Political participation and engagement among young and adult people in Germany over time: A re-assessment using the ‘identity-equivalence procedure’

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Abstract

One of the central and constantly recurring features of youth participation studies is the depiction of young people and adolescents as the future of democratic politics. According to previous research, however, young people exhibit generally lower levels of political participation than adults and also show decreasing trends in their political activities over time. In this study, we argue that, in order to arrive at meaningful conclusions about young and adult people’s political participation over time, ‘construct-equivalent’ rather than identical instruments of political participation across different age groups and time points should be used. Applying the so called ‘identity-equivalence procedure’ for political participation across three different age groups and the time period 2002-2014, our results indicate that (1) the concrete manifestations of the concept of political participation differ across young and adult people and over time and (2) levels of political participation are quite similar for young and adult people and increasing from 2002-2014. Therefore, the commonly employed strategy of applying identical instruments of political participation across age groups and time points appears at least questionable.
1 Introduction

Citizens’ participation and engagement in the political process count as a ‘conditio sine qua non’ of any democratic system. Consequently, it is not surprising that virtually every discussion about the well-being of democracy is strongly linked to debates and complaints about citizens’ disengagement and alienation from politics (cf. Verba and Nie 1972, 1; Verba, Schlozman and Brady 1995, 1; Rosenstone and Hansen 1993, 1). In this context, especially young people and adolescents have been singled-out as one of the major driving forces behind decreasing participation rates and growing disenchantment with the political sphere. Common depictions and characterizations of young people and adolescents in previous youth participation studies thus regularly include labels and terms such as ‘apathetic’, ‘alienated’, and ‘disengaged’ (cf. Garcia Albacete 2011, 2; Martin 2012, 213). This is especially true in the German context where previous youth participation studies have repeatedly highlighted continuously high levels of ‘Politikverdrossenheit’ among the German youth (cf. Schneekloth 2015, 178-82; Sloam 2014, 664). As Henn and Foard summarize, “the message from many such studies is that young people's levels of political participation in general are in decline, and at a somewhat more rapid rate than is the case for older adults and also for previous youth cohorts” (2014, 361).

Yet, the validity of such a far-reaching conclusion hinges on several factors, as it implies a simultaneous statement about the levels of political participation (1) for young and adult people as well as (2) over the course of time. In order to allow for this kind of conclusion, a study has to meet at least three criteria. First, it should be based on a coherent sample of both young and adult people to facilitate direct comparisons of political participation levels across different age groups. Studies that rely on different samples for young and adult people remain inconclusive as to whether possible differences in political participation levels between age groups are ‘real’ or merely an artefact of different sampling frames or techniques for young and adult people. Second, the study should be based on a coherent sample of both young and adult people over time to facilitate direct comparisons of participation levels across age groups at different points in time. Third, the study should ensure that the measurement of political participation is a valid and reliable representation of the same underlying concept across young and adult people as well as over time. This at least necessitates an investigation of the underlying structure of the concept of political participation and at best implies the development of so called ‘construct-equivalent’ instruments of political participation (cf. Garcia Albacete 2011, 17) across different age groups and points in time. Studies that simply assume that identical instruments of political participation can be uniformly applied across young and adult people as well as over time without checking this assumption empirically might miss important differences in the underlying structure of political participation and are therefore ill-suited to draw valid conclusions. To summarize, only if the above three criteria are met, we might arrive at...
meaningful conclusions about the levels of political participation between young and adult people as well as their developments over time.

A cursory glance at existing studies dealing with youth political participation reveals that none fulfills all of the three criteria mentioned. Pure youth participation studies by definition violate the first criterion of a direct comparison between young and adult people (see, for example, Henn and Foard, 2014; Gaiser, de Rijke and Spannring 2010; Quintelier 2007). Those studies that conform to the first criterion either lack a comparison over time or do not analyze the underlying structure of political participation (see, for example, Martin 2012). Finally, those studies that meet the third criterion and assess the underlying structure of political participation are either restricted to one point in time or only investigate one age group, thus violating the first or second criterion (see, for example, Bakker and de Vreese 2011; Quintelier 2008; Henn and Foard 2014; Dalton, van Sickle and Weldon 2010).

