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THE EDUCATION EFFECT – GENERATIONAL DIFFERENCES IN DISGUISE?

A longitudinal comparative study examining reasons for the liberalizing effect of education on socio-cultural attitudes

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Abstract

The rise of a socio-cultural political dimension in post-industrial societies has substantially changed former patterns of political conflicts. Prior research has established that the level of education is the most predictive characteristic for different individual positions within this value-based dimension. Although the importance of education on socio-cultural values is well known, there is a lack of unity as to whether the effect is causal in itself or merely a correlation of other factors that impact both political attitudes and the propensity to attend higher education. In this thesis, I argue that generational differences might constitute a partial explanation for the strength of the education effect. Younger generations tend to be socio-culturally more liberal than older generations, but they likewise tend to be more educated. Also, the relative importance of education for the formation of attitudes could be weaker in generations that grew up when higher education was more widespread within the population and when the general societal climate was more liberal. The results from the pooled dataset from the European Social Survey 2002–2018, including 30 countries, shows that a part of the education effect is generational in origin and that the strength of the education effect depends on the generational affiliation. Through an examination of European regions, the analysis further indicate that this dependency varies in strength and direction in different societal contexts.

Key words: Education, socio-cultural attitudes, generations, socialization, comparative.

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1. Introduction

The increased saliency of the socio-cultural dimension of political conflict, often labeled authoritarian–libertarian or “New politics”, has transformed the political landscape of Western post-industrial democracies. This value-based dimension has increasingly come to structure political attitudes, voting behavior and societies’ conflict lines (Hooghe & Marks, 2018; Knutsen & Kumlin, 2005; Kriesi, 2010). It relates to social hierarchies, immigration, and cosmopolitanism unlike the traditional economic dimension concerning distributional conflicts. The emergence of the dimension is also an expression of post-materialism, i.e., the emphasis on non-material issues by generations that have grown up during high economic development (Inglehart, 1977; Inglehart, 1997). To comprehend modern politics, it is crucial to establish what determines individuals’ political stances within this dimension.

Previous research has recognized that the most significant determinant for different attitudes related to the socio-cultural dimension is the educational attainment that an individual has acquired. Highly educated individuals tend to be more tolerant, whereas individuals with less education are more authoritarian and culturally conservative (Werfhorst & Graaf, 2004; Lancee & Sarrasin, 2015; Meeusen, de Vroome, & Hooghe, 2013; Stubager, 2008, 2009, 2013). Even if the liberalizing effect of education is well-known, a growing field of research has emerged concerned about the association’s underlying factors. It is still not clarified whether it is the educational attainment that transforms an individual's values or whether the level of education is a proxy for pre-adult factors (Finseraas et al., 2018; Lancee & Sarrasin, 2015; Meeusen, de Vroome, & Hooghe, 2013; Stubager, 2008, 2009). For example, parental socialization could influence both the individual’s values and level of education (Kuhn, Lancee, & Sarrasin, 2021; Kunst, Kuhn, & van de Werfhorst, 2020).

Surprisingly, studies of the influence of generational differences are largely absent within the field of the liberalizing education effect. There are, however, strong reasons to believe that generational affiliations could impact both the strength and significance of education on values. Many scholars have noticed that generations have distinctive political attitudes and characteristics due to the socialization in different economic and social contexts during the generation’s formative years (van der Brug et al., 2018; Inglehart, 2006; 2018; Rekker, 2018). There are thus marked variations not only within countries but also across both countries and regions in this socialization. With fewer scarcity experiences, younger generations are generally

more culturally liberal than older generations. Individuals belonging to younger generations are also the most educated.

The average educational level in the population have increased progressively over time with sharp rises from one generation to another with a start around the 1960s in affluent countries (Baker, 2014; Bovens & Wille, 2017; Ford & Jennings, 2020; Oesch, 2013). The different proportion of highly educated among generations could imply that the effect of education on values is overestimated. The formative contextual experience for the different generations could hypothetically also influence the education effect on values across different cohorts. The varying societal contexts have implications on both the relative distinctiveness and significance of education, and on the general values that characterize the society (Häusermann, Kurer, & Schwander, 2015; Inglehart, 2018; Nteta & Greenlee, 2013). The possibly transformative influence of education might thus also be contingent on generational affiliation.

The central argument behind this study is that the education effect on socio-cultural attitudes, in part, could be generational differences in disguise. Broader generational socialization processes during the adolescent years are widely overlooked within the field. Still, they could influence both the average strength of education on socio-cultural values and the liberalizing education effect across generations. Therefore, this thesis' objective is to complement the understanding of the underlying factors of the education effect on socio-cultural values by examining the influence of generational affiliation with consideration to regional variations. It is still not clarified whether the education effect depends on the generation nor to what extent the strength of the effect is concealed by generational attitudes. The study thus combines two research fields and contributes mainly to the field of the education effect, but also to the independent research field about the formation of generations. The resemblance between higher educated and recent generations is to a certain degree a result of the educational expansion becoming a part of the formative generational context (Inglehart 2018). However, generational differences are not reducible to education.

The remaining part of the thesis proceeds as follows: the next section gives a background of the broader debate about the role of social structure for political cleavages to which the thesis adheres and the influence of education on values. After that, the next section deals with explanations for the education effect on values. Next, the second, independent, research field of generational differences is addressed, including the contextual variation among generations.

Thenceforth, the few discoveries and insights of how these two factors relate are in focus. In the third section, I highlight the research gap and the following aim and research questions. Section four consists of the theoretical model from which the hypotheses derive. The fifth methodological part of the thesis presents the longitudinal OLS-regression analyses chosen to conduct the study. The analyses are first performed on the full sample of countries participating in European Social Survey 2002-2018 and thereafter on different European regions. Section six offers the results. The seventh section consists of the discussion. Ultimately, the eighth section provides some concluding remarks and avenues for future research.

2. Previous research

2.1 Political cleavages and the social structure

The endorsement of the authoritarian-libertarian dimension during the late 20th century was first manifested mainly through the success of parties with an environmental focus and an increased emphasis on liberal socio-cultural issues among already established left-leaning parties¹. In recent decades, however, right-wing parties with authoritarian programs have progressed in all European countries (Bornschieer, 2010; Inglehart, 2018; Ford & Jennings, 2020; Kitschelt, 1994). There are several descriptions and labels of the authoritarian-libertarian value dimension². In this thesis, I will use the most common and generally accepted definition mainly based upon the concept of social hierarchies and tolerance (Bengtsson, Berglund, & Oskarson, 2013; Stubager, 2008, 2013). Accordingly, libertarians strive towards personal liberties and cosmopolitanism and do not consider hierarchies as given, unlike the authoritarians who “favor social hierarchy – the rank ordering of individuals in a system with a clear distinction between superior and inferior groups or persons” (Stubager, 2013:375). The dimension further concerns conformity in the broader sense, where libertarians are more accepting towards individuals deviating from norms or traditional customs and vice versa (Stubager 2013; Knutsen & Kumlin, 2005).

¹ These issues follow older conflict lines such as religion versus secularism and the civil rights movement (Inglehart, 2006). Today, immigration and cosmopolitanism are seemingly the most salient issues, both related to nationalism (Walczak et al., 2012).

² GAL-TAN, Green-Alternative-Libertarian/Traditional-Authoritarian-Nationalist or simply “the cultural dimension” frequently been used within the field (Hooghe & Marks, 2017; Häusermann & Kriesi, 2015a). I proceed with an understanding of the socio-cultural dimension being an analytical tool with authoritarian – libertarian as the endpoints.

The importance of education for various opinions that relates to the socio-cultural political cleavage is well-recognized. Higher education's liberalizing influence has consistently been found in numerous contexts, although stronger in long-established democracies while less robust in geographical areas such as Eastern Europe (Easterbrook, Kuppens, & Manstead, 2016; Inglehart & Welzel, 2005, 220; Stubager, 2013)³. The association between education and authoritarian-libertarian attitudes is so prominent in post-industrial societies that Stubager (2010) even labels it “the educational cleavage,” arguing that education is the fundamental social basis determining political attitudes⁴. Accordingly, the educational cleavage is strengthened by the massive expansion of higher education in Europe during the second half of the 20th century, even if there are considerable differences in availability to higher education among European countries (Baker, 2014; Ford & Jennings, 2020).

There is a debate about the role of social position for political cleavages in modern societies (Bengtsson, Berglund, and Oskarson 2013; Evans 2017; Kingston et al. 2003; Knutsen and Kumlin 2005; Oskarson, 2005; Robison & Stubager, 2018). In the classical work “The silent revolution”, Inglehart (1977) argues that individuals’ position in the society will have a reduced relevance for political divisions as the living standard increases and through the processes of secularization (see also Inglehart 2018). Stubager challenges this thesis and emphasizes the continued significance of socio-economic determinants in post-industrial societies (2008; 2009; 2013). The specific socioeconomic factors of importance may have changed over time, but the social structural basis remains an important predictor of political conflicts. Recent studies confirm this perspective. Rekker (2017) found that education has become a stronger predictor of voting behavior over time. The following sections about models of explanation for the education effect are thus part of a broader discussion about the influence of social structure for individuals’ positions on political cleavages in modern societies and pre-determined versus acquired features. The question as to *why* highly educated tend to be more socio-culturally liberal adheres to this discussion.

³ The link between education and socio-cultural attitudes, regardless of its underlying mechanisms, will further be referred to as the education effect, in line with previous works (Stubager, 2008; Lancee & Sarrasin, 2015).

⁴ Attitudes can be understood as an outer layer of value orientations. An individuals’ values are deep-rooted while her political attitudes are indeed stemming from these values but more changeable, and applied on concrete political issues (Norris & Inglehart, 2019, 35).

2.2 The education effect

2.2.1 Education as a catalyst for liberal values

The main models of explanation for the liberalizing effect of education are based upon the transformative influence of higher education – i.e., non-economic causes. In turn, economic explanations such as the safer labor market positions and the higher income allocated through the educational attainment are commonly accepted as having an independent effect on socio-cultural attitudes⁵ (Bengtsson et al., 2013; Lancee & Sarrasin, 2015; Schnabel, 2018; Stubager, 2008, 2013). The transformative effect of education could occur through a cognitive sophistication contributing to a deeper understanding of complex societal phenomenon (Jenssen & Engesbak, 1994; Schoon et al., 2010; Meeusen, de Vroome, and Hooghe, 2013), or through the transferring of norms and socialization of liberal principles in the university milieu (Gelepithis & Giani, 2020; Schnabel, 2018; Stubager, 2008, 2009). Stubager (2009) further suggests that the socialization mechanism in higher education relates to group-based identity processes, closely linked with education-based status and adherence to meritocratic ideals (see also Kuppens et al., 2018; Spruyt & Kuppens, 2015).

Another central aspect of the possibly transformative impact of education concerns the educational program's content. Several studies demonstrate that graduates from fields that encourage communicative skills tend to be more socio-culturally liberal than graduates from programs that focus on production or administration (Esaiasson & Persson, 2014; Ma-Kellams et al., 2014; Stubager, 2008; Werfhorst & Graaf, 2004). However, it is usually in the earlier stages of life that political attitudes get fostered, and they tend to remain relatively consistent throughout the lifecycles (Kuhn et al., 2021; Lancee & Sarrasin 2015). This fact put focus on selection effects. Therefore, the most recent studies strive to isolate the education effect from the impact of parental influence, which could impact both if an individual attends university and what educational program he or she chooses (Bartels & Jackman, 2014; Jennings, Stoker, and Bowers, 2009; Kuhn, Lancee, and Sarrasin, 2017).

⁵ Bengtsson et al. (2013) even found that the influence of class position on authoritarian-libertarian attitudes is not significant at all under control of education.

