbereiche sichtbar werden. Sie zeigt, wie sich Räumlichkeit auf ausgrenzendes Verhalten und Vorurteile auswirken kann, möglicherweise auch in Bezug auf sexuelle Diversität. Darüber hinaus werden Theorien über Vorurteile, sozialen Zusammenhalt (der sich auch auf vorurteilsbehaftetes Verhalten auswirkt) sowie sexuelle Stigmatisierung behandelt. Die sexuelle Orientierung wird als eine sozial konstruierte Kategorie dargestellt, die auf den Vorstellungen der Gesellschaft von Unter- und Überlegenheit aufbaut. Sowie auf der Idee von kulturell konstruierten Machtvorstellungen, bei denen sich eine nicht stigmatisierte Gruppe über eine stigmatisierte stellt. Vorurteile, Stigmatisierung und Stereotypisierung scheinen unausweichlich, aber dennoch schädlich und verewigen den Status von Minderheiten und Mehrheiten, der durch Gruppendynamik und Ausschlussmechanismen entsteht. Aus Theorie und Forschungsstand werden Hypothesen gebildet, in Bezug auf den Einfluss von Zeit und Räumlichkeit auf ausgrenzende/nicht zustimmende Einstellungen gegenüber sexuellen Minderheiten. Diese werden u. a. auf den möglichen Einfluss von sozialer Kohäsion getestet. Dies geschieht durch eine Sekundäranalyse von Daten aus der frei zugänglichen Datenquelle des European Social Survey, der Veränderungen in sozialen Strukturen, Beziehungen und Einstellungen aufzeigt und wie der soziale und politische Wandel in Europa zu interpretieren ist. Die relevanten Daten wurden extrahiert, bearbeitet und mit Hilfe von deskriptiven und multivariaten Statistiken beschrieben und ausgewertet. Die Ergebnisse zeigen eine allgemeine Konvergenz im Laufe der Zeit hin zu einer akzeptierenden Einstellung. Auch wird eine Wechselbeziehung zwischen ländlichen Wohnorten in Bezug auf die Einstellung gegenüber sexuellen Minderheiten und einer Beziehung zwischen soziodemografischen Merkmalen, wie Geschlecht, Alter, Bildungsstatus und Religiosität deutlich.

Appendix II

R Syntax

```
setwd("/Users/tessapittrof/Desktop/R Data")
getwd()
install.packages(c("haven", "psych", "dplyr", "labelled", "lsr"))
lapply(c("haven", "psych", "dplyr", "labelled", "lsr"), library, character.only = TRUE)
AT_ESS_insg <- read_sav("/Users/tessapittrof/Desktop/R Data/AT_ESS_insg.sav")
AT_ESS_r4 <- read_sav("/Users/tessapittrof/Desktop/R Data/ESS4AT.sav")
AT_ESS_r5 <- read_sav("/Users/tessapittrof/Desktop/R Data/ESS5ATe1_1.sav")

## Preparation
# Recoding Age
AT_ESS_insg$agea <- cut(AT_ESS_insg$agea, breaks = c(14, 35, 50, 65, Inf), labels = c("15-34",
"35-49", "50-64", "65+"))
AT_ESS_r4$agea <- cut(AT_ESS_r4$agea, breaks = c(14, 35, 50, 65, Inf), labels = c("15-34",
"35-49", "50-64", "65+"))
AT_ESS_r5$agea <- cut(AT_ESS_r5$agea, breaks = c(14, 35, 50, 65, Inf), labels = c("15-34",
"35-49", "50-64", "65+"))

# Extract partial data sets and NAs
AT_ESS_r1 <- subset(AT_ESS_insg, essround=="1")
AT_ESS_r2 <- subset(AT_ESS_insg, essround=="2")
AT_ESS_r3 <- subset(AT_ESS_insg, essround=="3")
AT_ESS_r7 <- subset(AT_ESS_insg, essround=="7")
AT_ESS_r8 <- subset(AT_ESS_insg, essround=="8")
AT_ESS_r9 <- subset(AT_ESS_insg, essround=="9")

AT_ESS_r1 <- na.omit(AT_ESS_r1)
AT_ESS_r2 <- na.omit(AT_ESS_r2)
AT_ESS_r3 <- na.omit(AT_ESS_r3)
AT_ESS_r7 <- na.omit(AT_ESS_r7)
AT_ESS_r8 <- na.omit(AT_ESS_r8)
AT_ESS_r9 <- na.omit(AT_ESS_r9)

# Recoding Education
```

```

# Für ESS1
library(dplyr)
AT_ESS_r1 <- AT_ESS_r1 %>%
  mutate(educ = case_when(
    edulv1a %in% c(0, 1, 2) ~ 1,
    edulv1a %in% c(3, 4) ~ 2,
    edulv1a == 5 ~ 3,
    TRUE ~ NA_integer_
  ))

AT_ESS_r1$educ
table(AT_ESS_r1$educ)
sum(is.na(AT_ESS_r1$educ))

AT_ESS_r1$educ <- factor(AT_ESS_r1$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

#Für ESS2
library(dplyr)
AT_ESS_r2 <- AT_ESS_r2 %>%
  mutate(educ = case_when(
    edulv1a %in% c(0, 1, 2) ~ 1,
    edulv1a %in% c(3, 4) ~ 2,
    edulv1a == 5 ~ 3,
    TRUE ~ NA_integer_
  ))

AT_ESS_r2$educ
table(AT_ESS_r2$educ)
sum(is.na(AT_ESS_r2$educ))

AT_ESS_r2$educ <- factor(AT_ESS_r2$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

#Für ESS3

```

```

AT_ESS_r3 <- AT_ESS_r3 %>%
  mutate(educ = case_when(
    edulvla %in% c(0, 1, 2) ~ 1,
    edulvla %in% c(3, 4) ~ 2,
    edulvla == 5 ~ 3,
    TRUE ~ NA_integer_
  ))

```

```

AT_ESS_r3$educ
table(AT_ESS_r3$educ)
sum(is.na(AT_ESS_r3$educ))

```

```

AT_ESS_r3$educ <- factor(AT_ESS_r3$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

```

#Für ESS4

```

library(dplyr)
AT_ESS_r4 <- AT_ESS_r4 %>%
  mutate(educ = case_when(
    edulvla %in% c(0, 1, 2) ~ 1,
    edulvla %in% c(3, 4) ~ 2,
    edulvla == 5 ~ 3,
    TRUE ~ NA_integer_
  ))

```

```

AT_ESS_r4$educ
table(AT_ESS_r4$educ)
sum(is.na(AT_ESS_r4$educ))

```

```

AT_ESS_r4$educ <- factor(AT_ESS_r4$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

```

ESS5

1 Lower education (ISCED 0-2) (0, 113, 129, 212, 213, 221, 222, 223)

2 Medium education (ISCED 3-4) (229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423)

```

# 3 Higher education (ISCED 5-6) (510, 520, 610, 620, 710, 720, 800)
AT_ESS_r5$educ <- case_when(
  AT_ESS_r5$edulvlb %in% c(0, 113, 129, 212, 213, 221, 222, 223) ~ 1,
  AT_ESS_r5$edulvlb %in% c(229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423) ~ 2,
  AT_ESS_r5$edulvlb %in% c(510, 520, 610, 620, 710, 720, 800) ~ 3,
  TRUE ~ NA_integer_
)

AT_ESS_r5$educ
table(AT_ESS_r5$educ)
sum(is.na(AT_ESS_r5$educ))
AT_ESS_r5$educ <- factor(AT_ESS_r5$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

# ESS7
AT_ESS_r7$educ <- case_when(
  AT_ESS_r7$edulvlb %in% c(0, 113, 129, 212, 213, 221, 222, 223) ~ 1,
  AT_ESS_r7$edulvlb %in% c(229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423) ~ 2,
  AT_ESS_r7$edulvlb %in% c(510, 520, 610, 620, 710, 720, 800) ~ 3,
  TRUE ~ NA_integer_
)

AT_ESS_r7$educ
table(AT_ESS_r7$educ)
sum(is.na(AT_ESS_r7$educ))
AT_ESS_r7$educ <- factor(AT_ESS_r7$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

#ESS8
AT_ESS_r8$educ <- case_when(
  AT_ESS_r8$edulvlb %in% c(0, 113, 129, 212, 213, 221, 222, 223) ~ 1,
  AT_ESS_r8$edulvlb %in% c(229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423) ~ 2,
  AT_ESS_r8$edulvlb %in% c(510, 520, 610, 620, 710, 720, 800) ~ 3,
  TRUE ~ NA_integer_
)