Against this background, the present study offers a re-assessment of young people’s political participation by investigating the structure and levels of political participation across young, adult and old people in Germany over the time period 2002-2014. Applying the so called ‘identity-equivalence procedure’ (cf. Przeworski and Teune 1966), this study develops age-group and time-point equivalent instruments of political participation that allow for meaningful comparisons of political participation levels across young and adult people as well as over time. In doing so, this study sheds more light on contemporary questions of (increasing) political apathy among young people and the peculiarities of youth participation in general.

The remainder is structured as follows. Section 2 provides an overview of the main findings and strategies of previous studies and identifies common problems in research on political participation in general and youth participation studies in particular. Section 3 introduces the ‘identity-equivalence procedure’ for investigating the structure and levels of political participation across young and adult people over time and presents the results of its empirical implementation. Section 4 assesses the robustness of the ‘construct-equivalent’ scales of political participation as obtained by the ‘identity-equivalence procedure’. Section 5 discusses the most important findings as well as their broader implications and concludes.

2 Research on political participation across young and adult people: main findings, strategies, and problems

One of the central and constantly recurring features of youth participation studies is the depiction of young people and adolescents as hope and sorrow for the future of democratic politics. As Mycock and Tonge (2012, 141) summarize this view, young people are “often discussed within the context of national decline or regeneration, being projected as symbolic of the positive and progressive future or typified as a threat and somehow out of control.” Most of
the time, however, it is the latter perspective that seems to dominate the discussion. Young people are portrayed as “apathetic or even antipolitical, with neither aptitude nor inclination for participating in any form of collective social endeavour, and with no sense of civic responsibility” (Henn and Foard 2014, 360; see also Quintelier 2007, 165; Neufeind, Jiranek and Wehner 2014, 278; Martin 2012, 213; Cammaerts et al. 2014, 648). While such characterizations may serve the purpose of clarifying the importance of young people’s political participation and engagement for the well-being and future prospects of democratic systems, they are usually just a starting point for a more nuanced analysis in which the main empirical finding is that young people, in fact, do not participate less but rather differently when compared to their adult counterparts (cf. Sloam 2013, 851; Quintelier 2007, 177). More specifically, most studies find that, while young people may be alienated from traditional electoral or formal politics, they do engage in non-electoral or informal modes of political participation which reach beyond the realm of institutionalized politics (cf. Vissers and Stolle 2014, 937; Cammaerts et al. 2014, 657; Sloam 2014, 676). In comparison with adults, then, young people’s political participation seems to be less formal, less institutionalized, and less hierarchical, and they appear to prefer more individualized, lifestyle-oriented modes of participation such as signing petitions, protesting, or political consumerism (cf. Sloam 2013, 837; Stolle, Hooghe and Micheletti 2005, 250). Based on these insights, it is clear that a comparison of political participation between young and adult people does not only have to consider the level of participation, but also the respective modes of participation being used by young and adult people, respectively.

As such, the analysis of young people’s political participation is directly linked to discussions about the continuous expansion of the political participation repertoire and distinctions between different ‘types’ of political participation (cf. van Deth 2014; Vissers and Stolle 2014, 937). Whereas voting, contacting politicians or working for a political party are usually considered to be specimens of ‘formal’, ‘conventional’, ‘institutionalized’ or ‘elite-directed’ participation, other modes such as signing petitions, demonstrating or boycotting are usually labeled as ‘unconventional’, ‘non-institutionalized’ or ‘protest’ participation (cf. van Deth 2014, 361; Linssen et al. 2014, 33-4; Marien, Hooghe and Quintelier 2010, 198; Martin 2012, 216-7; Gaiser, de Rijke and Spannring 2010, 440). While these different ‘types’ are well-known and frequently employed in research on political participation, there are at least two problems concerning the way in which they are being used.