2.2.2 Education as an identifier for social background

Several empirical findings highlight the necessity of controlling for, in particular, parental socialization (Jennings et al., 2009; Kuhn et al., 2017; Lancee & Sarrasin, 2015; Margaryan, Paul, and Siedler, 2019). For instance, the socio-culturally liberal values of children with highly educated parents do not seem to change substantially if they receive less education themselves (Werfhorst & Graaf 2004; Kuhn, Lancee, and Sarrasin, 2021). Hence, methods including panel data, longitudinal studies, and quasi-experimental models are increasingly popular within the field to address these pre-depositions adequately (Finseraas et al., 2018; Kunst et al., 2020; Margaryan et al., 2019). By simply measuring at one point in time, one could not ensure that the attitudes were not there *before* the individual started university.

Several researchers study the historic reforms in the expansion of education to examine the education effect on socio-cultural attitudes without selection (Cavaille & Marshall, 2019; d'Hombres & Nunziata, 2016; Finseraas et al., 2018; Margaryan et al., 2019). However, the expansion of education did not occur randomly but in times when the different nations had the possibility and will to make social investments, i.e., during globalization and rising prosperity (Murtin & Viarengo, 2013). Hence, differences between education groups could also illustrate how attitudes develop because of societal differences during individuals' early development period. Generational differences depend on the level of societal abundance.

2.3 Generational characteristics

2.3.1 Generational differences in attitudes

Just as education groups clearly differs in their positions on the socio-cultural cleavage, regardless its underlying mechanism, the same applies to generations. Younger generations are more socio-culturally liberal than older generations due to socialization in materially safer milieus⁶ (Inglehart 1990, 2006; Milburn, 2019). The American professor Ronald Inglehart (1977) was the first to note a generational replacement with increasingly socio-culturally liberal cohorts by focusing on “the formative years”. These years occur before individuals' values get more or less stable and have long-lived consequences for individuals' political values. Thus,

⁶ I proceed in this thesis by referring the broad categories of generations as “younger” and “older” since it is the common word usage within the field. The more precise wording “recent” and “former” could possibly complicate the intuitive interpretation of the text.

generational effects apply to the observed differences between generations, something that socialization within families cannot⁷ (Bartels & Jackman, 2014; van der Brug et al., 2018; Inglehart, 1990). The generational influence further concerns differences between cohorts that are not stemming from differences in lifecycle effects, e.g., that individuals possibly become more culturally conservative when aging (Tilley & Evans, 2014).

Many modern findings highlight the centrality of generational differences for socio-cultural attitudes. There are generational effects concerning both immigration and environmental attitudes in country studies (Nteta & Greenlee, 2013; Ross & Rouse, 2015; Ross, Rouse, and Mobley, 2019), as well as in comparative studies concerning European integration, immigration and gender equality (Dassonneville & McAllister, 2018; Lauterbach & Vries, 2020; Norris & Inglehart, 2019; O’Grady, 2019; Rekker, 2018). The consistency of opinions that forms during these impressionable years, where the most formative period is at the age of 18, is further established in several empirical studies (Dinas, 2013; O’Grady, 2019; Rekker, 2018). Numerous researchers within the generational field thus stress the importance of generational influences in contrast to, as they argue, the over-stated impact of lifecycle effects (Dassonneville & McAllister, 2018; O’Grady, 2019; Peterson, Smith, and Hibbing, 2019). Life-cycle effects occur in all generations, while generational differences are the retained effects of the broader, contextual, socialization (Tilley & Evans, 2014). In that sense, generational affiliation is a proxy for the economic and social context during the adolescent years. Variances in societal contexts across countries and regions should thus play a crucial role for differences between generations.

2.3.2 Generational belonging and contextual variations

The higher levels of cultural liberalism in younger generations are commonly known as a consequence of large-scale processes such as macro-economic development, democratization, and secularization, which influence the cohorts' societal climate⁸ (Inglehart, 2006; Inglehart & Baker, 2000). This connection could imply that contextual variations in values and social

⁷ Inglehart’s theory was at first based solely on the dimension of survival/scarcity which was a supplement to the original theory of socialization from Mannheim (1923/1952). In a later stage, a second dimension concerned about religiosity and secularization was added for an improved comprehension of global patterns (Inglehart & Baker, 2000; Lebedeva et al., 2018).

⁸ I follow the concept of generations based upon different historical periods characterized mainly by the economic context, even if there are different segments and conflicts also within generations (Cavalli, 2004; Evans & Graaf 1996)⁸.

contexts will equalize as countries modernize. Indeed, an increasing consensus of social liberalism and emphasis on individualism between generations in European countries with a high GDP is evident, even if there is a discussion about a cultural backlash in societies characterized by post-materialism and socio-cultural liberalism⁹ (Inglehart, 2018; O’Gradys, 2019, see also Milburn, 2019 for similar findings in the U.S.). As such, Inglehart argues that the growing level of inequality leads to an increased sense of existential insecurity which imposes authoritarian reactions in modern societies (2018; Inglehart and Norris, 2017). Nevertheless, even if these are general global patterns, unique and relatively homogenous cultural regions persist.

In a European context, there are salient differences in the societal climate not solely attributed to GDP per capita, the labor market structure, or the degree of democratization (Inglehart, 2006; Inglehart & Baker, 2000). The societal development is to a certain degree path-dependent and the historical heritage shape how societies develop (Inglehart & Baker, 2000). Northwestern European countries, in particular the Nordic countries are the typical examples of societies that display high levels of cultural liberalism and individualism. In turn, Southwestern Europe is generally quite traditional when compared to countries with similar economic characteristics. Furthermore, the Soviet era substantially marked the value systems substantially for the ex-communist societies in Central and Eastern Europe (Inglehart, 2006; 2018; Walczak et al., 2012). These countries tend to have a less salient socio-cultural dimension but emphasize secular and materialistic values. There are further sharp differences between generations in the post-communist states, particularly between generations in countries that developed into market economies (Inglehart, 2006). Generations growing up after the Soviet era have prominently different experiences than the generations before. The gaps between the cohorts are accordingly more obvious in Eastern Europe than in Western Europe.

Again, individuals in different generations are carriers of these contextual experiences during the formative years. The educational expansion during the 1960s and forward is a part of this contextual experience. Still, generational differences are not based solely on educational differences (Inglehart, 2018). How these two factors relate with regards to political attitudes are insufficiently investigated.

⁹ Inglehart (amongst others) also refers to post-materialism as “self-expression values”, which is a broader concept (Inglehart and Baker, 2000; Inglehart, 2006).

2.4 Educational asymmetries among generations

Research of the liberalizing education effect has broadly neglected the influence of generational differences, as will be discussed more thoroughly, and within generational research the influence of educational differences is more theoretically than empirically analyzed. Education is broadly understood as one of the key drivers of generational differences (Inglehart, 2018; Inglehart and Welzel, 2005). For example, Inglehart compares the postmaterialist generations with the highly educated reasoning that “...the more educated have developed certain skills, above all, skills in dealing with abstraction. The new and the distant might seem less threatening, which could contribute to a relatively open and cosmopolitan world-view, such as that which characterizes the postmaterialists.” (1977, 76). However, he also concludes that the pronounced differences in attitudes between the highly educated in different contexts supports the notion that it is the extent of existential security rather than the cognitive sophistication that drives differences between generations and education groups (Inglehart, 2018; Inglehart & Welzel, 2005, 219)¹⁰. Apparently, the highly educated are presumed to enjoy higher levels of existential security than the low educated (see also Inglehart & Norris, 2019). This is to a certain degree a disconnect from the field of the underlying reasons for the liberalizing education effect since it has been shown to persist even under control of factors that improve individuals’ living standard and material security¹¹ (Graaf & Evans 2004; Stubager, 2008; Bengtsson et al., 2013).

Research about the development of generational attitudes has been criticized for failing to address structural changes that influence generations, such as the educational expansion that imposed sharp increases in the enrollment to higher levels of education with a start in Northwestern Europe in the 1960s (Baker, 2014; Ford & Jennings, 2020; Graaf and Evans 1996). But there are recent exceptions. Rekker (2018) and Lauterbach and Vries (2020) did control for education and still found substantial generational effects concerning cosmopolitanism. Also, Inglehart and Norris (2019) examines authoritarian attitudes across generations and considers the average levels of education among them. Unfortunately, they use

¹⁰ There is a universal pattern of higher educated being more liberal than the lowly educated within countries. The diverging extent of liberal attitudes across countries likely reflects that the highly educated are affected by the general values prevailing in the society (Inglehart & Welzel, 2005, 221)

¹¹ Graaf and Evans (1996) provided over 25 years ago some tentative findings of a weaker influence of material security and a stronger influence of education and war-time experience on post-materialistic values than previously assumed. However, they used cross-sectional data and solely covered eight countries.

a short time-interval which could interfere with the results, and do not control for selection effects nor address the possibility that the effect of education varies between generations. Moreover, the educational influence was not discussed or controlled for in the comparative generational study by O'Gradys (2019). The results from the remaining national studies raise several questions once education was included in the analysis. Still, they do indicate that there are dynamic features between education and generational characteristics.

Education is used in a few papers regarding generational effects as a control variable, with mixed results. The U.S. country study by Nteta and Greenlee (2013) suggests that education play different roles depending on the given generation: the millennial generation had no effect of education on racial attitudes, whereas older generations had a positive effect. The result is remarkable considering the prevalent conception of differences in education as the primary structural basis for the socio-cultural cleavage. The findings further adhere to the results from Ross and Rouse (2019), where education appeared to deepen the knowledge about environmental issues unevenly among generations. However, the reliability and validity of both studies mentioned are severely questionable. Firstly, they solely test their analysis at one point in time. Therefore, the identified generational differences could result from life cycle factors or period effects (Inglehart, 2018; van der Brug et al., 2018). Another weakness is that the studies are limited to the U.S, which is not necessarily generalizable to other countries and regions. As shown in this literature review, there is evidence implying that marked contextual variations should be expected concerning the characteristics of generational affiliations.

3. Aim and research gap

In this thesis, I strive to combine two, notwithstanding adjacent, research fields and investigate the influence of generational affiliation on the liberalizing effect of education on socio-cultural values. A temporal and contextual approach could increase the understanding of how education relates to socio-cultural attitudes. There are two main aspects of how the association could depend on generational characteristics.

Firstly, I argue that generational differences may constitute an essential antecedent to the relationship between education and socio-cultural attitudes. This claim is based upon the findings that demonstrate significant differences in socio-cultural attitudes between cohorts and

because the proportion of highly educated is so unevenly distributed between generations (Baker, 2014; Inglehart, 1990). As such, the higher educated is the only education group in Europe that has become more liberal during the last two decades. It is also the group that increasingly represents younger cohorts (see tables 9 and 10 in the appendix). Secondly, I argue that the effect of education might differ depending on generational affiliation. This suggestion is based upon the assumption that the distinctiveness of education drops as it becomes more widely shared and when the society is more socio-culturally liberal (Häusermann et al., 2015b; van Noord et al., 2019; Nteta & Greenlee, 2013). The tentative results of the studies that show the unequal influence of education on socio-cultural issues by generations are worth further exploration (Nteta & Greenlee, 2013; Ross & Rouse, 2019).

The few studies addressing the influence of generational affiliation for the education effect on socio-cultural attitudes ensures neither the generalizability of their results nor their analysis's validity (Nteta & Greenlee, 2013; Ross & Rouse, 2019). Demographic variables are often, without theoretical concerns, included as background material and life-course factors solely comprised as “age” (Cavaille & Marshall, 2019; Lancee & Sarrasin, 2015; Kuhn et al., 2021). This is surprising since recent years’ research focus within the field aims towards socialization processes. The parental socialization model ought to raise questions and highlight the necessity to broaden the socialization perspective. Many highly educated individuals have grown up with parents with a low degree of education, particularly among the cohorts that were a part of the beginning of the educational revolution around 1960 (Baker, 2014). The model of transmittance of attitudes and educational attainment within families does not explain this fact.