```

```

AT_ESS_r8$educ
table(AT_ESS_r8$educ)
sum(is.na(AT_ESS_r8$educ))
AT_ESS_r8$educ <- factor(AT_ESS_r8$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

# ESS9
AT_ESS_r9$educ <- case_when(
  AT_ESS_r9$edulvlb %in% c(0, 113, 129, 212, 213, 221, 222, 223) ~ 1,
  AT_ESS_r9$edulvlb %in% c(229, 311, 312, 313, 321, 322, 323, 412, 413, 421, 422, 423) ~ 2,
  AT_ESS_r9$edulvlb %in% c(510, 520, 610, 620, 710, 720, 800) ~ 3,
  TRUE ~ NA_integer_
)

AT_ESS_r9$educ
table(AT_ESS_r9$educ)
sum(is.na(AT_ESS_r9$educ))
AT_ESS_r9$educ <- factor(AT_ESS_r9$educ, levels = c(1, 2, 3), labels = c("Lower education",
"Medium education", "Higher education"))

## Sample Explanation
# ESS 1
# Age
age_counts_r1 <- table(AT_ESS_r1$agea)
age_percent_r1 <- prop.table(age_counts_r1) * 100
age_table_r1 <- cbind(age_counts_r1, age_percent_r1)
colnames(age_table_r1) <- c("Anzahl", "Prozent")
age_table_r1 <- as.data.frame(age_table_r1)

# Gender
gender_counts_r1 <- table(AT_ESS_r1$gndr)
gender_percent_r1 <- prop.table(gender_counts_r1) * 100
gender_table_r1 <- cbind(gender_counts_r1, gender_percent_r1)
colnames(gender_table_r1) <- c("Anzahl", "Prozent")

```

```

rownames(gender_table_r1) <- c("Männlich", "Weiblich")
gender_table_r1 <- as.data.frame(gender_table_r1)

# Domicil
domicil_counts_r1 <- table(AT_ESS_r1$domicil)
domicil_percent_r1 <- prop.table(domicil_counts_r1) * 100
domicil_table_r1 <- cbind(domicil_counts_r1, domicil_percent_r1)
colnames(domicil_table_r1) <- c("Anzahl", "Prozent")
domicil_table_r1 <- as.data.frame(domicil_table_r1)
domicil_table_r1

# Education
educ_counts_r1 <- table(AT_ESS_r1$educ)
educ_percent_r1 <- prop.table(educ_counts_r1) * 100
educ_table_r1 <- cbind(educ_counts_r1, educ_percent_r1)
colnames(educ_table_r1) <- c("Anzahl", "Prozent")
educ_table_r1 <- as.data.frame(educ_table_r1)

# ESS2
# Age
summary(AT_ESS_r2$agea)
age_counts_r2 <- table(AT_ESS_r2$agea)
age_percent_r2 <- prop.table(age_counts_r2) * 100
age_table_r2 <- cbind(age_counts_r2, age_percent_r2)
colnames(age_table_r2) <- c("Anzahl", "Prozent")
age_table_r2

# Gender
gender_counts_2 <- table(AT_ESS_r2$gndr)
gender_percent_2 <- prop.table(gender_counts_2) * 100
gender_table_2 <- cbind(gender_counts_2, gender_percent_2)
colnames(gender_table_2) <- c("Anzahl", "Prozent")
rownames(gender_table_2) <- c("Männlich", "Weiblich")
gender_table_2

```

```
#Domicil
domicil_counts_r2 <- table(AT_ESS_r2$domicil)
domicil_percent_r2 <- prop.table(domicil_counts_r2) * 100
domicil_table_r2 <- cbind(domicil_counts_r2, domicil_percent_r2)
colnames(domicil_table_r2) <- c("Anzahl", "Prozent")
domicil_table_r2 <- as.data.frame(domicil_table_r2)
```

```
# Education
educ_counts_r2 <- table(AT_ESS_r2$educ)
educ_percent_r2 <- prop.table(educ_counts_r2) * 100
educ_table_r2 <- cbind(educ_counts_r2, educ_percent_r2)
colnames(educ_table_r2) <- c("Anzahl", "Prozent")
educ_table_r2
```

```
# ESS3
# Age
summary(AT_ESS_r3$agea)
age_counts_r3 <- table(AT_ESS_r3$agea)
age_percent_r3 <- prop.table(age_counts_r3) * 100
age_table_r3 <- cbind(age_counts_r3, age_percent_r3)
colnames(age_table_r3) <- c("Anzahl", "Prozent")
age_table_r3
```

```
# Gender
gender_counts_3 <- table(AT_ESS_r3$gndr)
gender_percent_3 <- prop.table(gender_counts_3) * 100
gender_table_3 <- cbind(gender_counts_3, gender_percent_3)
colnames(gender_table_3) <- c("Anzahl", "Prozent")
rownames(gender_table_3) <- c("Männlich", "Weiblich")
gender_table_3
```

```
# Domicil
domicil_counts_r3 <- table(AT_ESS_r3$domicil)
domicil_percent_r3 <- prop.table(domicil_counts_r3) * 100
domicil_table_r3 <- cbind(domicil_counts_r3, domicil_percent_r3)
```

```

colnames(domicil_table_r3) <- c("Anzahl", "Prozent")
domicil_table_r3 <- as.data.frame(domicil_table_r3)

# Education
unique(AT_ESS_r3$educ)
educ_counts_r3 <- table(AT_ESS_r3$educ)
educ_percent_r3 <- prop.table(educ_counts_r3) * 100
educ_table_r3 <- cbind(educ_counts_r3, educ_percent_r3)
colnames(educ_table_r3) <- c("Anzahl", "Prozent")
educ_table_r3

# Employment
unique(AT_ESS_r3$emplrel)
empl_counts_r3 <- table(AT_ESS_r3$emplrel)
empl_percent_r3 <- prop.table(empl_counts_r3) * 100
empl_table_r3 <- cbind(empl_counts_r3, empl_percent_r3)
colnames(empl_table_r3) <- c("Anzahl", "Prozent")
empl_table_r3

# Unemployment
unique(AT_ESS_r3$uempl)
uempl_counts_r3 <- table(AT_ESS_r3$uempl)
uempl_percent_r3 <- prop.table(uempl_counts_r3) * 100
uempl_table_r3 <- cbind(uempl_counts_r3, uempl_percent_r3)
colnames(uempl_table_r3) <- c("Anzahl", "Prozent")
uempl_table_r3

unique(AT_ESS_r3$uempli)
uempl_counts_r3A <- table(AT_ESS_r3$uempli)
uempl_percent_r3A <- prop.table(uempl_counts_r3A) * 100
uempl_table_r3A <- cbind(uempl_counts_r3A, uempl_percent_r3A)
colnames(uempl_table_r3A) <- c("Anzahl", "Prozent")
uempl_table_r3A

```

```

# ESS4

# Age
age_counts_r4 <- table(AT_ESS_r4$agea)
age_percent_r4 <- prop.table(age_counts_r4) * 100
age_table_r4 <- cbind(age_counts_r4, age_percent_r4)
colnames(age_table_r4) <- c("Anzahl", "Prozent")
age_table_r4

# Gender
gender_counts_4 <- table(AT_ESS_r4$gndr)
gender_percent_4 <- prop.table(gender_counts_4) * 100
gender_table_4 <- cbind(gender_counts_4, gender_percent_4)
colnames(gender_table_4) <- c("Anzahl", "Prozent")
rownames(gender_table_4) <- c("Männlich", "Weiblich")
gender_table_4

# Domicil
domicil_counts_r4 <- table(AT_ESS_r4$domicil)
domicil_percent_r4 <- prop.table(domicil_counts_r4) * 100
domicil_table_r4 <- cbind(domicil_counts_r4, domicil_percent_r4)
colnames(domicil_table_r4) <- c("Anzahl", "Prozent")
domicil_table_r4 <- as.data.frame(domicil_table_r4)

# Education
educ_counts_4 <- table(AT_ESS_r4$educ)
educ_percent_4 <- prop.table(educ_counts_4) * 100
educ_table_4 <- cbind(educ_counts_4, educ_percent_4)
colnames(educ_table_4) <- c("Anzahl", "Prozent")
educ_table_4

# Employment
unique(AT_ESS_r4$emplrel)
table(AT_ESS_r4$emplrel)
empl_counts_r4 <- table(AT_ESS_r4$emplrel)
empl_percent_r4 <- prop.table(empl_counts_r4) * 100