The first problem refers to research on political participation in general and touches upon the fact that one and the same mode of participation is oftentimes assigned to different types of participation across different studies. For example, whereas Marien, Hooghe and Quintelier (2010, 198) consider ‘donating money’ to be a specimen of ‘non-institutionalized’ participation, Gaiser, de Rijke and Spannring (2010, 440) depicts it as a mode of ‘conventional’ participation.
Similarly, Neufeind, Jiranek and Wehner (2014, 285) classify ‘signing a petition’ as a mode of ‘conventional’ participation, whereas Gaiser, de Rijke and Spannring (2010, 440) labels it as ‘unconventional’, Martin (2012, 217) as ‘non-electoral’, and Marien, Hooghe and Quintelier (2010, 198) as ‘non-institutionalized’ participation. As these examples make clear, previous studies do not assign individual modes to commonly employed types of political participation in a coherent manner. While this observation does not establish a problem per se (especially in cases where a certain mode may change its meaning over time, i.e. a previously unconventional mode becomes rather conventional; see Linssen et al. 2014; 34), the real problem is that none of these studies actually tests which of the several modes of participation might actually be summarized or clustered to form one (or more) coherent type(s) of political participation. As a consequence, the respective composition of different types of participation varies from one study to another and we do not know whether differences and changes in the levels of different types of participation are due to their varying composition of different modes of participation or rather represent ‘real’ differences and changes. Instead of simply assigning certain modes to certain types of participation, a solution to this problem would be to actually test which modes belong to which type(s) (over time). This strategy would not only tell us which respective modes of participation might form a coherent type of participation and whether different conceptions of participation are indeed reflected in our data, but also whether the composition of modes within a certain type changes over time. Yet, a lot of studies do not assess the structure of different modes of political participation and rather choose to build additive indices (cf. Quintelier 2007, 174; Hao, Wen and George 2014, 1226; Wray-Lake and Hart 2012, 457) or use self-defined assignments of participation modes to types (cf. Gaiser, de Rijke and Spannring 2010, 440; Vissers and Stolle 2014, 946-7; Martin 2012, 218-9; Neufeind, Jiranek and Wehner 2014, 285; Soler-i-Marti and Ferrer-Fons 2015, 101; Lorenzini 2015, 387; Marien, Hooghe and Quintelier 2010, 198). Those studies that do assess the structure of political participation provide valuable (empirical) information on which modes form a coherent type of participation, but are usually restricted to one point in time (cf. Bakker and de Vreese 2011, 457-8; Quintelier 2008, 359-60; Henn and Foard 2014, 365; Dalton, van Sickle and Weldon 2010, 61; Kern, Marien and Hooghe 2015, 471; McFarland and Thomas 2006). As a consequence, these studies have nothing to say about possible changes in the underlying structure of (different types of) political participation over time which, however, is of crucial importance especially in the context of longitudinal studies.

To summarize, a recurring problem of political participation studies in general is their reliance on frequently used conceptions and types of political participation without any prior assessment as to whether these conceptions and types are actually reflected in their data. This does not only lead to conceptual confusion across different studies but, more importantly, also to confusion
about how to interpret changes and developments in the levels of political participation (over
time). Therefore, in order to arrive at meaningful conclusions about the levels of political participation (and their changes over time), a necessary step is the assessment of whether the respective conceptions and types we use for our analyses are actually reflected in our data and can be meaningfully applied at all (over time). Only with this strategy we can ensure that the results we obtain indicate ‘real’ differences and changes in political participation and are not simply an artefact of applying commonly used conceptions and types of political participation that, in fact, do not correspond with empirical realities.

The second problem, which is more pertinent to our focus on young people's political participation, has to do with the applicability or generalizability of commonly employed conceptualizations and types of political participation across different age groups. As highlighted before, distinctions between different types of political participation, such as 'conventional vs unconventional' or 'institutionalized vs non-institutionalized', are part of the standard toolkit of political participation research. The fact that these distinctions are so frequently (and successfully) applied is probably one of the major reasons why their usage is generally not called into question. However, especially in the context of research on youth participation, it appears important to note that these conceptualizations and distinctions have been developed first and foremost with reference to the general or adult population, which at least leaves room for the possibility that they are not applicable in the same manner to young people as well. As O'Toole et al. remind us, “[y]oung people are often seen in conventional accounts of political participation as simply a subset of the general population. Analyses of youth participation need to consider young people as a specific group with their own particular circumstances and concerns” (2003, 46). Accordingly, in addition to the mere possibility that the commonly used distinctions between different types of political participation might not be applicable to young people in the same way as for adults, there are also arguments that might substantiate this idea. As Quintelier has pointed out, “young people operate with a very narrow conception of politics that is restricted to formal politics only” (2007, 177; see also O'Toole et al. 2003, 52). If we consider this limited and narrow conception of politics to inform their conception and understanding of political participation as well, it can be reasonably assumed that young people's political participation is less faceted and based on fewer modes of participation than that of adult people. In a similar manner, changes or delays in youth transition periods as highlighted by previous studies (cf. Soler-i-Marti and Ferrer-Fons 2015, 96; Garcia Albacete 2011, 6; Gauthier 2007, 218) might also open the possibility for varying structures of political participation over time.