In line with the argument about socialization in the social and economic context, one can assume differences between generations in different countries and regions. This should be evident for the contextual argument to be robust. Taking generational differences stemming from the societal context into account can provide a deeper understanding of how education is associated with the socio-cultural value dimension and what influences this relationship. The study does not intend to explain the causal mechanism of the education effect, that likely is a combination of multiple factors. Instead, the strive is to highlight the partial impact of generational differences in education and how the education effect could depend on generational differences. Important to note is that the association between the education effect and generational characteristics concerns two levels. It is in part a matter of the education effect on an individual level, i.e., whether the education effect remains under control of the average

levels of education among generations and if there is generational variation in the impact of education on socio-cultural attitudes. It is also a matter of the significance of education on an aggregated level. The well-known importance of education for cultural liberalism could be a consequence also of contextual differences rather than solely concerning educational attainment *per se*.

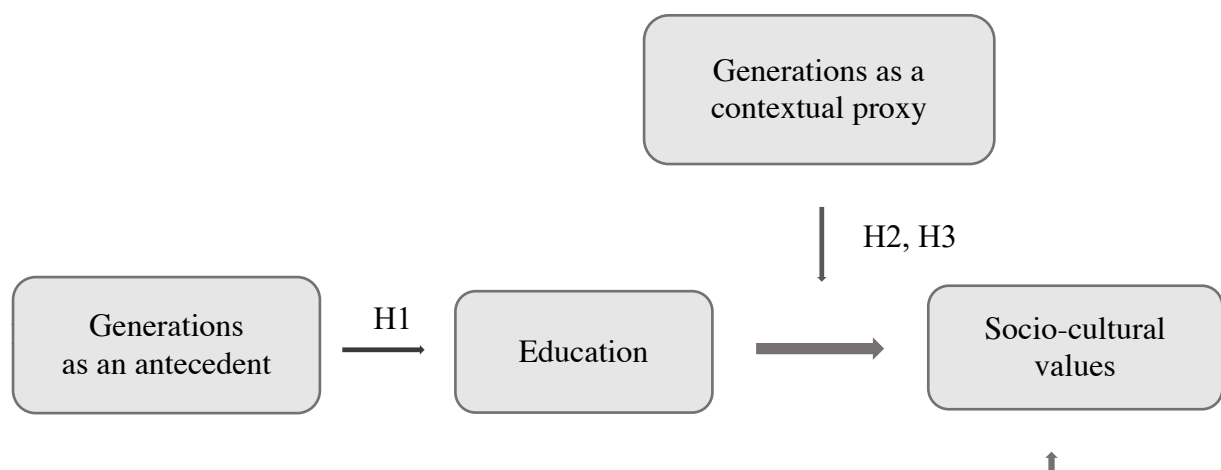
This thesis aims to conduct an in-depth study of how generational belonging influences the way education relates to liberal cultural values. The central research questions thus follow:

- Is the political significance of education in part a reflection of a generational replacement?
- Does generational affiliation moderate the effect of education, and in that case how does it differ between societal contexts?

4. Theory and hypotheses

In the following section, I present and discuss my theoretical model and the mechanisms I propose that drive the association between generations and the education effect. The link between education and socio-cultural attitudes as well as between generations and socio-cultural attitudes is previously well-established, and the prerequisites on which this study is based (see the arrows with no attached hypotheses).

Figure 1. The theoretical model



Firstly, I claim that generations are an antecedent to the education effect. As discussed above, recent generations tend to be more educated and also more liberal (Baker, 2014; Inglehart, 1990). Following the theory of Inglehart, I suggest that the driving mechanism of generational differences is the hierarchy of human needs that influences the distinctive attitudes and political prioritization among generations (Inglehart, 1990; 2018). Generations who spent their adolescent years during economic shortage will emphasize the material needs, who gets what and how, even after a long period of abundance and socio-culturally lean toward cultural conservatism (Inglehart, 1990; 2018; also Grasso, 2014; O’Gradys, 2019). Unlike these birth cohorts, for the post-materialistic generations, existential security is not an urgent concern. As a result, their long-term political aims stress individualism, personal freedoms, and cultural liberalism (Ford & Jennings, 2020; Inglehart, 2018; Walczak et al., 2012). As shown in the section of previous research, increases in economic development closely links with the expansion of education (Baker, 2014; Murtin & Viarengo, 2013). The different average educational levels among generations could thus overstate the general strength of the education effect and concern the interpreted significance of education at an aggregated level. The descriptive pattern of higher educated being (increasingly) liberal would instead follow the generational thesis where younger generations are more generally more liberal. Therefore, I hypothesize that:

H(1) The education effect is reduced when generational affiliations are included in the analysis.

I further suggest that the transformative effect of education differs depending on generational affiliation. Education's transformative effect could be weaker for generations growing up in economic and social contexts characterized by security and post-materialism. Thus, generational affiliation is understood as a proxy for the formative societal context in which the importance of education for value orientations originates. The proposed generational dependency of the education effect on socio-cultural attitudes is based upon the assumption that the distinctiveness of education is higher in contexts where there is a low degree of liberal values and a relatively small share of higher educated¹². In these contexts, the value and status of education are higher. The status and opportunities given by the educational investment reduce as the proportion of the highly educated population increases, two factors that could

¹² See Persson (2013) for a similar argument on the link between education and political participation.

affect the formation of attitudes (van Noord et al., 2019; Schoon et al., 2010). Today, the advantages at the labor market are generally lower for graduates of the younger generation than for those with an academic degree in older generations (Häusermann et al., 2015b). The preconditions for group formation, argued to relate to the education effect, are also reduced the greater the group and the weaker the status assigned to the group (van Noord et al., 2019; Stubager, 2009). As a final point, the influence of education in promoting culturally liberal attitudes is likely weaker among generations that have grown up in societies where these values are more widespread (Nteta & Greenlee, 2013). Thus, I expect the distinctiveness of education and the societies' values to have consequences for the impact of education on political attitudes. The youngest generation grow up in societies when higher education is common, and they belong to the most liberal cohort. Individuals in this generation should thus have a weaker education effect than for those belonging to older generations. The hypothesis follows:

H(2) The effect of education on socio-cultural attitudes is stronger for older generations than for the youngest generations.

The theoretical understanding of why generations differ in their values and why the transformative effect could depend on generational affiliation stresses the importance of varying the societal context. The different contexts could influence education's dependency on the generation in a similar matter. The societal and economic conditions have changed over time in all countries in Europe. However, these changes have been more significant in some regions than in others, leading to greater socialization differences between generations with various possible implications for the education effect. Northwestern parts of Europe are known for a high economic development after the post-war period (Inglehart, 2006). They, therefore, have small gaps between generations, more socio-culturally liberal societies and a higher proportion of highly educated (Inglehart 2006; O'Grady, 2019). I thus expect the effect of education to be the weaker among the later generations in Northwestern Europe than the other regions. Southwestern countries in Europe have had a low economic development until the 80-90s (several countries also experienced prominent political instability and dictatorships) and could have greater differences between generations and a higher relative value and effect of education than in Northwestern Europe (Inglehart 2006; Tortella, 1994). Moreover, Eastern Europe is characterized by experiences of a communist rule (and the transformation of it) and with a low economic development during the 20th century. The existential insecurity is more pronounced in this region and it has more pervasive differences between generations than

regions with less distinct changes during the second half of the 20th century, such as Northwestern Europe. In particular, between the generations before and after the fall of the Berlin wall (Cavalli, 2004; Turkina & Surzhko-Harned, 2014). Differences between Eastern and Southwestern Europe are, however, more difficult to predict because of the historical path-dependency. I thus hypothesize that:

H(3): *The liberalizing effect of education across younger generations is even weaker in Northwestern Europe than in Southwestern and Eastern Europe.*

5. Method

5.1 Research design

I aim to investigate how generational differences in attitudes and educational attainment relate to the education effect by using a broad sample of European countries participating in the European Social Survey 2002 – 2018. The comparative approach enables an exploration of general patterns that are not dependent on a country's specific context and make it possible to take note of societal differences. The first regression analysis is based on the entire sample. The following regression analyses are divided into regions and consider Northwestern, Southwestern, and Eastern European countries separately. This division helps clarify broad differences between regions since the generational variables are expected to have different effects depending on the societal context.

The regression analyses are performed on a pooled longitudinal dataset from the European Social Survey based on nine rounds¹³. The ESS is known for its high-quality cross-national and longitudinal surveys and has several advantages over other comparative surveys such as WVS, EVS and ISSP¹⁴. It includes consistent and suited questions that relate to the index on socio-cultural attitudes over the different survey rounds and have long time series with many measuring points¹⁵. ESS further includes standardized education measurements not solely based on the number of years spent studying, which is crucial for the analysis. As such, vocational schooling lacks a liberalizing effect on political attitudes and is accordingly important to not combine with

¹³ European Social Survey Cumulative File, ESS 1-9 (2020). Data file edition 1.0. NSD - Norwegian Centre for Research Data, Norway - Data Archive and distributor of ESS data for ESS ERIC.

¹⁴ The World Value Survey, European Values Survey and International Social Survey Program are the main alternative comparative surveys measuring individuals' attitudes.

¹⁵ ESS is designed as continuous waves of cross-sectional survey rounds.

university education (Gelapithis & Giani, 2020). It further includes measurements of the parents' educational background, a key control variable for this study that is not attained in the other datasets. It makes it possible to largely avoid the interference from family socialization. Using the ESS has disadvantages as well. The period between 2002 and 2018 is an acceptable length, but it is not ideal. Replicating the analysis when future data collection has been made is required to determine how generational differences relate to the education effect more thoroughly. However, prior research studying generational dissimilarities has used shorter intervals with the ESS-data and still found robust generational effects (Lauterbach & de Vries, 2020; Norris & Inglehart, 2019).

A key consideration for the study is correspondingly to have a sufficiently long time series to distinguish between the linear functions between age, period, and cohort – commonly known as the A-P-C-problem (Cavalli, 2004; Lauterbach & Vries, 2020; Rekker, 2018). This is important since the generational hypothesis posits an independent effect from lifecycle events. Likewise, period effects such as certain major events or the saliency of particular issues would influence all generations and should not interfere over time with generational differences at a large (van der Brug et al., 2018). Hence, by using longitudinal data, it is possible to separate the effects broadly. Ordinary least square regression analysis is further used as recommended by Bell and Jones (2014) and Rekker (2018). Many researchers have previously utilized multi-level models for assessing generation and age effects. Using this hierarchical method to separate the effects of generations from the effects of age and period has been criticized for having a low reliability. A simulation study demonstrated that the model often showed untrue significant findings (Bell & Jones, 2014). Furthermore, to assess the regional effects, multi-level analyses are neither recommended since the analyses include less than 50 cases at the higher, contextual, level (Mehmetoglu, 2017, 213). The data management and analysis are performed using STATA 16.0.

It is necessary to make some theoretical assumptions to distinguish the effects of age and generation from one another since there is full multicollinearity between them. Hence, the variable age is divided into non-linear groups based on different life stages while generations are categorized by the historical period that characterize their formative years. This research design has in previous research proven efficient to separate the temporal variables and examine the influence of generations (Inglehart & Norris, 2019; van der Brug & Rekker, 2020; Rekker, 2018). Previous theory and empirical studies have clarified what categories are significant for the proposed lifecycle effects that age's linear function addresses. For instance, an individual in her

20s might be more culturally liberal than an individual in her 30s because of the different periods in lives they currently are in, with divergent interests and experiences stemming from this particular stage of life. These differences are not as prominent between an individual in her 40s and an individual in her 50s. Thus, the model uses the three main phases after the age of 18 noted in development psychology and further used successfully by Wouter van der Brug and Rekker (2020) and Rekker (2018). Operationalizing lifecycle effects in these categories instead of the linear function of age did not deteriorate the models, further motivating the strategy. This research design enables the distinguishing between generational effects and lifecycle effects despite the variables' similarity. A shortcoming of the approach is that it is not possible to separate unexplained generational effects from lifecycle effects (Rekker, 2018). This is a limitation to the research design. However, the chosen strategy implies a solid assessment of generations' impact, even if they could potentially be stronger in effect than shown by the regression analysis.

There are variations between countries and years that need to be addressed. Thus, the model includes fixed effects for country and year at each survey round, ensuring that period effects and country differences do not interfere with the results (Lauterbach & de Vries, 2018). Additionally, the model includes fixed effects for country-specific period effects with one dummy for each country at each survey round. This inclusion ensures that variations in period effects between countries do not interfere with the results. It could, for example, be that the refugee crisis in 2015 had an impact on individuals in all countries regarding attitudes towards immigration, but more so for those in countries that received a larger share of refugees than those living in countries that did not.