```

```

empl_table_r4 <- cbind(empl_counts_r4, empl_percent_r4)
colnames(empl_table_r4) <- c("Anzahl", "Prozent")
empl_table_r4

# Unemployment
unique(AT_ESS_r4$uempl)
uempl_counts_r4 <- table(AT_ESS_r4$uempl)
uempl_percent_r4 <- prop.table(uempl_counts_r4) * 100
uempl_table_r4 <- cbind(uempl_counts_r4, uempl_percent_r4)
colnames(uempl_table_r4) <- c("Anzahl", "Prozent")
uempl_table_r4

unique(AT_ESS_r4$uempli)
uempl_counts_r4A <- table(AT_ESS_r4$uempli)
uempl_percent_r4A <- prop.table(uempl_counts_r4A) * 100
uempl_table_r4A <- cbind(uempl_counts_r4A, uempl_percent_r4A)
colnames(uempl_table_r4A) <- c("Anzahl", "Prozent")
uempl_table_r4A

# ESS5
# Age
summary(AT_ESS_r5$agea)
age_counts_5 <- table(AT_ESS_r5$agea)
age_percent_5 <- prop.table(age_counts_5) * 100
age_table_5 <- cbind(age_counts_5, age_percent_5)
colnames(age_table_5) <- c("Anzahl", "Prozent")
age_table_5

# Gender
gender_counts_5 <- table(AT_ESS_r5$gnr)
gender_percent_5 <- prop.table(gender_counts_5) * 100
gender_table_5 <- cbind(gender_counts_5, gender_percent_5)
colnames(gender_table_5) <- c("Anzahl", "Prozent")
rownames(gender_table_5) <- c("Männlich", "Weiblich")
gender_table_5

```

```
# Domicil
domicil_counts_r5 <- table(AT_ESS_r5$domicil)
domicil_percent_r5 <- prop.table(domicil_counts_r5) * 100
domicil_table_r5 <- cbind(domicil_counts_r5, domicil_percent_r5)
colnames(domicil_table_r5) <- c("Anzahl", "Prozent")
domicil_table_r5 <- as.data.frame(domicil_table_r5)
```

```
# Education
table(AT_ESS_r5$educ)
educ_counts_5 <- table(AT_ESS_r5$educ)
educ_percent_5 <- prop.table(educ_counts_5) * 100
educ_table_5 <- cbind(educ_counts_5, educ_percent_5)
colnames(educ_table_5) <- c("Anzahl", "Prozent")
educ_table_5
```

```
# Employment
unique(AT_ESS_r5$emplrel)
table(AT_ESS_r5$emplrel)
empl_counts_5 <- table(AT_ESS_r5$emplrel)
empl_percent_5 <- prop.table(empl_counts_5) * 100
empl_table_5 <- cbind(empl_counts_5, empl_percent_5)
colnames(empl_table_5) <- c("Anzahl", "Prozent")
empl_table_5
```

```
# Unemployment
unique(AT_ESS_r5$uempl)
table(AT_ESS_r5$uempl)
uempl_counts_5 <- table(AT_ESS_r5$uempl)
uempl_percent_5 <- prop.table(uempl_counts_5) * 100
uempl_table_5 <- cbind(uempl_counts_5, uempl_percent_5)
colnames(uempl_table_5) <- c("Anzahl", "Prozent")
uempl_table_5
```

```
unique(AT_ESS_r5$uempli)
```

```

uempl_counts_5A <- table(AT_ESS_r5$uempli)
uempl_percent_5A <- prop.table(uempl_counts_5A) * 100
uempl_table_5A <- cbind(uempl_counts_5A, uempl_percent_5A)
colnames(uempl_table_5A) <- c("Anzahl", "Prozent")
uempl_table_5A

```

```
# ESS7
```

```
# Age
```

```

age_counts_7 <- table(AT_ESS_r7$agea)
age_percent_7 <- prop.table(age_counts_7) * 100
age_table_7 <- cbind(age_counts_7, age_percent_7)
colnames(age_table_7) <- c("Anzahl", "Prozent")
age_table_7

```

```
# Gender
```

```

gender_counts_7 <- table(AT_ESS_r7$gndr)
gender_percent_7 <- prop.table(gender_counts_7) * 100
gender_table_7 <- cbind(gender_counts_7, gender_percent_7)
colnames(gender_table_7) <- c("Anzahl", "Prozent")
rownames(gender_table_7) <- c("Männlich", "Weiblich")
gender_table_7

```

```
# Domicil
```

```

domicil_counts_r7 <- table(AT_ESS_r7$domicil)
domicil_percent_r7 <- prop.table(domicil_counts_r7) * 100
domicil_table_r7 <- cbind(domicil_counts_r7, domicil_percent_r7)
colnames(domicil_table_r7) <- c("Anzahl", "Prozent")
domicil_table_r7 <- as.data.frame(domicil_table_r7)

```

```
# Education
```

```

educ_counts_r7 <- table(AT_ESS_r7$educ)
educ_percent_r7 <- prop.table(educ_counts_r7) * 100
educ_table_r7 <- cbind(educ_counts_r7, educ_percent_r7)
colnames(educ_table_r7) <- c("Anzahl", "Prozent")
educ_table_r7

```

```

# Employment
unique(AT_ESS_r7$emplrel)
table(AT_ESS_r7$emplrel)
empl_counts_r7 <- table(AT_ESS_r7$emplrel)
empl_percent_r7 <- prop.table(empl_counts_r7) * 100
empl_table_r7 <- cbind(empl_counts_r7, empl_percent_r7)
colnames(empl_table_r7) <- c("Anzahl", "Prozent")
empl_table_r7

# Unemployment
unique(AT_ESS_r7$uempl)
uempl_counts_r7 <- table(AT_ESS_r7$uempl)
uempl_percent_r7 <- prop.table(uempl_counts_r7) * 100
uempl_table_r7 <- cbind(uempl_counts_r7, uempl_percent_r7)
colnames(uempl_table_r7) <- c("Anzahl", "Prozent")
uempl_table_r7

unique(AT_ESS_r7$uempli)
uempl_counts_r7A <- table(AT_ESS_r7$uempli)
uempl_percent_r7A <- prop.table(uempl_counts_r7A) * 100
uempl_table_r7A <- cbind(uempl_counts_r7A, uempl_percent_r7A)
colnames(uempl_table_r7A) <- c("Anzahl", "Prozent")
uempl_table_r7A

# ESS8
# Age
summary(AT_ESS_r8$agea)
age_counts_r8 <- table(AT_ESS_r8$agea)
age_percent_r8 <- prop.table(age_counts_r8) * 100
age_table_r8 <- cbind(age_counts_r8, age_percent_r8)
colnames(age_table_r8) <- c("Anzahl", "Prozent")
age_table_r8

```

```

# Gender
gender_counts_r8 <- table(AT_ESS_r8$gndr)
gender_percent_r8 <- prop.table(gender_counts_r8) * 100
gender_table_r8 <- cbind(gender_counts_r8, gender_percent_r8)
colnames(gender_table_r8) <- c("Anzahl", "Prozent")
rownames(gender_table_r8) <- c("Männlich", "Weiblich")
gender_table_r8

# Domicil
domicil_counts_r8 <- table(AT_ESS_r8$domicil)
domicil_percent_r8 <- prop.table(domicil_counts_r8) * 100
domicil_table_r8 <- cbind(domicil_counts_r8, domicil_percent_r8)
colnames(domicil_table_r8) <- c("Anzahl", "Prozent")
domicil_table_r8 <- as.data.frame(domicil_table_r8)

# Education
unique(AT_ESS_r8$educ)
educ_counts_r8 <- table(AT_ESS_r8$educ)
educ_percent_r8 <- prop.table(educ_counts_r8) * 100
educ_table_r8 <- cbind(educ_counts_r8, educ_percent_r8)
colnames(educ_table_r8) <- c("Anzahl", "Prozent")
educ_table_r8

# Employment
unique(AT_ESS_r8$emplrel)
table(AT_ESS_r8$emplrel)

empl_counts_r8 <- table(AT_ESS_r8$emplrel)
empl_percent_r8 <- prop.table(empl_counts_r8) * 100
empl_table_r8 <- cbind(empl_counts_r8, empl_percent_r8)
colnames(empl_table_r8) <- c("Anzahl", "Prozent")
empl_table_r8

# Unemployment
unique(AT_ESS_r8$uempla)