To summarize, a central and recurring problem of many youth participation studies is their adoption of conceptions and types of political participation that have been developed in the
context of the general population without inspecting whether these can be meaningfully transferred and applied to young people as well. As a consequence, we do not know whether observed differences and changes concerning participation levels between young and adult people are real or merely an artefact of (mistakenly) applying the identical conceptions and types of political participation to young and adult people alike. Therefore, in order to arrive at meaningful conclusions about the levels of political participation across young and adult people, a necessary step is the assessment of whether the respective conceptions and types we use for our analyses are actually reflected in our data and can be meaningfully applied across young and adult people alike. In case commonly used conceptions and types of political participation cannot be applied in the same way across young and adult people, a straightforward option would be to stick with comparisons of individual modes of participation only (cf. van Deth 2014, 350). Another option, which we propose here, is to develop equivalent (rather than identical) age-group specific instruments of political participation in order to compare young and adult people’s political participation. The general logic of this option can be easily extended to analyses over time: in case the underlying conception of political participation (for young and adult people) changes over time, we may develop equivalent (rather than identical) time-point specific instruments of political participation to meaningfully compare levels of participation over time. In the remainder, we present the general logic of our proposed procedure and clarify its concrete implementation with an empirical investigation of the concept ‘political participation’ across young and adult people over the time period 2002-2014.

3 Political participation across young and adult people over time: Constructing equivalent scales of political participation with the ‘identity-equivalence procedure’

In this section, we take up the previously identified problems in research on young people’s political participation in order to get an impression of their possible impact in former studies. Our primary aim is to investigate whether the underlying meaning and structure of the concept political participation is (1) the same or different across young and adult people and (2) stable or changing over the course of time (within the groups of young and adult people). As argued in the previous section, meaningful comparisons between young and adult people’s political participation (over time) are only possible if we ensure that the underlying meaning of the concept is indeed ‘comparable’. The research strategy proposed in the remainder of this section tests the structure of the underlying concept of political participation across age groups and time and thus sheds some more light on the differences and similarities concerning young and adult people’s political participation (over time). In doing so, it offers an answer to the question whether commonly employed conceptualizations and types of political participation (such as the distinction between conventional vs unconventional or institutionalized vs non-institutionalized participation), which have been developed for the general or adult population and also been
used in previous studies on youth participation, can be meaningfully applied to young people at all. In addition, it provides valuable information on whether the underlying structure of (different types of) political participation is subject to changes over time.

3.1 The 'identity-equivalence procedure' for political participation

For our empirical investigation, we make use of the so called ‘identity-equivalence procedure’ which has originally been introduced by Przeworski and Teune (1966) in the context of cross-cultural research. The basic premise of this procedure is that, in order to be comparable, measurements of the same concepts do not have to be identical but rather equivalent (cf. Przeworski and Teune 1966, 555-9). More specifically, as its name suggests, the procedure is based on two consecutive steps. In a first step, it involves the search for a so called ‘identity set’ of survey items that can be regarded as a valid representation of a given concept across all subgroups of interest (cf. van Deth 1986, 265). These subgroups are usually different countries but the same underlying logic can be easily extended to include different social classes or age groups as well. For example, in the present study we would search for a common set of survey items that form a consistent scale of the concept political participation across young and adult people alike as well as over time. This common set of items would then constitute our ‘identity set’ of political participation. In a second step, the identity-equivalence procedure implies the search for additional survey items that can be used to extend the identity set of political participation in a sub-group and time-point specific way. Accordingly, in the present study we would search – separately for young and adult people as well as time points – for additional survey items that can be added to the existing scale of political participation which is based on the identity set only. Since the respective survey items to be added to the identity scale of political participation might possibly differ between young and adult people and time points, the resulting age-group and time-point specific scales of political participation are no longer identical but rather equivalent. Adding age-group and time-point specific items to our identity scale helps us to arrive at "longer, more reliable and more contextually relevant instruments" of political participation (Garcia Albacete 2011, 29). With this strategy, the identity-equivalence procedure ensures that we are analyzing the same underlying concept across different subgroups and time points (due to the identity scale which consists of the same items across all subgroups and time points) while at the same time allowing for the possibility that manifestations of the same underlying concept might differ in specific ways for different subgroups and time points (due to the construction of the equivalence scales).