5.2 Material

All 30 countries that are part of the ESS in more than two rounds are included¹⁶. Israel, Turkey, and Russia are excluded from the sample since they are not (or not solely) a part of Europe and are expected to diverge too vastly from the rest of the sample considering generational differences. The age limit of the study is 18 years old so that all individuals can be classified as

¹⁶ The sample includes the following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxemburg, Netherlands, Norway, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden, Switzerland, Ukraine, UK. Some countries are included solely three ESS-rounds whilst others are included in all nine ESS-rounds.

adults, which also is the most formative age (Rekker, 2018). Individuals born in other countries are excluded from the analysis. It is not unlikely that they have experienced formative years that are too diverging from the average citizen that could interfere with the results. Weights are further applied in all models to generate better representativeness between and within the countries. The weight equalizes the data material so that it corresponds closely to the whole population¹⁷.

Table 1. Description of material: European Social Survey

Years	2002 - 2018
Rounds	9
Sample size	343 679
Countries	30
Fieldwork period	1/9 – 31/12
Age of respondents	18 – 102

5.3 Operationalizations

5.3.1 Dependent variable

The dependent variable in this thesis is the socio-cultural authoritarian-libertarian value dimension. The dependent variable is constructed as an index based upon questions about attitudes towards migration, cultural diversity, and tolerance of LGBT rights¹⁸. The index is standardized to range between 1-10 and has a liberal direction to enable an intuitive interpretation in the analysis. The dependent variable's operationalization must be consistent in the ESS rounds between 2002 and 2018 to secure validity and the possibility of conducting tests of significance¹⁹. The aspect of law and order and European integration, known parts of the dimension and salient issues, could not be included in the index because of the inconsistency of questions asked during the different surveys. However, attitudes towards immigrants, LGBT, and cultural diversity are highly related to the dimension and thus included. Several researchers have solely focused on immigration attitudes when operationalizing the dimension (Lancee & Sarrasin, 2015; Stubager, 2008). Incorporating other aspects of the index thus provides a more theoretically informed operationalization. The index's reliability was calculated using

¹⁷ See https://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data_1.pdf.

¹⁸The wording of the questions that compose the index follows: “*Immigrants make country worse or better place to live*”, “*Gays and lesbians free to live life as they wish*”, “*Country’s cultural life undermined or enriched by immigrants*”. The questions are either originally, or recoded, as measured on a scale ranging from 1-10.

¹⁹ As such, statistically tested tables of means are found in the appendix.

Cronbach's alpha which showed 0.66 for the index, thus over the critical limit of 0.6 (Dassonneville & McAllister, 2018; Svallfors, 2013)²⁰. The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity further showed that the model predicts some index values better than others. Therefore, robust standard errors clustering within countries and periods are used.

5.3.2 Key independent variable

The main independent variable is educational attainment that is used as a categorical variable. The coding needs to ensure comparability across time and countries. Therefore, the categories are broad with a sharp distinction between those with tertiary education and those without, the most equivalent categories. The level of education is thus divided into three categories: low, medium- and highly educated²¹. The lowest level corresponds to lower-level secondary education, and the medium corresponds to post-secondary education as the highest educational attainment level (including vocational training). The highest level of education is university education, regardless of whether the studies led to graduation or not. The lowest level of education is the reference category since it has the minor effect on the index.

5.3.3 Moderator/antecedent variable

The grouping of age cohorts to create appropriate generations, a fundamental aspect of this study, considers the societal and economic landscape during the formative years. The categorization is based upon the historical characteristics that define their formative adolescent years²². The comparative research design restricts the study to broad, generalized divisions of the generations – the grouping of countries does instead benefit the purpose of scrutinizing differences between regions. The classification of the youngest generation included in the analysis are those born between 1980-1996. This cohort has grown up during the highest level of globalization so far and is assumed to be the most culturally liberal generation with 32 percent being highly educated²³(Milburn, 2019; Ross & Rouse, 2015). The generation before them are individuals born 1961-1979. While globalization had not accelerated to the same

²⁰ The Cronbach alpha shows 0.59 in 2002 and 0.72 in 2018 for the index. The stronger correlation between the variables at the latter point in time is likely a consequence of the increased saliency of the political dimension concerning socio-cultural issues.

²¹ The variable "edulv1a", based on an international standard classification of education, is recoded and used to measure educational attainment.

²² I use the exact years the generations are defined by in the thesis and not names of the generations to avoid vagueness. The same label of a generation is often classified dissimilar by different persons and researchers.

²³ In 2018 when more within this cohort had entered university, as many as 42 percent are highly educated. Information about the generations proportion of highly educated is calculated from the ESS-dataset.

extent as the following generation, they grew up during high economic development – particularly in Northwestern Europe. 35 percent within this cohort are highly educated (Wiedmer, 2015). The next generation is categorized as between 1945-1960, the first generation born after the Second World War. This generation was a part of the educational expansion, and many (in the Northwest) advanced in their socio-economic class position, 26 percent are highly educated (Baker, 2014). The single generation born before the post-war period is those born between 1920-1944. Individuals in this generation were in their formative years mainly after the years just after the war and some also during the war (Inglehart, 1990). This is also the generation that is the reference category since it has the minor influence on the authoritarian-libertarian index. Solely 16 percent within this cohort are highly educated.

5.3.4 Control variables

I apply several control variables that could affect the association between the dependent variable (socio-cultural attitudes) and the main independent variable (education) in the analysis. The main criterion for including the variables is that they are related to both variables in the focal relationship and therefore could be underlying mechanisms of the association. Income is thus included, linked to the individual's labor market position. It is measured by the subjective feeling of one's income to come closer to the relative experience, appropriate for the cross-country research design. Higher values mean experienced difficulties to cope with the current income. A block of demographic variables is further a part of the control variables. A central control variable is for the family socialization. Hence, I control for the parents' educational background to minimize the influence of parental socialization noted in previous research²⁴ (Lancee & Sarrasin, 2015; Margaryan et al., 2019). Since there are gender patterns to educational attainments and socio-cultural attitudes, gender is a dummy variable where one represents women (Parvazian, Gill, and Chiera, 2017). I consider place of residence because individuals in the countryside tend to be more authoritarian and less educated (Bengtsson et al., 2013; Stubager, 2008). As I discuss in the research design, age is divided into theoretically informed categories (Rekker, 2018). The phases are early adulthood (18-29), middle adulthood (30-64), and late adulthood (age 65 to maximum)²⁵.

²⁴ Surprisingly, Norris and Inglehart (2019) did not include this control even though they are interested in the importance of affluence during the formative, adolescent, years. Parents educational background could be argued to be an important micro-level predictor of such.

²⁵ The category “early adulthood” generally starts at 20 years old and not 18 years old. In the case of this thesis, the exclusion of individuals younger than 18 years old makes an adolescent category between 18-20 years old too narrow. The group of early adults will thus be slightly broader than in the case of, for example, Rekker (2018).

Table 2. Summary statistics 2002 - 2018, 30 countries

	N	Mean	Std. Dev	Min	Max
Value index	311 465	5.99	1.84	1	10
Education	342 144	1.98	0.75	1	3
Generation	338 709	2.47	1.01	1	4
Age	343 679	2.06	0.62	1	3
Parents ed.	303 8154	3.08	1.25	1	5
Income	335 704	2.04	0.87	1	4
Gender	343 530	1.54	0.49	0	1
Residence	342 974	2.95	1.21	1	5

Source: European Social Survey 2002 – 2018

5.3.5 Division of countries

To clarify differences in the contextual influence on generations' formation, the sample is divided into three regions: Northwestern Europe²⁶, Southwestern Europe²⁷, and Eastern Europe²⁸. There have been prominent differences during the 20th century between the regions regarding economic development and political stability and they diverge in their cultural heritage (Inglehart 2006). Information about the economic performance in Western Europe 1980 is provided in the appendix to clarify the broad different economic developments within this larger region (see table 10). Due to the higher economic development in Northwestern Europe, the generational differences are less distinct than in the other regions. The influence of education on values is assumed to be weaker here. Ireland is the only country within this region that diverges from the historically higher GDP per capita. However, when running the regression analysis and excluding Ireland, the results were unaffected, and the model was not improved. This highlights the accuracy of the geographic division and the relatively historical-culturally similarity. Furthermore, in Northwestern Europe, the educational expansion has been massive and as many as 32 percent are highly educated²⁹. The post-communist countries have endorsed a more modest educational expansion, to a similar extent as the Southwestern region. Today, 23 percent are highly educated in Eastern Europe, and 19 percent in Southwestern Europe.

²⁶ Include the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, UK.

²⁷ Include the following countries: Spain, Portugal, Greece, Italy, Cyprus.

²⁸ Include the following countries: Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Ukraine. Depending on the scale level, some countries belong to Central Europe.

²⁹ Share of highly educated in the sample is produced by the ESS-data used in this thesis.

Eastern Europe has been characterized by a communist rule during the 20th century and is thus treated separately from Western Europe in general, and particularly from Southwestern Europe. Both regions have had a lower economic development and a less considerable educational expansion than Northwestern Europe. Socio-economic determinants have different dynamics within countries with communist heritage. In Eastern Europe, the role of social position for political cleavages is weaker among generations socialized before the fall of the communist era in the more politically homogenous societies (Evans, 2006; Walczak et al., 2012). Hence, there are apparent reasons to treat Eastern Europe separately from Southwestern Europe.

5.4 Model specification and analytical strategy

At first, the entire sample is analyzed to clarify the influence of education as an antecedent and explore if younger generations, in general, have less of an effect of education on values. The regression analyses are thereafter conducted exclusively on a sample of Northwestern, Southwestern, and Eastern European countries to clarify differences in the contextual influence on generations' formation. The last model in the regression analysis includes the interaction term, Model 7, and is compiled from the regional analyses in a separate table. The full tables of the different regions are placed in the appendix as well as a table with a three-way interaction including the regions to clarify that there are significant differences between them (tables 11-15). These tables include the standard errors and also presents values on the control variables.

Generations are not examined solely as an antecedent variable but also as a moderator since it is hypothesized that the focal association differs depending on the generational affiliation (Aneshensel, 2013, 18). The coefficients represent the average effect of the different variables on the index. However, when including an interaction term, the interpretation of the variables included in the interaction changes substantially and complicates the understanding of these coefficients as they then represent the coefficients for certain groups (Mehmetoglu, 2017, 126 pp.). Hence, the examination of generations as an antecedent is based on the models without an interaction term (model 1-6). In contrast, the interaction terms are meant to scrutinize the contextual and generational dependency of the education effect.

6. Results

This section firstly presents basic descriptive statistics before addressing the regression analyses.

6.1 Descriptive results

The descriptive statistics highlight some crucial elements for the analysis (tables of means are placed in the appendix). For instance, there is support for the theory of a generational replacement. The average mean on the authoritarian-libertarian value dimension has increased among the full sample between 2002 and 2018, in line with the thesis of a shift of relatively conservative cohorts with overall more liberal cohorts³⁰. It is further evident that the higher educated are more tolerant than the lower educated. The gap between the groups is more substantial between medium educated and high educated than between the two lower educated groups, which corroborates with the findings of a divide mainly between those who have studied at university and those who have not (Stubager, 2008; 2010)³¹. Likewise, there is an increase in libertarianism between 2002 and 2018 solely among the highest educated³². This is an interesting finding related to the generational hypothesis of the group increasingly being represented by individuals in younger cohorts, possibly explaining the higher number at the latter point in time. Also, the means on the authoritarian-libertarian dimension are strikingly similar within generations at the first and last measured point. Younger generations are more liberal than older generations³³. There is an increase in libertarianism solely among the youngest cohort – which also tend to be the most educated group. It is further confirmed in the sample that younger generations are educated to a higher degree than older generations³⁴. The mean has, as expected, steadily increased over the generations. The generation 1980-1996 was the most educated cohort in 2018.