```

```

uempl_counts_r8 <- table(AT_ESS_r8$uempl)
uempl_percent_r8 <- prop.table(uempl_counts_r8) * 100
uempl_table_r8 <- cbind(uempl_counts_r8, uempl_percent_r8)
colnames(uempl_table_r8) <- c("Anzahl", "Prozent")
uempl_table_r8

unique(AT_ESS_r8$uempli)
uempl_counts_r8A <- table(AT_ESS_r8$uempli)
uempl_percent_r8A <- prop.table(uempl_counts_r8A) * 100
uempl_table_r8A <- cbind(uempl_counts_r8A, uempl_percent_r8A)
colnames(uempl_table_r8A) <- c("Anzahl", "Prozent")
uempl_table_r8A

# ESS9
# Age
summary(AT_ESS_r9$agea)
age_counts_9 <- table(AT_ESS_r9$agea)
age_percent_9 <- prop.table(age_counts_9) * 100
age_table_9 <- cbind(age_counts_9, age_percent_9)
colnames(age_table_9) <- c("Anzahl", "Prozent")
age_table_9

# Gender
gender_counts_9 <- table(AT_ESS_r9$gndr)
gender_percent_9 <- prop.table(gender_counts_9) * 100
gender_table_9 <- cbind(gender_counts_9, gender_percent_9)
colnames(gender_table_9) <- c("Anzahl", "Prozent")
rownames(gender_table_9) <- c("Männlich", "Weiblich")
gender_table_9

# Domicil
domicil_counts_r9 <- table(AT_ESS_r9$domicil)
domicil_percent_r9 <- prop.table(domicil_counts_r9) * 100
domicil_table_r9 <- cbind(domicil_counts_r9, domicil_percent_r9)
colnames(domicil_table_r9) <- c("Anzahl", "Prozent")

```

```

domicil_table_r9 <- as.data.frame(domicil_table_r9)

# Education
educ_counts_r9 <- table(AT_ESS_r9$educ)
educ_percent_r9 <- prop.table(educ_counts_r9) * 100
educ_table_r9 <- cbind(educ_counts_r9, educ_percent_r9)
colnames(educ_table_r9) <- c("Anzahl", "Prozent")
educ_table_r9

# Religion All Rounds
rlgblg_counts_r1 <- table(AT_ESS_r1$rlgblg)
rlgblg_percent_r1 <- prop.table(rlgblg_counts_r1) * 100
rlgblg_table_r1 <- cbind(rlgblg_counts_r1, rlgblg_percent_r1)
colnames(rlgblg_table_r1) <- c("Anzahl", "Prozent")

rlgblg_counts_r2 <- table(AT_ESS_r2$rlgblg)
rlgblg_percent_r2 <- prop.table(rlgblg_counts_r2) * 100
rlgblg_table_r2 <- cbind(rlgblg_counts_r2, rlgblg_percent_r2)
colnames(rlgblg_table_r2) <- c("Anzahl", "Prozent")
rlgblg_table_r2 <- as.data.frame(rlgblg_table_r2)

rlgblg_counts_r3 <- table(AT_ESS_r3$rlgblg)
rlgblg_percent_r3 <- prop.table(rlgblg_counts_r3) * 100
rlgblg_table_r3 <- cbind(rlgblg_counts_r3, rlgblg_percent_r3)
colnames(rlgblg_table_r3) <- c("Anzahl", "Prozent")
rlgblg_table_r3 <- as.data.frame(rlgblg_table_r3)

rlgblg_counts_r4 <- table(AT_ESS_r4$rlgblg)
rlgblg_percent_r4 <- prop.table(rlgblg_counts_r4) * 100
rlgblg_table_r4 <- cbind(rlgblg_counts_r4, rlgblg_percent_r4)
colnames(rlgblg_table_r4) <- c("Anzahl", "Prozent")
rlgblg_table_r4 <- as.data.frame(rlgblg_table_r4)

rlgblg_counts_r5 <- table(AT_ESS_r5$rlgblg)
rlgblg_percent_r5 <- prop.table(rlgblg_counts_r5) * 100

```

```
rlgblg_table_r5 <- cbind(rlgblg_counts_r5, rlgblg_percent_r5)
colnames(rlgblg_table_r5) <- c("Anzahl", "Prozent")
rlgblg_table_r5 <- as.data.frame(rlgblg_table_r5)
```

```
rlgblg_counts_r7 <- table(AT_ESS_r7$rlgblg)
rlgblg_percent_r7 <- prop.table(rlgblg_counts_r7) * 100
rlgblg_table_r7 <- cbind(rlgblg_counts_r7, rlgblg_percent_r7)
colnames(rlgblg_table_r7) <- c("Anzahl", "Prozent")
rlgblg_table_r7 <- as.data.frame(rlgblg_table_r7)
```

```
rlgblg_counts_r8 <- table(AT_ESS_r8$rlgblg)
rlgblg_percent_r8 <- prop.table(rlgblg_counts_r8) * 100
rlgblg_table_r8 <- cbind(rlgblg_counts_r8, rlgblg_percent_r8)
colnames(rlgblg_table_r8) <- c("Anzahl", "Prozent")
rlgblg_table_r8 <- as.data.frame(rlgblg_table_r8)
```

```
rlgblg_counts_r9 <- table(AT_ESS_r9$rlgblg)
rlgblg_percent_r9 <- prop.table(rlgblg_counts_r9) * 100
rlgblg_table_r9 <- cbind(rlgblg_counts_r9, rlgblg_percent_r9)
colnames(rlgblg_table_r9) <- c("Anzahl", "Prozent")
rlgblg_table_r9 <- as.data.frame(rlgblg_table_r9)
```

Descriptive

Create new compressed dataset

```
new_data2 <- subset(AT_ESS_r1, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2a <- subset(AT_ESS_r2, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2b <- subset(AT_ESS_r3, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2c <- subset(AT_ESS_r4, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2d <- subset(AT_ESS_r5, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
```

```

new_data2f <- subset(AT_ESS_r7, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2g <- subset(AT_ESS_r8, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))
new_data2h <- subset(AT_ESS_r9, select = c("freehms", "gndr", "domicil", "agea", "essround",
"mainact", "educ", "inmdisc", "sclmeet", "rlgblg", "pspwght", "sclact"))

```

```

AT_ESS <- rbind(new_data2, new_data2a, new_data2b, new_data2c, new_data2d, new_data2f,
new_data2g, new_data2h)

```

```

View(AT_ESS)

```

```

AT_ESS$year <- ifelse(grepl("1", AT_ESS$essround), "2002",
  ifelse(grepl("2", AT_ESS$essround), "2004",
    ifelse(grepl("3", AT_ESS$essround), "2006",
      ifelse(grepl("7", AT_ESS$essround), "2014",
        ifelse(grepl("8", AT_ESS$essround), "2016",
          ifelse(grepl("9", AT_ESS$essround), "2018",
            ifelse(grepl("4", AT_ESS$essround), "2008",
              ifelse(grepl("5", AT_ESS$essround), "2010",
                "NA"))))))))

```

```

unique(AT_ESS$year)

```

```

## Measures of correlation

```

```

# Chi Quadrat Test

```

```

chisq.test(AT_ESS$freehms, AT_ESS$gndr)
chisq.test(AT_ESS$freehms, AT_ESS$domicil)
chisq.test(AT_ESS$freehms, AT_ESS$sclact)
chisq.test(AT_ESS$freehms, AT_ESS$gndr)
chisq.test(AT_ESS$freehms, AT_ESS$rlgblg)
chisq.test(AT_ESS$freehms, AT_ESS$mainact)

```

```

# Cramers V

```

```

cramersV(AT_ESS$freehms, AT_ESS$educ)

```

```

cramersV(AT_ESS$freehms, AT_ESS$domicil)
cramersV(AT_ESS$freehms, AT_ESS$sclact)
cramersV(AT_ESS$freehms, AT_ESS$gndr)
cramersV(AT_ESS$freehms, AT_ESS$rlgblg)
cramersV(AT_ESS$freehms, AT_ESS$mainact)

# Weighting
library(survey)
library(data.table)
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)
svymean(~AT_ESS$freehms, design, na.rm = TRUE)

## Attitude
unique(AT_ESS$freehms)
library(dplyr)
# Neue leere Variable erstellen
AT_ESS$freehms1 <- NA
# Kategorien umkodieren
AT_ESS$freehms1[AT_ESS$freehms %in% c(5)] <- 1
AT_ESS$freehms1[AT_ESS$freehms %in% c(4)] <- 2
AT_ESS$freehms1[AT_ESS$freehms %in% c(3)] <- 3
AT_ESS$freehms1[AT_ESS$freehms %in% c(2)] <- 4
AT_ESS$freehms1[AT_ESS$freehms %in% c(1)] <- 5
AT_ESS$freehms1[AT_ESS$freehms %in% c(7, 8, 9)] <- NA

# Gewichtungvariable
# Laden des survey-Pakets
library(survey)
# Erstellen eines survey-Designobjekts mit Gewichtungvariable
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)

# Gewichtete relative Häufigkeiten
# Gewichtungvariable anwenden auf Häufigkeitsauszählung von freehms nach year
freehms_freq_weighted <- svytable(~freehms1 + year, design, na.rm = TRUE)
# Prozentsätze berechnen