While the identity-equivalence procedure has been developed for the purpose of establishing equivalent measures across different cultural contexts, we believe that it can be fruitfully applied to investigate the underlying meaning and structure of the concept political participation across different age groups and time points as well. In contrast to previous studies
on youth political participation, we thus do not simply assume that political participation exhibits the same underlying meaning and structure (over time) for young and adult people alike but rather put this proposition to an empirical test. Applying the identity-equivalence procedure as proposed by Przeworski and Teune (1966) thus enables us to analyze the meaning and structure of political participation and to arrive at equivalent measures of political participation that allow for meaningful comparisons across age groups and time.

3.2 Implementing the ‘identity-equivalence procedure’ for political participation: Methods and data

For the concrete implementation of the procedure, we rely on Mokken Scale Analysis (MSA) (Mokken 1971). MSA is based on principles of nonparametric item response theory (IRT) and constitutes a probabilistic extension of the Guttman scale (cf. van Schuur 2003, 139). MSA can be used to investigate response patterns to a set of survey items that are supposed to measure a certain latent trait, such as ‘political participation’ in the present study (cf. Sijtsma and Molenaar 2002; van Schuur 2003; van der Ark 2007; 2012; Linssen et al. 2014, 39-41; Schnaudt, Walter and Popa 2016, 76). MSA assumes that each respondent has a certain, unknown value on that latent trait, so that the probability of a positive response to any of the survey items for political participation increases with that unknown value on the latent trait. For the construction of political participation scales, the individual survey items have to meet certain criteria as implied by the monotone homogeneity model: all item pairs have to be positively correlated and the scalability coefficients for each individual item have to exceed a certain lower bound (usually item H>0.3). In addition, the overall degree of scalability for the resulting scale(s) as indicted by Scale H should exhibit a minimum value of 0.3 as well. In MSA, the item scalability coefficients can be compared to discrimination parameters in parametric IRT models, whereas the Scale H indicates the average discrimination power with regard to the ordering of all items in the final scales (cf. Mokken 1971, 184-5; van der Ark 2007, 3-4; van Abswoude, van der Ark, and Sijtsma 2004, 6; Sijtsma, Meijer and van der Ark 2011, 33). If the assumptions of the monotone homogeneity model hold, respondents and items can be meaningfully ordered along a latent continuum of political participation.1 While MSA has been successfully applied in previous studies of political participation (cf. van Deth 1986; Garcia Albacete 2011; Linssen et al. 2014), this study is the first to use it for analyzing the structure of political participation across different age groups and time points.

For the purpose of the present study, MSA is particularly suitable because it provides us with answers to our main questions of interest: First of all, it identifies which concrete modes of participation might be summarized to form coherent scales or types of political participation and whether these modes are constant or varying across young and adult people and over time.

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1 For a more detailed discussion of MSA, including its properties and underlying assumptions, see Mokken 1971; Sijtsma and Molenaar 2002; van Schuur 2003; van der Ark 2007; 2012; Ligtvoet et al. 2010; 2011.
(cf. van Deth 1986, 265). What is more, it gives us information on the ranking or ‘difficulty’ of individual survey items along the latent continuum ‘political participation’ and whether we find an identical or varying item order across young and adult people and over time (cf. Linssen et al. 2014, 42-4; Garcia Albacete 2011, 24). Last but not least, it allows us to construct equivalent scales of political participation across young and adult people and over time and thus enables us to draw meaningful conclusions about differences and similarities with respect to the levels of political participation across different age groups and time points.