³⁰ See table two in the appendix.

³¹ See table three in the appendix.

³² See table four in the appendix.

³³ See table five in the appendix.

³⁴ The most recent generation has also had an increase in educational attainment between the years in contrast to the other generations in different life phases. See table six in the appendix.

Ultimately, there are important and necessary correlations between the main variables. The correlation matrix below shows that there are significant effects between all the four main variables of interest. The VIF values are under the critical value of five for all variables, motivating their inclusion in the analysis despite the partial multicollinearity between age and generations (Mehmetoglu, 2017, 146).

Table 3. Pearson's correlation matrix (controls excluded). 30 countries. 2002–2018

	Index	Education	Age	Generations
Index	1.00			
Education	0.24***	1.00		
Age	-0.14***	-0.17***	1.00	
Generations	0.16***	0.23***	-0.80***	1.00

Source: European Social Survey 2002 – 2018. 30 countries.

Note: P<0.05=* p<0.01=** p<0.001=***

6.2 Regression analyses

The regression analyses are performed to explore the influence of generational differences on the effect education has on socio-cultural values. Table 4 represents the effects of the different variables on the authoritarian – libertarian index on the whole sample. The interpretation of the OLS regression analysis is based on seven models where the variables are successively added to the regression to clarify their dynamic. The first model presents the uncontrolled effect of education on the index. Generations are included uncontrolled in model two, with controls of lifecycle effects in model three. The following three models include both generations and education in various steps to clarify their dynamic features. Model four presents both education and generations, uncontrolled. Next, model five consists of the control of lifecycle effects, and in the following model, the control variables gender, parents educational background, place of residence and income are included. Finally, the interaction term is a part of model 7 to examine if the effect of education is equal among generations. After this regression analysis, I move forward to consider the regional differences.

6.2.1 Regression analysis, full sample

Table 4. Authoritarian – Libertarian attitudes (1-10). 2002 – 2018. Full sample

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education (low as ref)							
Medium	0.60***			0.46***	0.45***	0.34***	0.31***
High	1.26***			1.12***	1.12***	0.83***	0.76***
Generation (1920–1944 as ref.)							
1945-1960		0.54***	0.38***	0.40***	0.30***	0.31***	0.24***
1961-1979		0.84***	0.64***	0.59***	0.46***	0.46***	0.41***
1980-1996		0.94***	0.71***	0.73***	0.52***	0.47***	0.54***
Age (middle-aged as ref.)							
Young adult			0.05*		0.11***	0.01	0.01
Late adult			-0.23***		-0.14***	-0.15***	-0.15***
Education#Generation							
Medium#1945-1960							0.09*
Medium#1961-1979							0.05
Medium#1980-1996							-0.05
High#1945-1960							0.14***
High#1961-1979							0.11**
High#1980-1996							-0.08
Controls							
Country##Year	YES	YES	YES	YES	YES	YES	YES
Gender, Parents, Residence,	NO	NO	NO	NO	NO	YES	YES
Income							
Model							
Intercept	5.6	5.6	5.7	5.3	5.4	5.7	5.8
Respondents	310 141	307 204	307 204	305 905	305 905	268 080	268 080
Adj. R ² (%)	17.5	14.3	14.4	19.3	19.3	22.0	22.1

Source: European Social Survey 2002 – 2018. 30 countries.

Note: $p < 0.5 = *$ $p < 0.01 = **$ $p < 0.001 = ***$. Unstandardized B-coefficients. Weighted data. Robust standard errors. Fixed effects for country and year as well as country-specific year. The standard errors and values on the control variables are not shown to simplify the readers' interpretation but are presented in the appendix (Table 11).

The first two models in the regression analysis examine the uncontrolled impact of education and generation respectively on the index of authoritarian – libertarian attitudes. The result shows that education has a high explanatory power on the authoritarian-libertarian value dimension with nearly 18 percent. The coefficients for medium and highly educated ($b=0.60$ and $b=1.26$) imply that those with university education are the most culturally liberal education group. The group of highly educated are thus almost 1.3 points more libertarian than the lowly

educated. In model two it is shown that younger generations are more liberal than older generations. The explained variance is above 14 percent for generations, also a significant share. All generations are more liberal than the reference category (born 1920-1944). There is a positive trend among the effects, but the generations' gap is smaller between the two recent generations. In model three, the generations are included with controls for lifecycle effects. The generation effect's strength was then reduced but the large share remained. There is thus a robust generation effect that is not because of life-phases differences. Being older than 65 years old was, as expected, associated with more cultural conservatism and being in one's young adulthood was associated with more culturally liberal attitudes. In model 4, the impact of education and generation were examined simultaneously. The education effect was overall reduced under this control. For the medium educated the effect was reduced by about 23 percent (from $b=0.60$ to $b=0.46$) and for the highly educated with about 11 percent (from $b=1.26$ to $b=1.12$). Some of the education effect is thus generational in origin³⁵. The inclusion of life-cycle effects did not change this fact (model 5). These factors explain a moderate share of the variation, above 19 percent. In model six, the control variables gender, income, parents' educational background, and place of residence were included. Consequently, the education effect was further reduced, in particular among the highly educated. The explanatory power was raised to 22 percent³⁶.

The last model test if the education effect differs between generations by incorporating the interaction terms (model 7). There are three significant interaction terms of which all are positive³⁷. This means that the liberalizing effects of medium or high education are stronger in these generations. This includes the group of medium educated in the generation 1945-1960 that has an additional, yet weak in strength and significance, effect ($b=0.08, p=*$). Furthermore, the highly educated among the two generations 1945-1960 and 1961-1979 have a slightly stronger additional effect where the former has the strongest ($b=0.14$ vs. $b=0.11$). The youngest generation has a negative interaction that is not significant. This means that they do not differ significantly from the oldest, reference, generation in their effect of higher education on values. Consequently, the two generations before with positive interaction effects have a more

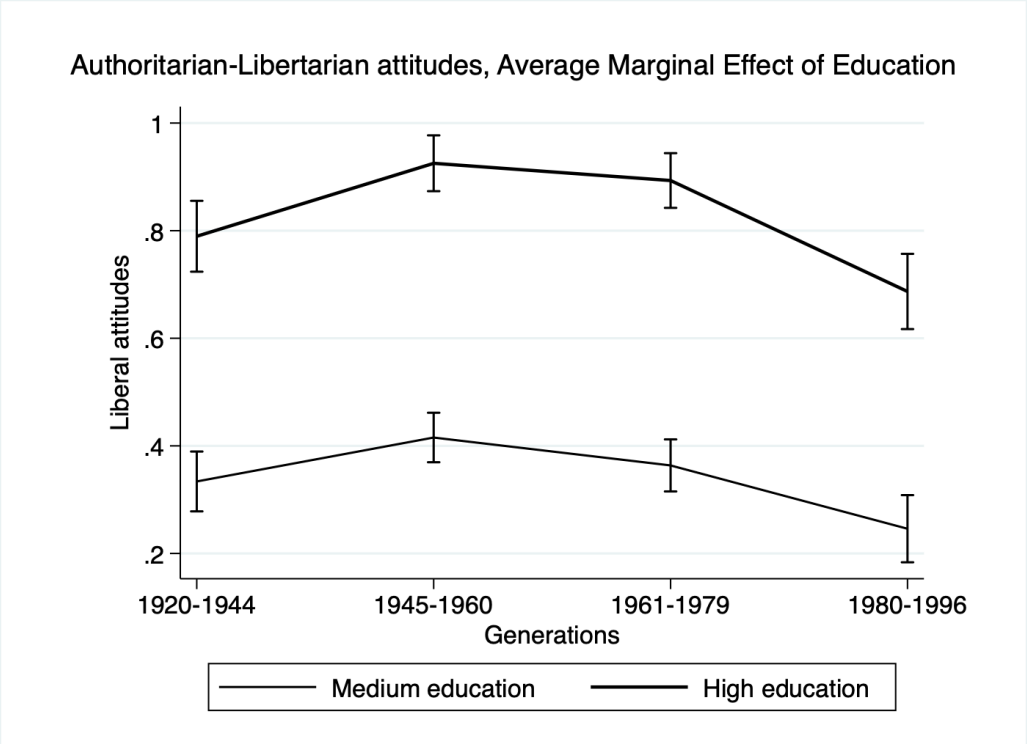
³⁵ When solely including age instead of generations, the remaining education effect for both medium and high educated was 0.50. and 1.21 respectively, e.g., higher than when generational effects are accounted for.

³⁶ When running the entire analysis but excluding individuals that experienced the war in their formative years from the reference generations, the results were largely unaffected. As an additional robustness check, I included the degree of religiosity since Inglehart (2006) emphasizes the importance of secularization, which neither influenced the results but solely decreased the uncontrolled generation effect marginally.

³⁷ The test of the F-statistics is significant and confirm the overall interaction effect of the model.

liberalizing effect of, above all, higher education than the youngest and oldest generation³⁸. The average marginal effects of higher education are statistically significant and demonstrate 0.76 for the oldest generation, 0.90 for the generations born 1945-1960, 0.87 for the next generation and solely 0.68 for the youngest generation. Thus, it is evident that the two generations between the oldest and youngest generations have the strongest effect of education on the socio-cultural index. Figure 2 below illustrates the average marginal effect of education among the different generations, e.g., the (conditional) effects of the education levels across the generations. As can be seen, the highly educated (represented by the thin and full line) has a stronger effect among the two generations in the middle, which is not the case for the youngest generation. The medium educated follows a similar, yet weaker, pattern where solely the generation born 1945-1960 has had a significant additional effect³⁹.

Figure 2. Interaction effects, Full sample



³⁸ The interaction effects among the highly educated born 1945-1960 and 1961-1970 does not differ significantly from each other, clarified when running the same model but varying the reference category. Their interaction terms are still significantly different from the effect of education among the oldest and youngest generation.

³⁹ A marginsplot with predictive values on the socio-cultural index for the groups based on these values is placed in the appendix (figure 6).

In summary, the results show that the education effect was reduced under the control of generation. This finding thus supports the hypothesis that generational affiliations, in fact, are antecedents to the education effect. The average levels of education among generations conceal the effect of education, which is somewhat weaker than previously assumed and caused by generational effects rather than life-cycle effects. I therefore accept hypothesis 1.

H (1) The education effect is reduced when generations are included in the analysis.

It further appears as if there is tentative support for hypothesis 2. The interaction terms in model 7 show that the two generations after the oldest generation (1945-1960 and 1961-1979) have a stronger effect of medium and high education than the oldest generation. The youngest generation (1980-1996) does not have a significant interaction term. They therefore have a weaker effect of education than the two generations before. Hypothesis two is thus broadly supported and accepted. The fact that the youngest generation does not diverge significantly from the oldest generation, displayed in the table, is considered in the discussion. It could relate to the possibilities of advancing in society through education - possibilities that likely are weaker for the oldest and youngest generation than for those in between.

H(2) The effect of education on socio-cultural attitudes is stronger in older generations than for the youngest generation.

The third hypothesis explores contextual differences to clarify how the education effect differs between diverging generational socializations. The next part of the results addresses these variations.

6.2 Regional regression analysis

The main findings from the regional analyses of the interaction effects are presented below (model 7 from the full tables). Full tables are found in the appendix (tables 12-14).

Table 5. Authoritarian-Libertarian attitudes (1-10). 2002 – 2018. Summary, Model 7

	Northwest	Southwest	East
Education (low as ref)			
Medium	0.30***	0.46***	0.34***
High	0.81***	0.59***	0.70***
Generation (1920–1944 as ref.)			
1945-1960	0.24***	0.22***	0.30***
1961-1979	0.34***	0.37***	0.67***
1980-1996	0.58***	0.32***	0.86***
Education#Generation			
Medium#1945-1960	0.07	0.08	0.04
Medium#1961-1979	0.12*	-0.04	-0.20*
Medium#1980-1996	-0.07	0.12	-0.44***
High#1945-1960	0.18***	0.32*	-0.14
High#1961-1979	0.21***	0.28*	-0.28*
High#1980-1996	-0.05	0.38**	-0.58***
Model			
Intercept	5.6	3.9	4.7
Respondents	146 753	40 537	80 790
Adj. R ² (%)	19.0	23.7	17.5

Source: European Social Survey 2002 – 2018. 30 countries.