```

```

freehms_prop <- prop.table(freehms_freq_weighted, margin = 2) * 100
# Runde die Werte auf 1 Nachkommastelle
freehms_prop_rounded <- round(freehms_prop, digits = 0)
# Daten in das gewünschte Format bringen
freehms_prop_df <- as.data.frame(freehms_prop_rounded)
colnames(freehms_prop_df) <- c("Attitude", "Year", "Percent")
# Filtere NAs aus dem Dataframe
freehms_prop_df <- freehms_prop_df[complete.cases(freehms_prop_df), ]
View(freehms_prop_df)
# Total Percent
total_percent <- aggregate(Percent ~ Year, data = freehms_prop_df, FUN = sum)
colnames(total_percent) <- c("Year", "TotalPercent")
# Füge die Gesamtsumme dem Dataframe hinzu
freehms_prop_df <- merge(freehms_prop_df, total_percent, by = "Year")
# Berechne den Anteil ohne NAs (Percent ohne NA / TotalPercent * 100)
freehms_prop_df$PercentWithoutNA <- freehms_prop_df$Percent /
freehms_prop_df$TotalPercent * 100
View(freehms_prop_df)

# Auszählung der gewichteten Mittelwerte von freehms nach ESS-Runden
w.mean_counts <- svyby(~freehms1, ~year, design, FUN = svymean, na.rm = TRUE)

View(w.mean_counts)
# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
w.mean_data <- data.frame(Year = names(w.mean_counts, "variables"), Median =
w.mean_counts$freehms1)

# Gewichtungvariable anwenden auf Häufigkeitsauszählung von freehms nach year
freehms_freq_weighted <- svytable(~freehms1 + year, design)
# Prozentsätze berechnen
freehms_prop <- prop.table(freehms_freq_weighted, margin = 2) * 100
# Runde die Werte auf 1 Nachkommastelle
freehms_prop_rounded <- round(freehms_prop, digits = 0)
# Daten in das gewünschte Format bringen
freehms_prop_df <- as.data.frame(freehms_prop_rounded)

```

```

colnames(freehms_prop_df) <- c("Attitude", "Year", "Percent")
# Filtere NAs aus dem Dataframe
freehms_prop_df <- freehms_prop_df[complete.cases(freehms_prop_df), ]
View(freehms_prop_df)
# Total Percent
total_percent <- aggregate(Percent ~ Year, data = freehms_prop_df, FUN = sum)
colnames(total_percent) <- c("Year", "TotalPercent")
# Füge die Gesamtsumme dem Dataframe hinzu
freehms_prop_df <- merge(freehms_prop_df, total_percent, by = "Year")

# Berechne den Anteil ohne NAs (Percent ohne NA / TotalPercent * 100)
freehms_prop_df$PercentWithoutNA <- freehms_prop_df$Percent /
freehms_prop_df$TotalPercent * 100
View(freehms_prop_df)

## Domicil
# Domicil umkodieren
unique(AT_ESS$domicil)
print(t_test)
# Neue leere Variable erstellen
AT_ESS$new_domicil <- NA
# Kategorien umkodieren
AT_ESS$new_domicil[AT_ESS$domicil %in% c(1, 2)] <- 1 # Urbanity
AT_ESS$new_domicil[AT_ESS$domicil %in% c(3)] <- 2 # Urban-Periphery
AT_ESS$new_domicil[AT_ESS$domicil %in% c(4, 5)] <- 3 # Periphery
# Entfernen von Antwortausprägungen 7, 8, 9
AT_ESS$new_domicil[AT_ESS$domicil %in% c(7, 8, 9)] <- NA
table(AT_ESS$new_domicil)

# Im Zeitverlauf relative Häufigkeiten (%)
# Auszählung der relativen Häufigkeiten von freehms nach domicil und year
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)

# Auszählung der gewichteten Mittelwerte von freehms nach domicil
w.mean_counts <- svyby(~freehms1, ~ new_domicil, design, FUN = svymean, na.rm = TRUE)

```

```
View(w.mean_counts)
```

```
# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
```

```
w.mean_data <- data.frame(Year = names(w.mean_counts, "variables"), Median =  
w.mean_counts$freehms1)
```

```
# Gewichtungvariable anwenden auf Häufigkeitsauszählung
```

```
frdom_year_freq <- xtabs(~ AT_ESS$new_domicil + AT_ESS$year + AT_ESS$freehms, data  
= AT_ESS)
```

```
frdom_year_prop <- prop.table(frdom_year_freq, margin = c(1, 2)) * 100
```

```
# Umwandeln in einen Dataframe und Anpassen der Spaltennamen
```

```
frdom_year_prop_df <- as.data.frame.table(frdom_year_prop)
```

```
colnames(frdom_year_prop_df) <- c("Domicil", "Year", "Attitude", "Counts")
```

```
View(frdom_year_prop_df)
```

```
# Entferne NAs aus dem DataFrame
```

```
frdom_year_prop_df <- na.omit(frdom_year_prop_df)
```

```
frdom_year_prop_df$Counts <- round(frdom_year_prop_df$Counts, digits = 1)
```

```
View(frdom_year_prop_df)
```

```
# Auszählung der gewichteten Mittelwerte von freehms nach ESS-Runden und neuen Domicil-  
Ausprägungen
```

```
# Laden des survey-Pakets
```

```
library(survey)
```

```
# Erstellen eines survey-Designobjekts mit Gewichtungvariable
```

```
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)
```

```
w.mean_counts <- svytotal(~freehms, by = ~year + new_domicil, design = design)
```

```
# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
```

```
w.mean_data <- data.frame(Year = names(w.mean_counts, "variables"), Median =  
w.mean_counts$new_domicil)
```

```
# Häufigkeitsauszählungen Umkodierung
```

```
freq_freedom_1a <- table(AT_ESS$freehms, AT_ESS$new_domicil)
```

```
prop_freedom_1a <- prop.table(table(AT_ESS$freehms, AT_ESS$new_domicil))*100
```

```
table_freedom_1a <- cbind(freq_freedom_1a, prop_freedom_1a)
table_freedom_1a
```

```
# mit umkodierung
```

```
table(AT_ESS$freehms, AT_ESS$new_domicil)
prop.table(table(AT_ESS$freehms, AT_ESS$new_domicil))*100
prop.table(table(AT_ESS$freehms, AT_ESS$new_domicil),1)*100
prop.table(table(AT_ESS$freehms, AT_ESS$new_domicil),2)*100
```

```
# nach Jahren
```

```
table(AT_ESS$freehms, AT_ESS$new_domicil, AT_ESS$year)
prop.table(table(AT_ESS$freehms, AT_ESS$new_domicil, AT_ESS$year))*100
```

```
freq_domicil <- table(AT_ESS$domicil)
prop_domicil <- prop.table(table(AT_ESS$domicil))*100
table_domicil <- cbind(freq_domicil, prop_domicil)
colnames(table_domicil) <- c("Anzahl", "Prozent")
table_domicil
```

```
# Auszählung der relativen Häufigkeiten von "AT_ESS$domicil" nach ESS-Runden
```

```
domicil_freq <- table(AT_ESS$year, AT_ESS$domicil, exclude = NULL)
domicil_prop <- prop.table(domicil_freq, margin = 1) * 100
domicil_prop <- round(domicil_prop, digits = 1)
domicil_prop_df <- as.data.frame.table(domicil_prop)
colnames(domicil_prop_df) <- c("Year", "Residence", "Counts")
domicil_prop_long <- tidyr::gather(domicil_prop_df, Year, Counts, -Residence)
View(domicil_prop_df)
```

```
# Auszählung der relativen Häufigkeiten von freehms nach domicil und year
```

```
frdom_year_freq <- xtabs(~ AT_ESS$new_domicil + AT_ESS$year + AT_ESS$freehms, data
= AT_ESS)
frdom_year_prop <- prop.table(frdom_year_freq, margin = c(1, 2)) * 100
```

```
# Umwandeln in einen Dataframe und Anpassen der Spaltennamen
```

```
frdom_year_prop_df <- as.data.frame.table(frdom_year_prop)
```

```

colnames(frdom_year_prop_df) <- c("Domicil", "Year", "Attitude", "Counts")

# Filtern der relevanten Attitude-Kategorien (Agree strongly und Agree)
frdom_year_prop_df <- frdom_year_prop_df[frdom_year_prop_df$Attitude %in% c(1, 2), ]
View(frdom_year_prop_df)

# ANOVA
# Daten filtern und fehlende Werte entfernen
data_filtered <- na.omit(AT_ESS[, c("freehms1", "domicil")])
# Durchführung des ANOVA-Tests
anova_test <- aov(freehms1 ~ domicil, data = data_filtered)
print(summary(anova_test))
anova_result <- anova_test

# Führe den Anovatest durch und passe die Signifikanzausgabe an
aov(formula = freehms1 ~ domicil, data = data_filtered, signif.level = 0.001)

# Gib das Ergebnis aus
print(anova_result)

# Daten filtern und fehlende Werte entfernen
data_filtered <- na.omit(AT_ESS[, c("freehms1", "domicil")])

# Durchführung des ANOVA-Tests mit angepasster Signifikanzausgabe
anova_result <- aov(formula = freehms1 ~ domicil, data = data_filtered)
print(anova_result, signif.level = 0.001)

### Contact
#Contact
table(AT_ESS$sclact)
unique(AT_ESS$sclact)

#Recoden
AT_ESS$new_sclact <- NA