With regard to our empirical analysis, we rely on German data from all seven waves of the European Social Survey (ESS) covering the years 2002-2014. The ESS is a biennial survey covering a wide range of European citizens’ economic, moral, social and political attitudes and behaviors and has been conducted in more than thirty European countries since 2002 (for a general overview of the ESS, see Schnaudt et al. 2014). Considering the focus of the present study, the advantage of using data from the ESS consists in its combination of providing (1) a stable set of survey items tapping the concept political participation for a time period of twelve years and (2) a representative sample of the German population aged 15 and above. Relying on ESS data thus remedies at least two possible shortcomings of previous studies. First, since it covers the general population aged 15 and above, it enables us to directly analyze differences and similarities in political participation between young and adult people using only one coherent sample. Such a direct comparison between young and adult people allows us to find out more about the specificities of young people’s political participation and establishes an advantage vis-à-vis pure youth studies (for example, Gaiser, de Rijke and Spannring 2010; Quintelier 2007). Second, covering people already at the age from 15, the ESS allows us to depict a more realistic and encompassing picture of young people than previous studies relying on a sample only with respondents aged 18 or above (for example, Henn and Foard 2014; Wray-Lake and Hart 2012). Germany is a substantively interesting case to focus on given previous findings about continuously high levels of ‘Politikverdrossenheit’ among the German youth (cf. Schneekloth 2015, 178-82; Sloam 2014, 664). In addition, our focus on Germany also reflects a pragmatic decision based on sample size and data availability. While the ESS is a survey of the general population, sample sizes in Germany are sufficiently high (more than 2,750 respondents in each of the seven waves) to still allow for meaningful analyses across young and adult people as well as individual waves of the survey (cf. Schnaudt et al. 2014, 501-2). Our focus on Germany thus remedies the problem of very small sample sizes for the young population that is routinely encountered in other studies (cf. Sloam 2014, 668). A further reason for focusing on German ESS

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2 For all empirical analyses based on ESS data, we make use of a cumulative, country-specific data set for Germany that has been compiled by the first author of this study. This data set contains all country-specific German data from the first seven waves of the ESS (2002-2014) and is available from the authors upon request. A previous version of this data set including all German data of the first six waves of the ESS is available under http://www.europeansocialsurvey.org/about/country/germany/german_data.html.
data is the availability of additional items for political participation that have only been asked in Germany, such as taking part in a referendum (cf. Schnaudt et al. 2014, 500). This broader set of items will be used for a robustness check of our results for the ‘identity-equivalence procedure’ at a later stage of the analysis (section 4).

In our following analysis, we employ a total of seven items that are supposed to measure the concept of political participation which we broadly define here as “citizens’ activities affecting politics” (van Deth 2014, 351). While the ESS provides a higher number of suitable items in certain waves, we select these seven items because they are available in all seven waves of the ESS and can be meaningfully applied to all respondents aged 15 and above. This implies that we exclude the item ‘voting in national elections’ from our analyses as it would lead to the exclusion of a substantial and theoretically important subset of our sample, namely all young people who did not have the chance to vote in the last general election due to their young age (cf. Quintelier 2007, 169). The seven items selected are: (1) working for a political party or action group, (2) contacting politicians or government officials, (3) working for another organization or association, (4) wearing a badge or campaign sticker, (5) signing a petition, (6) taking part in a lawful demonstration, and (7) boycotting products. The ESS asks which of these several activities respondents have done within the last twelve months. This question wording ensures that responses are not biased against young people who, due to their lower age, did not have the same chances of engaging in political activities as adult people (cf. Martin 2012, 215). In the remainder of this section, we analyze the structure of these seven items separately for three age groups. In addition to a group of young people (aged 15-29) and a group of adult people (aged 30-65), we also investigate a group of older people (aged 66 and above). This classification is informed by one of the most established findings in participation research according to which political participation follows the shape of an inverted U, implying that participation rates increase with age and then drop again when people get older and reach retirement (cf. Milbrath 1965, 134; Milbrath and Goel 1977). While the cutting point for distinguishing between the second and the third age group is rather straightforward (i.e., transition to retirement), the decision to classify people until the age of 29 as belonging to the youngest category is informed by theoretical arguments and empirical findings about a longer or delayed transition from youth to adulthood (cf. Garcia Albacete 2011, 6; Gauthier 2007, 218). As “transformations in patterns of youth participation in Western Europe may arise more from the lengthening of youth than from any generational change” (Soler-i-Marti and Ferrer-Fons 2015, 96), implying that young people reach important stages of their life-cycles (e.g., marriage, getting children) at a later point in time as compared to some decades ago, we consider the age of 29 as a plausible cutting point for distinguishing between young and adult people.
3.3 Results of the ‘identity-equivalence procedure’ for political participation

Before we turn to the results of the identity-equivalence procedure for political participation, Figure 1 gives a first descriptive overview of the seven items for political participation across the three age groups and seven time points (2002-2014) under consideration.