Note: $p < 0.5 = *$ $p < 0.01 = **$ $p < 0.001 = ***$. Unstandardized B-coefficients. Weighted data. Robust standard errors. Fixed effects for country, year and country-specific year included and the control variables age, place of residence, income, gender, and parents' educational background. Full tables including standard errors are found in the appendix (tables 12-14).

The table shows the interaction effects on the value-based index between education and generations among the three different regions (model 7 in table 4 above). As expected, the interaction effects are inconsistent over the regions. In Northwestern Europe, the first two post-war generations have a more liberalizing impact of higher education than the oldest generation. The generation 1961-1970 also includes an additional positive effect for the medium educated. In contrast, the most recent generation has no significant interaction term and does not differ from the oldest, reference, generation in their effect of education. Moreover, Southwestern countries solely include significant positive interaction effects among the highly educated. All generations in this sample have a more liberalizing effect of higher education than the oldest generation. In Eastern Europe the pattern is almost reversed⁴⁰. There is a negative trend among

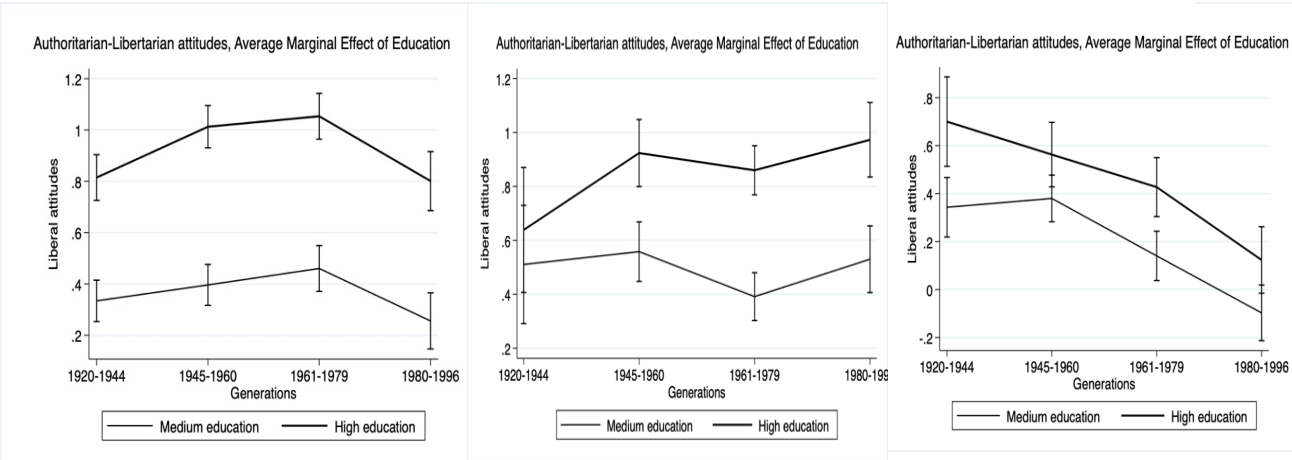
⁴⁰ As a robustness check, a three-way interaction (table 15 in the appendix) was run. The results suggests that the diverging interaction effects among highly educated across regions are significant. Southwestern Europe has a more positive effect among the highly educated in the most recent generation than the same generation in Northwestern Europe. Otherwise, the groups of highly educated among the older generations in Southwestern Europe have positive interaction terms, as is the case in Northwestern Europe. The three-way interaction terms further confirm that Eastern Europe has more negative effects of education over the generations than the other two regions, both medium- and highly educated.

the interaction terms in this sample. The generations born 1961-1979 and 1980-1996 have a weaker effect than the reference cohort among both medium educated and highly educated. The strongest negative effect is among the youngest generation ($b=-0.58, p=***$). Figures 3, 4 and 5 below illustrate the average (conditional) education effect among generations in the different regions. Solely Southwestern Europe diverges from the general trend in the other regions of a weaker education effect among the highly and medium educated in the most recent generation than for the generations before⁴¹.

Figure 3. Northwestern Europe

Figure 5. Southwestern Europe

Figure 4. Eastern Europe



I conclude that there is partly support for hypothesis 3 of a weaker effect among the generations in Northwestern Europe than in the other regions⁴². The youngest generation in Northwestern Europe does not differ from the reference category and has a negative direction (although not significant), while the youngest generation in Southwestern Europe includes a significant positive interaction term. The average marginal effect of education among the youngest generation is 0.97 in Southwestern Europe while it is 0.80 for the same generation in Northwestern Europe. Interestingly, these findings align with the proposed mechanism of the relative value of education and general values in the society that impacts its strength on political attitudes. In Northwestern Europe, the educational expansion came earlier than in Southwestern Europe and it is mainly for the youngest generation the distinctiveness of education has been

⁴¹ Marginsplots with predictive values on the dependent variable, i.e., the authoritarian – libertarian dimension, based on these values among the different regions are placed in the appendix.
⁴² As a robustness check to ensure that there is statistical significance in the differences between the regions, a model with a three-way interaction between education, generations and dummies for the different regions was run (table 15). There are no significant differences in the interaction effects among the highly educated in Western Europe until the youngest generation where Southwestern Europe has a significantly higher influence of education than in Northwestern Europe

reduced. This is also the generation that has grown up in the most culturally liberal society. In Southwestern Europe, the educational expansion arrived in a later stage. Thus, there is a smaller proportion of highly educated among the population than in Northwestern Europe (19 percent in contrast to 32 percent). Therefore, the distinctiveness of education is still clearly pronounced in Southwestern Europe even if the percentage of highly educated among the youngest generation is similar between the regions⁴³. Further and more profound analyses with studies of the specific context are necessary to comprehend the diverging pattern with additional negative interaction effects among the Eastern Europe sample. Future research should address this topic. However, the differences between the two Western regions largely confirm hypothesis three.

H(3): The liberalizing effect of education across younger generations is even weaker in Northwestern Europe than in Southwestern and Eastern Europe.

To summarize, the findings in this study show that part of the education effect is stemming from generational differences. The results also indicate that the education effect is unequal among generations. In general, older generations have a stronger liberalizing effect of education on socio-cultural attitudes than the youngest generation. The first two hypotheses are therefore supported even if the effect of education did not differ between the youngest generation and the oldest. As a final main point, there are critical regional variations in how the education effect depends on the generation. In the Northwestern European sample, the two generations born 1945-1960 and 1961-1979 had a stronger liberalizing effect of education than the oldest and youngest generation. There seems to be a similar pattern in Southwestern Europe but with a delay; the youngest generation also included an additional liberalizing effect. However, the diverging pattern in Eastern Europe with negative interaction terms among the recent generations was unexpected and contradicted the anticipated differences between regions. The third hypothesis was therefore only partly supported. Altogether, these findings provide important insights into how generation-specific contexts influence the education effect. The next chapter moves on to discuss these results more thoroughly as well as the limitations and contributions of this study.

⁴³ Among the youngest generation in Northwestern Europe 32 percent are highly educated, while the number is 29 percent for the same generation in Southwestern Europe and 27 percent in Eastern Europe.

7. Discussion

This thesis aimed to conduct an in-depth study of how generational characteristics influence the relationship between education and socio-cultural attitudes. The central argument explored was if the education effect on socio-cultural attitudes could be disguised generational differences. The research questions concerned if the political significance partly reflects a generational replacement and whether the education effect on socio-cultural attitudes is unequal among generations. The question also concerned how the generational socialization in various societal contexts influence the liberalizing effect of education. The findings of this study have a fundamental role in complementing previous research of the education effect on socio-cultural attitudes.

One of the main findings is that part of the education effect on socio-cultural attitudes indeed is a generation effect. The effect of education on authoritarian – libertarian attitudes was weaker when the influence of generations was included in the model, which remained under the control of life-cycle factors. The results provide support for the suggestion of generations as an antecedent to the education effect and that a generational shift influence the education effect. The influence of generations is not shown nor correctly interpreted when exclusively controlling for life-cycle effects as has been common in previous research within the field of the liberalizing education effect (Cavaille & Marshall, 2019; Lancee & Sarrasin, 2015; Kuhn et al., 2021). Hence, this finding implies that the significance of education for cultural liberalism is somewhat weaker than previously argued by Stubager (2008; 2009; 2013). This finding is instead in line with the thesis of a reduced relevance of socio-economic characteristics for political cleavages in modern societies by Inglehart (1990).

Another striking finding is that the liberalizing effect of education actually is unequal over generations. The results broadly support the second hypothesis about younger generations having less of an effect of education than older generations, which was particularly true in Northwestern Europe. The most recent generation has in general less of a liberalizing effect than the two generations before. Therefore, the political significance of education seems to be declining, a finding that accords with the suggested dynamics of a generational replacement. It appears as if education does not have the same role in influencing political attitudes among the most liberal and educated generation, in agreement with the findings of Nteta & Greenlee (2013) and Ross & Rouse (2019). This finding also provides an empirical contribution to the

field of how generations are formed. The influence of education seems to be more pervasive within certain generations. Descriptive patterns of younger generations being more culturally liberal is thus based on educational differences to a higher extent in some generations than in others.

It is further interesting that the youngest generation did not differ in their effect of education from the oldest generation born 1920-1944, while the generations in between did have an additional effect. Likely, the selection effects in attending education (most notably higher education) were very pervasive for the oldest generation. Fewer individuals could study before the educational expansion (Baker, 2014). The potentials of enjoying a higher social position were thus more related to the inherent socio-economic position. The opportunities and relative value of education were higher for the following generations when a diploma likely implied greater possibilities of advancing in one's class position. These are also the generations 1945-1960 and 1961-1979 that have supplementary effects of education. Additionally, the youngest generation (at least in Northwestern Europe) is the most highly educated generation and the generation where the level of education does not necessarily imply the benefits at the labor market nor in social status as for the generations before (Häusermann et al., 2015b; Norris & Inglehart 2019). Education is not as distinctive for them and they lack an additional effect of education on values in general. They have also grown up in a society that to a higher degree is characterized by cultural liberalism and can easily take part of information through the internet etcetera. These factors could be possible explanations for the seemingly curvilinear effect of education between the generations.

The last main finding, which adheres to the discussion about the distinctiveness of education, concerns the apparent regional differences in how generations influence the education effect. In a similar vein as I argued that older generations would have a more substantial effect of education, I hypothesized that the same pattern would appear on a regional level. Based on the proposed mechanism of a weaker distinctiveness of education in specific cohorts, I presumed that education would have a more negligible influence on younger generations' attitudes and among Northwestern European countries than the other European regions. The results did partly support this third and last hypothesis. The most prosperous region, Northwestern Europe, had a weaker education effect for the youngest generation than in Southwestern Europe while the Eastern European sample diverged from the anticipations. Therefore, it can be assumed that there is a declining education effect on socio-cultural values in Northwestern Europe and that

this decline is to be expected in a later stage in Southwestern Europe, i.e., if the value of education and the general value system in the societies follow a similar pattern. An alternative interpretation for the results of additional liberalizing effects of education in Western Europe could corroborate the ideas of a robust education effect by Stubager (2008). The educational system has likely been developed over time, possibly leading to a greater liberalizing effect (and cognitive sophistication) on students' attitudes than for the oldest generation. Yet, this mechanism cannot explain the weaker effect among the most recent generation in Northwestern Europe.