```

```

# Kategorien umkodieren
AT_ESS$new_sclact[AT_ESS$sclact %in% c(1, 2)] <- 1
AT_ESS$new_sclact[AT_ESS$sclact %in% c(3)] <- 2
AT_ESS$new_sclact[AT_ESS$sclact %in% c(4, 5)] <- 3
# Entfernen von Antwortausprägungen 7, 8, 9
AT_ESS$new_sclact[AT_ESS$sclact %in% c(7, 8, 9)] <- NA
table(AT_ESS$new_sclact)

# Auszählung der relativen Häufigkeiten von freehms nach sclact
frcon_freq <- table(AT_ESS$new_sclact, AT_ESS$freehms, exclude = NULL)
frcon_prop <- prop.table(frcon_freq, margin = 1) * 100
frcon_prop_df <- as.data.frame.table(frcon_prop)
colnames(frcon_prop_df) <- c("Contact", "Attitude", "Percent")
# Auf eine Nachkomma stelle u Entferne NAs aus dem DataFrame
frcon_prop_df$Percent <- round(frcon_prop_df$Percent, digits = 1)
View(frcon_prop_df)
frcon_prop_df <- na.omit(frcon_prop_df)

# Gewichten
# Laden des survey-Pakets
library(survey)
# Erstellen eines survey-Designobjekts mit Gewichtungvariable
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)
# Auszählung der gewichteten Mittelwerte von freehms nach ESS-Runden und neuen Domicil-
Ausprägungen
w.mean_counts_sclact <- svytotal(~freehms, by = ~year + new_sclact, design = design)
# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
w.mean_data_sclact <- data.frame(Year = names(w.mean_counts_sclact, "variables"), Median =
w.mean_counts$new_sclact)

## Education
unique(AT_ESS$educ)
# Auszählung der Mittelwerte von freehms nach year und educ
mean_counts_educ <- tapply(AT_ESS$freehms1, list(AT_ESS$year, AT_ESS$educ), mean,
na.rm = TRUE)

```

```

View(mean_counts_educ)
# Gewichtete Werte
mean_counts_educ <- svytotal(~freehms, by = ~year + educ, design = design)
View(mean_counts_educ)

# Auszählung der gewichteten Mittelwerte von freehms nach year und educ
mean_counts_educ_weighted <- svyby(~freehms1, ~year + educ, design, FUN = svymean,
na.rm = TRUE)

# Extrahieren der Informationen aus dem Ergebnisobjekt
year <- as.numeric(attr(mean_counts_educ_weighted, "dimnames")$year)
religion <- as.numeric(attr(mean_counts_educ_weighted, "dimnames")$educ)
weighted_mean <- mean_counts_educ_weighted$freehms1

# Auszählung der relativen Häufigkeiten von freehms nach educ
ef_freq <- table(AT_ESS$educ, AT_ESS$freehms, exclude = NULL)
ef_prop <- prop.table(ef_freq, margin = 1) * 100
ef_prop_df <- as.data.frame.table(ef_prop)
colnames(ef_prop_df) <- c("Education Status", "Attitude", "Percent")

# Auf eine Nachkomma stelle u Entferne NAs aus dem DataFrame
ef_prop_df$Percent <- round(ef_prop_df$Percent, digits = 0)
ef_prop_df <- na.omit(ef_prop_df)
View(ef_prop_df)

### Gender
# Auszählung der Mittelwerte von freehms nach gender und year
# Datenrahmen in ein survey-Objekt umwandeln
library(survey)
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)
# Auszählung der gewichteten Mittelwerte von freehms nach ESS-Runden und neuen Domicil-
Ausprägungen
w.mean_counts_gndr <- svytotal(~freehms1, by = ~year + gndr, design = design, na.rm =
TRUE)

```

```

w.mean_data_gndr <- data.frame(w.mean_counts_gndr)
View(w.mean_data_gndr)
# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
w.mean_data_gndr <- data.frame(Year = names(w.mean_counts_sclact, "variables"), Median =
w.mean_counts$gndr)

# gewichtete Mittelwerte
library(survey)
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)
unique(AT_ESS$gndr)
mean_counts_gndr <- tapply(AT_ESS$freehms1, list(AT_ESS$year, AT_ESS$gndr), mean,
na.rm = TRUE)
View(mean_counts_gndr)
unique(AT_ESS_r1$gndr)

# Auszählung der relativen Häufigkeiten von freehms nach gender
fg_freq <- table(AT_ESS$gndr, AT_ESS$freehms, exclude = NULL)
fg_prop <- prop.table(fg_freq, margin = 1) * 100
fg_prop_df <- as.data.frame.table(fg_prop)
colnames(fg_prop_df) <- c("Gender", "Attitude", "Percent")
# Auf eine Nachkomma stelle u Entferne NAs aus dem DataFrame
fg_prop_df$Percent <- round(fg_prop_df$Percent, digits = 1)
fg_prop_df <- na.omit(fg_prop_df)
View(fg_prop_df)

# Auszählung der relativen Häufigkeiten von freehms nach gender und year
gndr_year_freq <- xtabs(~ AT_ESS$gndr + AT_ESS$year + AT_ESS$freehms, data =
AT_ESS)
gndr_year_prop <- prop.table(gndr_year_freq, margin = c(1, 2)) * 100

# Umwandeln in einen Dataframe und Anpassen der Spaltennamen
gndr_year_prop_df <- as.data.frame.table(gndr_year_prop)
colnames(gndr_year_prop_df) <- c("Gender", "Year", "Attitude", "Percent")
View(gndr_year_prop_df)
gndr_year_prop_df <- na.omit(gndr_year_prop_df)

```

```

gndr_year_prop_df$Percent <- round(gndr_year_prop_df$Percent, digits = 1)
View(gndr_year_prop_df)

## Age
table(AT_ESS$agea)
AT_ESS$agea
# Auszählung der relativen Häufigkeiten von freehms nach gender
fg_freq <- table(AT_ESS$agea, AT_ESS$freehms, exclude = NULL)
fg_prop <- prop.table(fg_freq, margin = 1) * 100
fg_prop_df <- as.data.frame.table(fg_prop)
colnames(fg_prop_df) <- c("Age", "Attitude", "Percent")
# Auf eine Nachkomma stelle u Entferne NAs aus dem DataFrame
fg_prop_df$Percent <- round(fg_prop_df$Percent, digits = 0)
fg_prop_df <- na.omit(fg_prop_df)
View(fg_prop_df)

# Filtern nach Age Groups 15-34 65+
fg_prop_df_filtered <- fg_prop_df[fg_prop_df$Age == "15-34", ]
View(fg_prop_df_filtered)
fg_prop_df_filtered2 <- fg_prop_df[fg_prop_df$Age == "35-49", ]
View(fg_prop_df_filtered2)
fg_prop_df_filtered3 <- fg_prop_df[fg_prop_df$Age == "50-64", ]
View(fg_prop_df_filtered3)
fg_prop_df_filtered3 <- fg_prop_df[fg_prop_df$Age == "65+", ]
View(fg_prop_df_filtered3)

# Auszählung der Mittelwerte von Attitude und Age
agea_num <- as.numeric(AT_ESS$agea)
mean_counts_fg <- tapply(AT_ESS$freehms, agea_num, mean, na.rm = TRUE)
mean_data_fg <- data.frame(Age = names(mean_counts_fg), Median = mean_counts_fg)
mean_data_fg$Median <- round(mean_data_fg$Median, digits = 3)
View(mean_data_fg)

# Auszählung der gewichteten Mittelwerte von freehms nach age und year
# Laden des survey-Pakets