At first glance, it can be seen that the overall participation levels seem to be lower for the oldest age group as compared to the two remaining age groups. None of the seven participation forms exceeds an average participation rate of 30 percent and almost all of them remain below 20 percent for people being older than 65. What is more, while there are differences concerning the level of participation between age groups, the figures indicate an increase in the average participation rates for certain items over time across all age groups (e.g., working for an organization, signing a petition, boycotting products). Other forms of participation, such as working for a political party or wearing a badge, remain at rather stable levels across time and age groups. A different way of looking at Figure 1 is to inspect the order of the seven forms of participation across age groups. While for young people the rank order of the four items with the lowest participation rates is working for a political party, wearing a badge, contacting politicians and demonstrating (in increasing order), the ranks of demonstrating and contacting are reversed for the adult age group. For the oldest age group contacting is as well the most prominent form, while for the three remaining forms of participation the rank order varies over time. Turning to the three most prominent modes of participation, we again observe differences in the rank order across age groups and time. For the youngest age group, boycotting is always less prominent than signing a petition. Interestingly, working for an organization or association over time changes its position from the least prominent of the three items to the most prominent. For the adult age group, there is more stability over time concerning these three items. Working for an organization remains the least prominent of the three items in all years, signing a petition is the most prominent from 2002-2006 and 2014, whereas boycotting is the most prominent from 2008-2012. Within the oldest age group, these three items do not show any systematic rank order but rather change their positions from year to year. To summarize, the inspection of the seven individual modes of political participation as depicted in Figure 1 shows some similarities and common trends between age groups and over time. Yet, some differences with regard to the average levels and rank order of these seven modes across age groups and time points are also evident. At this stage of the analysis, then, the main question of interest concerns whether these differences in the frequency distribution and rank order of the
seven individual modes indicate the existence of different meanings or structures underlying the concept of political participation across different age groups and time points.

To answer this question, we turn to the identity-equivalence procedure as briefly described before. In a first step, we search for the so called ‘identity set’ of political participation. The identity set is that set of items which corresponds to the properties of a Mokken Scale and is valid across all age groups and time points under investigation. Starting first with the pooled data set to get an impression of the structure of political participation across all respondents and time points (with no distinctions between age groups and ESS waves), MSA yields a uni-dimensional scale of political participation consisting of six out of the seven items under consideration. More specifically, with the exception of ‘boycotting products’ all remaining modes of participation can be summarized to form a coherent scale of political participation (Scale H=0.35, LCRC=0.66). This finding also indicates that, at least for the pooled data set, commonly employed types of political participation, such as ‘institutionalized vs non-institutionalized’, do not receive empirical support. The interesting question at this point is whether the political participation scale found for the pooled data set can be replicated in the same way across all age groups and over time to form our ‘identity set’ of political participation. The short and clear answer is ‘no’. From the total seven items included in our analysis, the only set of items that corresponds with the criteria of a Mokken Scale across all age groups and time points consists of the three items working for a political party, contacting politicians, and working for another organization. Accordingly, these three modes of participation can be meaningfully summarized to form our ‘identity set’ of political participation. Again, it has to be noted that MSA yields only one scale of political participation, indicating that commonly used conceptions and distinctions between different types of political participation are not supported in our data. Table 1 presents the detailed properties of the final three-item identity scale of political participation across age groups and time points.

<Table 1 about here>

As can be seen, all item scalability coefficients exceed the critical lower bound of 0.3. The overall scalability of the resulting scales ranges between 0.35 (young people in 2004) to 0.55 (older people in 2012). In five out of twenty-one cases, the scale H is below 0.4 (indicating a weak scale), in eleven out of twenty-one cases the scale H is between 0.4 and 0.5 (indicating a medium scale), and in five out of twenty-one cases the scale H is above 0.5 (indicating a strong scale) (cf. 3 The LCRC (Latent Class Reliability Coefficient) is a measure of reliability in MSA (see van der Ark, van der Palm and Sijtsma 2011).
Mokken 1971, 185; van Abswoude, van der Ark, and Sijtsma 2004, 6). The reliability coefficients of the resulting identity scales as measured by rho and LCRC, respectively, do not reach conventional levels of 0.7 which can be explained by the fact that the identity scale consists of only a small number of three items which, in addition, also lack a uniform distribution in their difficulties or frequency distribution (cf. Garcia Albacete 2011, 27).