Generations have been understood as proxies for the societal climate during the individuals' formative years when examining the moderating effects of education. Future research is recommended to explore more precisely the driving factors that leads to the diverging education effects across generations and societal contexts. It would be necessary to control for macro-level factors such as economic development, the proportion of highly educated, the timing and extent of the educational revolution and the country-specific opportunities of educational attainment. Also, the degree of inequality should be examined. Inglehart (2018) has suggested that the rising level on inequality leads to less libertarian political stances in general. This could potentially be an answer to the weaker effect among the highly educated in recent generations, as a complement to the model based on the relative value and expectations of individuals investing in higher education. Still, this explanation is seemingly not applicable to the additional positive effects among the youngest cohort in Southwestern Europe – which is a region that likewise has experienced rising income inequality (Norris & Inglehart, 2019). Furthermore, a problem for these kinds of proposed multi-level models are the few countries included if using the ESS-data. The model would also need to consider the non-linearity among the interaction effects.

This study further confirms that a generational replacement occurs (Inglehart, 1990; Milburn, 2019). All generations are more liberal than the former one and the gap in attitudes between the generations is smaller between the two most recent generations. The notion of a cultural backlash is thus not clearly prominent in this study (Inglehart, 2018). The tables of means show that generation's average stances on the authoritarian-libertarian dimension are surprisingly stable and increases among the most recent generation. The cultural backlash likely occurs in groups within generations which the results of this study do not illuminate.

7.2 Limitations

There are several limitations to this study. One weakness is that the degree of polarization concerning cultural issues differs among generations within and across countries which could interfere with the results. For example, attitudes towards immigration had less variation and a higher consensus in public opinion historically, while today it is an exceedingly divisive political issue (Dancygier & Margalit, 2020). The unbalance in variation between generations concerning cultural issues could give erroneous results. Generations that are more polarized on a topic would constantly result in a greater effect of education. Even if all the existing variation within a generation with a high level of consensus is fully explained by education it will not result in the same effect. The education effect would be seen as weak in these cohorts because of the general agreement with only modest diverging attitudes. Still, one could also argue that the education effect is strong there if a high degree of the effects is caused by education. Future studies should consider this issue methodologically.

A second limitation to the study is the broad constructions of generations that could be argued to not be generalizable over countries, especially not over regions. A closer examination of a few countries with in-depth historical and economic analyses would thus benefit the aim. The comparative approach did, however, illuminate the importance of accounting for generational factors and how these patterns and the educational influence diverge in different contexts. The findings are crucial factors for understanding the association between education and socio-cultural attitudes. Hence, they filled a critical gap in a field pre-dominated by country studies.

Furthermore, the changing composition within education groups between generations and countries could imply that the results are misleading. It is not possible to account for all the substantial selection effects over time in educational attainment. Being low educated in older generations and some countries is relatively common (especially for women) while being low educated among the most recent generation or in Northwestern Europe is reasonably rare. The smaller proportion in the latter region implies that being lowly educated often is associated with additional individual-level factors that tend to make an individual culturally conservative. Thus, the highly educated group among recent generations and certain countries is more heterogeneous. In contrast, the low educated group in older generations and countries with lower economic development is more diverse. It is not possible to completely ensure that the

significant interaction effects occur because the actual effect of education differs between the generations or because it is the selection to education that varies.

As a final limitation to this study, the findings from the Eastern European sample cannot be clearly explained nor examined within the scope of this thesis. It is seemingly a fascinating phenomenon. However, exhaustive, detailed analyses are necessary to investigate the diverging effects of education in this region compared to Western Europe. It is noteworthy that the two most recent generations that had an extra weak effect of education are the cohorts that either spent their formative years during the fall of the Berlin wall and the collapse of the Soviet Union or grew up after it. The distinctiveness of education for socio-cultural attitudes should be marked in these cohorts, especially since younger cohorts in post-communist countries form their attitudes based on social position to a higher extent than generations socialized before the 1980s (Walzcak et al., 2012). It is necessary to consider how the countries have transformed during the 20th century and after the Soviet Era to understand this result e.g., the influence of the phenomenon “brain drain” where highly educated in Eastern Europe move to countries where there are higher rewards of their educational investment (Ienciu et al., 2015). The suggested mechanism based on the distinctiveness of education does not seem to be applicable here. This is a weakness of the theoretical framework but highlights the importance of taking the context into account. Possible alternative explanations for the differences between Eastern and Western Europe could be that the educational system in Eastern Europe does not transfer the same liberal values as the other regions. Again, exploring these mechanisms is beyond the scope of this thesis.

8. Conclusion

In conclusion, this thesis showed that generational characteristics are central factors for the education effect's strength on socio-cultural values. Generational differences disguises and influences the effect of education. This was shown through pooled OLS regression analyses with 30 European countries examined concurrently and divided by region. The results have demonstrated that the political significance and effect of education is, in general, weaker than previously thought and that the effect of education depends on the generation a person belongs to. Furthermore, it has been clear that there is substantial regional variation in how generational affiliation influences the education effect. This variation supports the notion of socialization effects from different societal contexts.

The results provide fundamental insights into how generations are associated with education's liberalizing impact and contribute to several areas. They deepen the understanding of what causes different political stances on today's central socio-cultural dimension by demonstrating the importance of temporal and contextual influences. They have highlighted the importance of distinguishing between different countries in these kinds of analyses instead of studying all European countries simultaneously. The historical and contextual variances are too different for generalized analyses. Additionally, the results contribute to academia in a broader sense. In line with recent findings, the thesis has highlighted the necessity of cautiousness when interpreting the educational factor since education is one of the most frequently used control variables that is involved in a majority of associations of, for example, political behavior. The effects of education are not equal among the population nor as strong as previously suggested.

An avenue for future studies would be to further explore the driving mechanism in how generational affiliation influence the education effect's strength and what explains the regional variation. A deeper exploration of the correlations found in this thesis could thus also shed light on the mechanism of the education effect. A research question that could be asked includes, for example, which impact the relative value of education has for the formation of values and attitudes. This issue was explored in this thesis but needs further examination through macro-level variables. A second avenue would be to consider the political aspects that intervene in the relationship between generations and the education effect. The research design of this thesis and previous research about the education effect have solely accounted for the stratification of the population and not focused on parties' mobilization or the saliency and polarization of the dimension's issues. Considering the diverging trends in Eastern Europe, a top-down approach could likely be beneficial. Lastly, it would be interesting to explore to what degree these results apply to other socio-cultural issues. For example, how strong education's dependency on generations is concerning European integration and environmental issues.

One of the most significant findings from this study is that it appears to be a declining effect of education on socio-cultural values in Northwestern Europe. This is the region where the education effect is argued to be the strongest. Nevertheless, the findings from this thesis suggest that the education effect is not only weaker here than previously assumed – but actually is weakening. The role of education to foster culturally liberal attitudes is seemingly diminishing.

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Appendix

A. Descriptive statistics

Table 6. GDP per capita 1980. USD

Northwestern Europe		Southwestern Europe	
Austria	10 869	Cyprus	4 232
Belgium	12 864	Greece	5 893
Denmark	13 886	Italy	8 456
Finland	11 223	Portugal	3 368
France	12 713	Spain	6 208
Germany	12 138		
Iceland	14 944		
Ireland	6 380		
Luxemburg	17 114		
Netherlands	13 791		
Norway	15 772		
Switzerland	18 832		
Sweden	16 957		
UK	10 032		

Source: World bank

Table 7. Summary statistics: Authoritarian – Libertarian in 2002 and 2018

	Mean	Std Deviation	Min	Max
Total	6.0	1.69	1	10
2002	6.00	1.69	1	10
2018	6.10	1.95	1	10

Source: European Social Survey 2002 – 2018. 30 countries.

Note: The difference in mean between 2002 and 2018 is 0.1 and significant at the $p < 0.001$ level as shown by the independent t-test. The index ranges between 1-10.

Table 8. Mean Authoritarian – Libertarian by educational attainment in 2002 and 2018

	Low educated	Medium educated	High educated
Total	5.5	5.9	6.8
2002	5.5	6.0	6.7
2018	5.5	5.8	6.9

Source: European Social Survey 2002 – 2018. 30 countries.

Note: The differences in mean within the education groups between 2002 and 2018 are consistently significant at the $p < 0.001$ level, as shown by the independent t-test. The index is ten-digit.

Table 9. Mean Authoritarian – Libertarian by generation in 2002 and 2018

Generation	1980-1996	1961-1979	1945-1960	1920-1944
Total	6.4	6.2	5.9	5.5
2002	6.3	6.2	5.9	5.5
2018	6.5	6.2	5.9	5.5

Source: European Social Survey 2002 – 2018. 30 countries.

Note: The differences in mean within the generations between 2002 and 2018 are significant in all groups, at least on the $p < 0.01$ level as shown by the independent t-test. The index is ten-digit.

Table 10. Mean educational attainment by generation in 2002 and 2018

Generation	1980-1996	1961-1979	1945-1960	1920-1944
Total	2.2	2.1	1.9	1.6
2002	1.8	2.0	1.9	1.6
2018	2.3	2.2	1.9	1.7

Source: European Social Survey 2002 – 2018. 30 countries.

Note: The differences in mean within the generations between 2002 and 2018 are consistently significant at the $p < 0.001$ level as shown by the independent t-test. The education variable is three-digit.

B. Full regression tables

Table 11. Authoritarian – libertarian attitudes (1-10). 2002 – 2018. Full sample

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education (low as ref)							
Medium	0.60*** (0.013)			0.46*** (0.013)	0.45*** (0.013)	0.34*** (0.014)	0.31*** (0.028)
High	1.26*** (0.013)			1.12*** (0.014)	1.12*** (0.014)	0.83*** (0.016)	0.76*** (0.033)
Generation (1920–1944 as ref.)							
1945-1960		0.54*** (0.014)	0.38*** (0.021)	0.40*** (0.015)	0.30*** (0.020)	0.31*** (0.022)	0.24*** (0.028)
1961-1979		0.84*** (0.014)	0.64*** (0.023)	0.59*** (0.014)	0.46*** (0.023)	0.46*** (0.024)	0.41*** (0.033)
1980-1996		0.94*** (0.016)	0.71*** (0.031)	0.73*** (0.016)	0.52*** (0.030)	0.47*** (0.032)	0.54*** (0.042)
Age (middle-aged as ref.)							
Young adult			0.05* (0.021)		0.11*** (0.021)	0.01 (0.021)	0.01 (0.022)

Late adult			-0.23*** (0.021)		-0.14*** (0.021)	-0.15*** (0.021)	-0.15*** (0.022)
Education#Generation							
Medium#1945-1960							0.09* (0.035)
Medium#1961-1979							0.04 (0.036)
Medium#1980-1996							-0.06 (0.042)
High#1945-1960							0.14*** (0.041)
High#1961-1979							0.11** (0.041)
High#1980-1996							-0.08 (-0.047)
Controls							
Woman =1						0.13*** (0.010)	0.13*** (0.010)
Residence (Large city ref.)							
Suburb						-0.10*** (0.019)	-0.10*** (0.019)
Town						-0.18*** (0.015)	-0.18*** (0.015)
Country village						-0.29*** (0.015)	-0.29*** (0.015)
Countryside						-0.39*** (0.028)	-0.39*** (0.028)
Parent's education						0.12*** (0.005)	0.12*** (0.005)
Income (subjective)						-0.23*** (0.007)	-0.23*** (0.007)
Model							
Intercept	5.6	5.5	5.7	5.3	5.4	5.7	5.8
Respondents	310 141	307 204	307 204	305 905	305 905	268 080	268 080
Adj. R ² (%)	17.5	14.3	14.4	19.3	19.3	22.0	22.1

Source: European Social Survey 2002 – 2018. 30 countries.

Note: p<0.5=* p<0.01=** p<0.001=***. Unstandardized B-coefficients. Weighted data. Robust standard errors.

Values in parenthesis are standard errors. Fixed effects for country and year as well as country-specific year.