```

```

library(survey)

# Auszählung der gewichteten Mittelwerte von freehms nach ESS-Runden Age
w.mean_counts_agea <- svytotal(~freehms1, by = ~year + agea, design = design, na.rm =
TRUE)
w.mean_data_agea <- data.frame(w.mean_counts_agea)
View(w.mean_data_agea)

# Erstellen eines Dataframes mit den ESS-Runden und den gewichteten Mittelwerten
w.mean_data_agea <- data.frame(Year = names(w.mean_counts_sclact, "variables"), Median =
w.mean_counts$gndr)

## Religion

# Auszählung der Mittelwerte von freehms nach Year und religion
mean_counts_rel <- tapply(AT_ESS$freehms1, list(AT_ESS$year, AT_ESS$rlgblg), mean, na.rm
= TRUE)
View(mean_counts_rel)

#Gewichten

# Laden des survey-Pakets
library(survey)

# Erstellen eines survey-Designobjekts mit Gewichtungvariable
design <- svydesign(ids = ~1, weights = ~pspwght, data = AT_ESS)

# Auszählung der gewichteten Mittelwerte von freehms nach Year und religion
mean_counts_rel_weighted <- svyby(~freehms1, ~year + rlgbg, design, FUN = svymean, na.rm
= TRUE)

# Extrahieren der Informationen aus dem Ergebnisobjekt
year <- as.numeric(attr(mean_counts_rel_weighted, "dimnames")$year)
religion <- as.numeric(attr(mean_counts_rel_weighted, "dimnames")$rlgblg)
weighted_mean <- mean_counts_rel_weighted$freehms1

# Auszählung der gewichteten Mittelwerte von freehms nach Year und religion
mean_counts_rel_weighted <- svyby(~freehms1, ~year + rlgbg, design, FUN = svymean, na.rm
= TRUE)
View(mean_counts_rel_weighted)

```

```

## Multiple Regression
# Umkodierung
# Place of Residence
unique(AT_ESS$domicil)

# Place of Residence
AT_ESS$new_domicil <- NA
AT_ESS$new_domicil[AT_ESS$domicil %in% c(1, 2)] <- 0 # Urban
AT_ESS$new_domicil[AT_ESS$domicil %in% c(3)] <- 1 # Urban-Periphery
AT_ESS$new_domicil[AT_ESS$domicil %in% c(4, 5)] <- 2 # Periphery
AT_ESS$new_domicil[AT_ESS$domicil %in% c(7, 8, 9)] <- NA
class(AT_ESS$new_domicil)
AT_ESS$new_domicil <- as.numeric(AT_ESS$new_domicil)

## Trial for binary variable
AT_ESS$new_domicil <- NA
AT_ESS$new_domicil[AT_ESS$domicil %in% c(1, 2, 3)] <- 0 # Urban
AT_ESS$new_domicil[AT_ESS$domicil %in% c(4, 5)] <- 1 # Rural
AT_ESS$new_domicil[AT_ESS$domicil %in% c(7, 8, 9)] <- NA
class(AT_ESS$new_domicil)
AT_ESS$new_domicil <- factor(AT_ESS$new_domicil, ordered = TRUE)

# Intensity of Contact, compared to others of same age
unique(AT_ESS$sclact)
AT_ESS$new_sclact <- NA
AT_ESS$new_sclact[AT_ESS$sclact %in% c(1, 2)] <- 0 # Less than most
AT_ESS$new_sclact[AT_ESS$sclact %in% c(3)] <- 1 # About the same
AT_ESS$new_sclact[AT_ESS$sclact %in% c(4, 5)] <- 2 # More than most
AT_ESS$new_sclact[AT_ESS$sclact %in% c(7, 8, 9)] <- NA
AT_ESS$new_sclact <- as.numeric(AT_ESS$new_sclact)
AT_ESS$new_sclact <- factor(AT_ESS$new_sclact, ordered = TRUE)
class(AT_ESS$new_sclact)

# Gender
unique(AT_ESS$gndr)

```

```

AT_ESS$new_gndr <- NA
AT_ESS$new_gndr[AT_ESS$gndr %in% c(1)] <- 0 # Male
AT_ESS$new_gndr[AT_ESS$gndr %in% c(2)] <- 1 # Female
AT_ESS$new_gndr[AT_ESS$gndr %in% c(9)] <- NA
AT_ESS$new_gndr <- as.numeric(AT_ESS$new_gndr)

# Religious Yes No
unique(AT_ESS$rlgblg)
AT_ESS$new_rlgblg <- NA
AT_ESS$new_rlgblg[AT_ESS$rlgblg %in% c(1)] <- 1
AT_ESS$new_rlgblg[AT_ESS$rlgblg %in% c(2)] <- 0
AT_ESS$new_rlgblg[AT_ESS$rlgblg %in% c(7, 8, 9)] <- NA
AT_ESS$new_rlgblg <- as.numeric(AT_ESS$new_rlgblg)
class(AT_ESS$new_rlgblg)
table(AT_ESS$new_rlgblg)

# Age Groups
AT_ESS$agea <- factor(AT_ESS$agea, labels = c("15-34", "35-49", "50-64", "65+"))
AT_ESS$new_agea <- NA
AT_ESS$new_agea[AT_ESS$agea %in% c("15-34")] <- 0
AT_ESS$new_agea[AT_ESS$agea %in% c("35-49")] <- 1
AT_ESS$new_agea[AT_ESS$agea %in% c("50-64")] <- 2
AT_ESS$new_agea[AT_ESS$agea %in% c("65+")] <- 3
class(AT_ESS$new_agea)
table(AT_ESS$new_agea)

AT_ESSnew_agea <- as.numeric(AT_ESS$new_agea)

AT_ESS_R <- subset(AT_ESS, select = c("freehms1", "new_gndr", "new_domicil", "new_agea",
"year", "new_educ", "new_rlgblg", "new_sclact"))
AT_ESS_R <- na.omit(AT_ESS_R)

# Dummy Variablen kodieren
install.packages("car")
install.packages("carData")

```

```

library(car)
library(carData)
AT_ESS_R$Urban <- recode(AT_ESS_R$new_domicil, "0=1; 1:2=0")
AT_ESS_R$UrbRur <- recode(AT_ESS_R$new_domicil, "1=1; 2=0; 0=0")
AT_ESS_R$Rural <- recode(AT_ESS_R$new_domicil, "2=1; 0:1=0")

table(AT_ESS_R$Urban)
table(AT_ESS_R$UrbRur)
table(AT_ESS_R$Rural) # Referenzkategorien, höchste Ausprägung


AT_ESS_R$LessContact <- recode(AT_ESS_R$new_sclact, "0=1; 1:2=0")
AT_ESS_R$SameContact <- recode(AT_ESS_R$new_sclact, "1=1; 2=0; 0=0") #
Referenzkategorie
AT_ESS_R$MoreContact <- recode(AT_ESS_R$new_sclact, "2=1; 0:1=0")

table(AT_ESS_R$LessContact)
table(AT_ESS_R$SameContact)
table(AT_ESS_R$MoreContact)


AT_ESS_R$Young <- recode(AT_ESS_R$new_agea, "0=1; 1:3=0")
AT_ESS_R$MiddleAge1 <- recode(AT_ESS_R$new_agea, "1=1; 2=0; 3=0; 0=0")
AT_ESS_R$MiddleAge2 <- recode(AT_ESS_R$new_agea, "2=1; 1=0; 3=0; 0=0")
AT_ESS_R$Old <- recode(AT_ESS_R$new_agea, "3=1; 0:2=0")

table(AT_ESS_R$Young) #Referenzkategorie
table(AT_ESS_R$MiddleAge1)
table(AT_ESS_R$MiddleAge2)
table(AT_ESS_R$Old)


AT_ESS_R$LowEduc <- recode(AT_ESS_R$new_educ, "0=1; 1:2=0")
AT_ESS_R$MedEduc <- recode(AT_ESS_R$new_educ, "1=1; 2=0; 0=0")
AT_ESS_R$HighEduc <- recode(AT_ESS_R$new_educ, "2=1; 0:1=0")

table(AT_ESS_R$LowEduc)