Table 12. Authoritarian – libertarian attitudes (1-10). 2002 – 2018. Northwestern Europe

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education (low as ref)							
Medium	0.57*** (0.017)			0.43*** (0.017)	0.42*** (0.017)	0.33*** (0.019)	0.30*** (0.034)
High	1.32*** (0.017)			1.19*** (0.018)	1.19*** (0.018)	0.91*** (0.021)	0.81*** (0.038)
Generation (1920–1944 as ref.)							
1945-1960		0.55*** (0.018)	0.38*** (0.026)	0.41*** (0.018)	0.30*** (0.026)	0.33*** (0.028)	0.24*** (0.039)
1961-1979		0.84*** (0.017)	0.63*** (0.029)	0.59*** (0.018)	0.45*** (0.028)	0.46*** (0.031)	0.34*** (0.046)
1980-1996		0.93*** (0.021)	0.67*** (0.040)	0.78*** (0.020)	0.53*** (0.038)	0.48*** (0.041)	0.58*** (0.059)
Age (middle-aged as ref.)							
Young adult			0.07* (0.029)		0.15*** (0.027)	0.03 (0.029)	0.02 (0.030)
Late adult			-0.24*** (0.027)		-0.15*** (0.026)	-0.16*** (0.027)	-0.17*** (0.027)
Education#Generation							
Medium#1945-1960							0.07 (0.045)
Medium#1961-1979							0.12* (0.049)
Medium#1980-1996							-0.07 (0.057)
High#1945-1960							0.18*** (0.049)
High#1961-1979							0.21*** (0.052)
High#1980-1996							-0.05 (-0.062)
Controls							
Woman =1						0.19*** (0.013)	0.13*** (0.010)
Residence (Large city ref.)							
Suburb						-0.21*** (0.025)	-0.21*** (0.025)
Town						-0.32*** (0.021)	-0.32*** (0.021)

Country village						-0.44***	-0.43***
						(0.022)	(0.022)
Countryside						-0.49***	-0.50***
						(0.022)	(0.032)
Parent's education						0.14**	0.14***
						(0.006)	(0.006)
Income (subjective)						-0.24***	-0.24***
						(0.009)	(0.009)
Model							
Intercept	5.6	5.5	5.7	5.3	5.4	5.7	6.1
Respondents	174 485	172 453	172 398	171 604	171 552	167 781	146 753
Adj. R ² (%)	13.6	9.2	9.3	15.7	15.8	18.9	19.0

Source: European Social Survey 2002 – 2018.

Note: p<0.5=* p<0.01=** p<0.001=***. Unstandardized B-coefficients. Weighted data. Robust standard errors.

Values in parenthesis are standard errors. Fixed effects for country and year.

Table 13. Authoritarian-Libertarian attitudes (1-10). 2002 – 2018. Southwestern Europe

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education (low as ref)							
Medium	0.79***			0.65***	0.65***	0.49***	0.46***
	(0.027)			(0.028)	(0.028)	(0.030)	(0.110)
High	1.25***			1.14***	1.14***	0.88***	0.59***
	(0.028)			(0.029)	(0.029)	(0.034)	(0.116)
Generation (1920–1944 as ref.)							
1945-1960		0.55***	0.38***	0.38***	0.27***	0.26***	0.21***
		(0.036)	(0.052)	(0.036)	(0.051)	(0.050)	(0.054)
1961-1979		0.85***	0.64***	0.49***	0.36***	0.36***	0.37***
		(0.034)	(0.058)	(0.035)	(0.056)	(0.056)	(0.062)
1980-1996		1.01***	0.79***	0.59***	0.46***	0.41***	0.32***
		(0.039)	(0.072)	(0.041)	(0.070)	(0.071)	(0.082)
Age (middle-aged as ref.)							
Young adult			0.01		-0.01	-0.03	-0.02
			(0.045)		(0.04)	(0.044)	(0.045)
Late adult			-0.25***		-0.16**	-0.19***	-0.119***
			(0.051)		(0.049)	(0.049)	(0.049)
Education#Generation							
Medium#1945-1960							0.08
							(0.123)
Medium#1961-1979							-0.04
							(0.118)

Medium#1980-1996						-0.12	(0.127)
High#1945-1960						0.32*	(0.129)
High#1961-1979						0.28*	(0.122)
High#1980-1996						0.38**	(0.134)
Controls							
Woman =1						-0.02	(0.022)
Residence (Large city ref.)							
Suburb						-0.04	(0.044)
Town						-0.03	(0.031)
Country village						-0.13***	(0.030)
Countryside						-0.28**	(0.08)
Parent's education						0.10***	(0.013)
Income (subjective)						-0.20***	(0.016)
Model							
Intercept	3.5	3.4	3.6	3.2	3.3	3.7	3.9
Respondents	43 586	43 696	43 695	43 586	43 585	43 119	43 119
Adj. R ² (%)	20.7	16.5	16..6	22.0	22.1	23.6	23.7

Source: European Social Survey 2002 – 2018.

Note: p<0.5=* p<0.01=** p<0.001=***. Unstandardized B-coefficients. Weighted data. Robust standard errors.

Values in parenthesis are standard errors. Fixed effects for country and year.

Table 14. Authoritarian-Libertarian attitudes (1-10). 2002 – 2018. Eastern Europe

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Education (low as ref)							
Medium	0.46*** (0.027)		0.33*** (0.027)	0.33*** (0.027)	0.21*** (0.029)	0.34*** (0.063)	
High	0.89*** (0.032)		0.75*** (0.033)	0.74*** (0.033)	0.46*** (0.039)	0.70*** (0.095)	
Generation (1920–1944 as ref.)							
1945-1960		0.49*** (0.035)	0.39*** (0.048)	0.38*** (0.034)	0.31*** (0.046)	0.32*** (0.049)	0.30*** (0.071)
1961-1979		0.82*** (0.033)	0.69*** (0.052)	0.65*** (0.033)	0.57*** (0.052)	0.52*** (0.054)	0.67*** (0.078)
1980-1996		0.89*** (0.036)	0.75*** (0.065)	0.72*** (0.036)	0.59*** (0.065)	0.49*** (0.067)	0.86*** (0.089)
Age (middle-aged as ref.)							
Young adult			0.04 (0.042)		-0.07 (0.04)	-0.02 (0.042)	-0.01 (0.042)
Late adult			-0.14** (0.047)		-0.09* (0.044)	-0.07 (0.048)	-0.05 (0.047)
Education#Generation							
Medium#1945-1960							0.04 (0.078)
Medium#1961-1979							-0.20* (0.08)
Medium#1980-1996							-0.44*** (0.086)
High#1945-1960							-0.14 (0.110)
High#1961-1979							-0.28* (0.11)
High#1980-1996							-0.58*** (0.120)
Controls							
Woman =1						0.09*** (0.022)	0.09*** (0.022)
Residence (Large city ref.)							
Suburb						-0.01 (0.044)	-0.01 (0.044)
Town						-0.07* (0.028)	-0.06* (0.043)

Country village						-0.23***	-0.22***
						(0.028)	(0.027)
Countryside						-0.25**	-0.23**
						(0.08)	(0.084)
Parent's education						0.09***	0.10***
						(0.012)	(0.012)
Income (subjective)						-0.23***	-0.23***
						(0.017)	(0.017)
Model							
Intercept	4.3	4.1	4.3	4.0	4.1	4.7	4.7
Respondents	92 365	91 171	91 111	90 827	90 768	80 790	80 790
Adj. R ² (%)	13.8	13.9	14.0	15.6	15.6	17.4	17.5

Source: European Social Survey 2002 – 2018.

Note: p<0.5=* p<0.01=** p<0.001=***. Unstandardized B-coefficients. Weighted data. Values in parenthesis are standard errors. Robust standard errors. Fixed effects for country and year.

C. Interaction effects and additional marginsplots

Table 15. Authoritarian – Libertarian index. Three-way interaction.

Education (low as ref)	
Medium	0.30*** (0.03)
High	0.81*** (0.04)
Generation (1920–1944 as ref.)	
1945-1960	0.25*** (0.37)
1961-1979	0.35*** (0.04)
1980-1996	0.58*** (0.05)
Education#Generation	
Medium#1945-1960	0.08 (0.46)
Medium#1961-1979	0.12* (0.05)
Medium#1980-1996	-0.05 (0.05)
High#1945-1960	0.19*** (0.05)
High#1961-1979	0.24*** (0.05)
High#1980-1996	-0.01 (0.06)
Education#Generation#Region	
Medium#1945-1960#Southwest	0.02 (0.12)

Medium#1961-1979#Southwest	-0.17 (0.12)
Medium#1980-1996#Southwest	0.15 (0.14)
Medium#1945-1960#Eastern	-0.03 (0.09)
Medium#1961-1979#Eastern	-0.32*** (0.09)
Medium#1980-1996#Eastern	-0.38*** (0.10)
High#1945-1960#Southwest	0.12 (0.14)
High#1961-1979#Southwest	0.01 (0.13)
High#1980-1996#Southwest	0.34* (0.15)
High#1945-1960#Eastern	-0.34** (0.12)
High#1961-1979#Eastern	-0.54*** (0.12)
High#1980-1996#Eastern	-0.60*** (0.13)

Source: European Social Survey 2002 – 2018.

Note: $p < 0.5 = *$ $p < 0.01 = **$ $p < 0.001 = ***$. Unstandardized B-coefficients. Weighted data. Robust standard errors. Standard errors in parenthesis. Fixed effects for country, year, country-specific year and controls included. Northwestern Europe, low educated and the oldest generation 1920-1944 are used as the reference categories. N= 268 080.

Figure 7. Predictive margins, Full sample

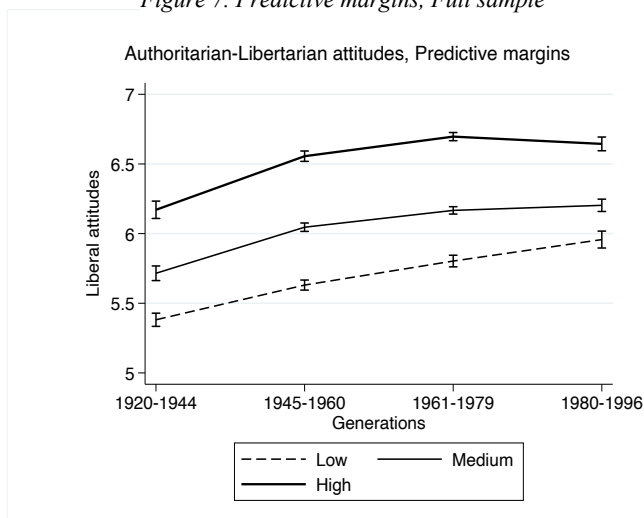


Figure 6. Predictive margins, Northwest

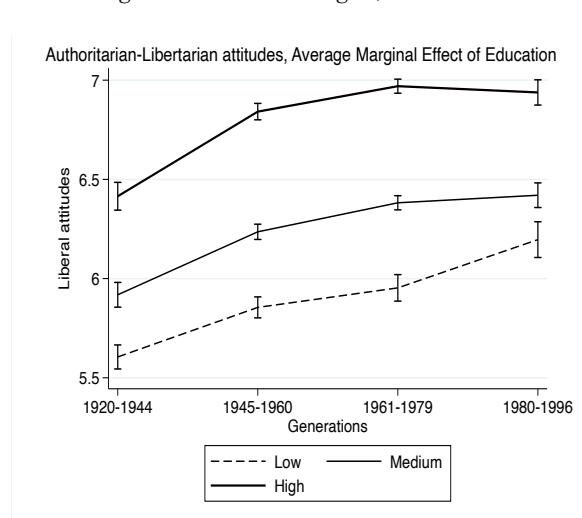


Figure 8. Predictive margins, Southwest

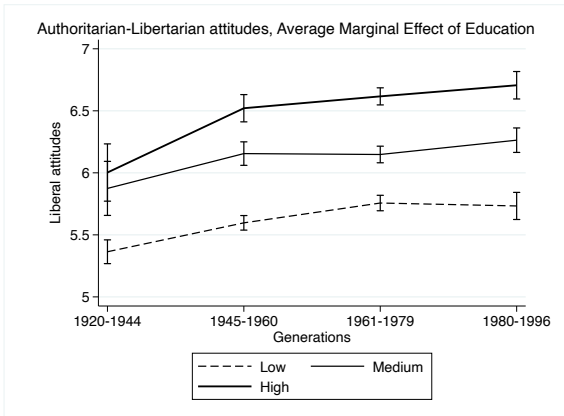


Figure 9. Predictive margins, East