```

```

table(AT_ESS_R$MedEduc) # Referenzkategorie
table(AT_ESS_R$HighEduc)

# ESS Round
AT_ESS_R$year_numeric <- as.numeric(AT_ESS_R$year)
unique(AT_ESS_R$year_numeric)
AT_ESS_R$ESS1 <- ifelse(AT_ESS_R$year_numeric == 2002, 1, 0)
AT_ESS_R$ESS2 <- ifelse(AT_ESS_R$year_numeric == 2004, 1, 0)
AT_ESS_R$ESS3 <- ifelse(AT_ESS_R$year_numeric == 2006, 1, 0)
AT_ESS_R$ESS4 <- ifelse(AT_ESS_R$year_numeric == 2008, 1, 0)
AT_ESS_R$ESS5 <- ifelse(AT_ESS_R$year_numeric == 2010, 1, 0)
AT_ESS_R$ESS7 <- ifelse(AT_ESS_R$year_numeric == 2014, 1, 0)
AT_ESS_R$ESS8 <- ifelse(AT_ESS_R$year_numeric == 2016, 1, 0)
AT_ESS_R$ESS9 <- ifelse(AT_ESS_R$year_numeric == 2018, 1, 0)

table(AT_ESS_R$ESS1)
# Normalverteilung
# Histogramm der abhängigen Variablen (Einstellung zu sexuellen Minderheiten)
hist(AT_ESS$new_domicil, main = "Histogram: Einstellung zu sexuellen Minderheiten")
# QQ-Plot der abhängigen Variablen
qqnorm(AT_ESS$new_domicil)
qqline(AT_ESS$new_domicil)
# Histogramm und QQ-Plot für jede unabhängige Variable (z.B. AT_ESS$domicil)
# Wiederhole den Code für jede unabhängige Variable

# Regressionmodel 1
modell3 <- lm(freehms1 ~ Urban + Rural, data = AT_ESS_R)
summary(modell3)
modell3a <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact, data = AT_ESS_R)
modell3b <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + ESS1 + ESS2 +
ESS3 + ESS4 + ESS5 + ESS7 + ESS8, data = AT_ESS_R)
modell3c <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + ESS1 + ESS2 +
ESS3 + ESS4 + ESS5 + ESS7 + ESS8 + Young + MiddleAge2 + Old, data = AT_ESS_R)

```

```

modell3d <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + ESS1 + ESS2 +
ESS3 + ESS4 + ESS5 + ESS7 + ESS8 + Young + MiddleAge2 + Old + LowEduc + HighEduc,
data = AT_ESS_R)
modell3e <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + ESS1 + ESS2 +
ESS3 + ESS4 + ESS5 + ESS7 + ESS8 + Young + MiddleAge2 + Old + LowEduc + HighEduc
+ new_rlgbg, data = AT_ESS_R)
modell3f <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + ESS1 + ESS2 +
ESS3 + ESS4 + ESS5 + ESS7 + ESS8 + Young + MiddleAge2 + Old + LowEduc + HighEduc
+ new_rlgbg + new_gndr, data = AT_ESS_R)
summary(modell3f)

library(texreg)
RegMod1 <- list(modell3, modell3a, modell3b, modell3c, modell3d, modell3e, modell3f)
names(RegMod1) <- c("Modell 1", "Modell 2", "Modell 3", "Modell 4", "Modell 5", "Modell6",
"Modell7")
screenreg(RegMod1)
library(texreg)
# Zusammenfassung des Modells mit texreg
RegMod1_summary <- htmlreg(RegMod1)
# Exportiere die Zusammenfassung als HTML-Datei
writeLines(RegMod1_summary, "RegMod1.html")

## Multikollinearität (VIFs)
library(car)
vif_results1 <- vif(modell3f)
print(vif_results1)

# Homoskedastizität
# Streudiagramm der Residuen
residuals1 <- residuals(modell3f) # Hier gehe ich davon aus, dass du das Modell bereits mit lm()
erstellt hast
plot(fitted(modell3f), residuals1, main = "Streudiagramm: Residuen vs. Vorhersagen", xlab =
"Vorhersagen", ylab = "Residuen")

# Breusch-Pagan-Test auf Homoskedastizität

```

```

library(lmtest)
bptest(modell3f)

# Regressionmodell 2
# Interaktionseffekte zu Domicil/Year
# Year Umkodieren
unique(AT_ESS_R$year_numeric)
AT_ESS_R$year_recode <- AT_ESS_R$year_numeric - 2002

modell2 <- lm(freehms1 ~ Urban + Rural + year_recode + Urban:year_recode +
Rural:year_recode, data = AT_ESS_R)
modell2a <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
Urban:year_recode + Rural:year_recode, data = AT_ESS_R)
modell2b <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
LowEduc + HighEduc + Urban:year_recode + Rural:year_recode, data = AT_ESS_R)
modell2c <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
LowEduc + HighEduc + Young + MiddleAge2 + Old + Urban:year_recode +
Rural:year_recode, data = AT_ESS_R)
modell2d <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgblg + Urban:year_recode +
Rural:year_recode, data = AT_ESS_R)
modell2e <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgblg + new_gndr +
Urban:year_recode + Rural:year_recode, data = AT_ESS_R)
modell2f <- lm(freehms1 ~ Urban + Rural + year_recode + LessContact + MoreContact +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgblg + new_gndr +
Urban:year_recode + Rural:year_recode, data = AT_ESS_R)
summary(modell2)
summary(modell2f)

library(texreg)
RegMod2 <- list(modell2, modell2a, modell2b, modell2c, modell2d, modell2e, modell2f)
names(RegMod2) <- c("Model 1", "Model 2", "Model 3", "Model 4", "Model 5", "Model 6",
"Model 7")
screenreg(RegMod2)

```

```

library(texreg)
# Zusammenfassung des Modells mit texreg
RegMod2_summary <- htmlreg(RegMod2)
# Exportiere die Zusammenfassung als HTML-Datei
writeLines(RegMod2_summary, "RegMod2.html")

## Multikollinearität (VIFs)
library(car)
vif_results2 <- vif(modell2f)
print(vif_results2)
## Homoskedastizität
# Streudiagramm der Residuen
residuals2 <- residuals(modell2f) # Hier gehe ich davon aus, dass du das Modell bereits mit lm()
erstellt hast
plot(fitted(modell2f), residuals2, main = "Streudiagramm: Residuen vs. Vorhersagen", xlab =
"Vorhersagen", ylab = "Residuen")
# Breusch-Pagan-Test auf Homoskedastizität
library(lmtest)
bptest(modell2f)

# Regressionsmodell 3
# Interaktionseffekte zw Domicil/Contact
modell1 <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact, data = AT_ESS_R)
modell1a <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric, data
= AT_ESS_R)
modell1b <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric +
LowEduc + HighEduc, data = AT_ESS_R)
modell1c <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric +
LowEduc + HighEduc + Young + MiddleAge2 + Old, data = AT_ESS_R)
modell1d <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgbg, data = AT_ESS_R)
modell1e <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgbg + new_gndr, data =
AT_ESS_R)

```

```
modell1f <- lm(freehms1 ~ Urban + Rural + LessContact + MoreContact + year_numeric +
LowEduc + HighEduc + Young + MiddleAge2 + Old + new_rlgblg + new_gndr +
Urban:LessContact + Urban:MoreContact + Rural:LessContact + Rural:MoreContact, data =
AT_ESS_R)
```

```
summary(modell1)
```

```
library(texreg)
```

```
RegMod3 <- list(modell1, modell1a, modell1b, modell1c, modell1d, modell1e, modell1f)
```

```
names(RegMod3) <- c("Model 1", "Model 2", "Model 3", "Model 4", "Model 5", "Model 6",
"Model 7")
```

```
screenreg(RegMod3)
```

```
# Zusammenfassung des Modells mit texreg
```

```
RegMod3_summary <- htmlreg(RegMod3)
```

```
# Exportiere die Zusammenfassung als HTML-Datei
```

```
writeLines(RegMod3_summary, "RegMod3z.html")
```

```
# Multikollinearität testen (VIFs)
```

```
library(car)
```

```
vif_results3 <- vif(modell1f)
```

```
print(vif_results3)
```

```
# Homoskedastizität
```

```
# Streudiagramm der Residuen
```

```
residuals3 <- residuals(modell1f) # Hier gehe ich davon aus, dass du das Modell bereits mit lm()
erstellt hast
```

```
plot(fitted(modell1f), residuals3, main = "Streudiagramm: Residuen vs. Vorhersagen", xlab =
"Vorhersagen", ylab = "Residuen")
```

```
# Breusch-Pagan-Test auf Homoskedastizität
```

```
library(lmtest)
```

```
bptest(modell1f)
```