Based on the three-item identity scale of political participation, the second step of the identity-equivalence procedure consists in adding further, age-group and time-point specific items to that scale. In this step, additional items are added as long as the properties of a Mokken Scale hold. With this strategy, longer and more reliable scales of political participation can be found that reflect the specific conditions of the respective age groups and time points while still being manifestations of the same underlying concept due to their inclusion of the same identity set. The results of the second step of the identity-equivalence procedure are summarized in Table 2.

<Table 2 about here>  

As can be seen, in sixteen out of twenty-one cases the identity scales could be enriched with age-group or time-point specific items. For the adult age group, with the exception of 2008, the scale for political participation could be extended by three additional items (wearing a badge, signing a petition, demonstrating). The same holds true for the oldest age group in the years 2004, 2006, 2008 and 2012 as well as for the youngest age group in 2008. For the youngest age group it is further noteworthy that the identity scale could not be extended at all in the years 2004, 2010, 2012 and 2014. The item for boycotting products was not scalable in any of the age groups across time (item H <0.3). In thirteen out of twenty-one cases, the final equivalent scales of political participation establish weak scales (Scale H 0.3-0.39), while in the remaining eight cases they form medium scales (Scale H 0.4-0.49). More importantly, however, in all sixteen cases where additional items could be added, the reliability of the final equivalent scales in comparison to the identity scale could be improved.

So far, we have found that the underlying structure of the concept political participation varies quite substantially across the three age groups as well as over time. In general, political participation seems to encompass more modes of participation for adult than young people and also seems to be more stable for the former than the latter when it comes to its underlying structure over time. On both aspects, the oldest age group takes in a medium position. A last piece of valuable information contained in Table 2 concerns the rank order of the individual modes of participation within the final equivalent scales of political participation. Here we can observe that, even in those instances where the final equivalent scales are identical across the
three age groups, the rank order of the individual modes differs between young, adult, and old people. Using the six-item equivalence scale as an example, we see that for young and adult people the least common (or most ‘difficult’) mode of participation is working for a political party, whereas for the oldest age group the most difficult mode is wearing a badge. We also observe that contacting politicians is more difficult for young people as compared to adult and old people, while the opposite holds true for demonstrating. Next to these differences, it is also evident that signing petitions appears to be the least difficult mode of participation across all three age groups.

A more detailed investigation of the item ordering across age groups and time points is depicted in Figure 2. Here we assessed whether the item rank orders as shown in Table 2 are the same for all respondents within a respective age group at a given point in time. In more technical terms, we investigated the existence of an invariant item ordering (IIO) across respondents as implied by the double monotonicity assumption in MSA (cf. Ligtvoet et al. 2010; 2011; Sijtsma, Meijer and van der Ark 2011; Watson et al. 2014). In general, the existence of IIO implies that the item response functions of any pair of items do not intersect and are sufficiently different from each other to speak of a meaningful order of items across respondents. For the inspection of IIO, Ligtvoet et al. (2010; 2011) have proposed the coefficient $H^i$ which should exhibit a minimum value of 0.3 in order to draw meaningful conclusions about the existence of IIO and the inherent rank order of the items within a Mokken Scale (see also Sijtsma, Meijer and van der Ark 2011; Watson et al. 2014, 74-5; Schnaudt, Walter and Popa 2016, 79-81).

Figure 2 plots the respective $H^i$ coefficients for the identity and equivalence scales of political participation across age groups and time points. As can be seen, with only few exceptions, all coefficients exceed the critical value of 0.3 so that we can speak of an invariant item ordering and a meaningful order of the different modes of political participation across all respondents within the same age group at a given point in time. The few exceptions all refer to the oldest age group (2002 and 2006) where the item response functions for the different items are too close to each other ($H<0.3$) to convey any meaningful message about the order of the items across all respondents.

To summarize, what are the main insights of the ‘identity-equivalence procedure’ for political participation across age groups and time points? Certainly the most important finding is the existence of different political participation scales among young, adult, and old people as well as different time points, indicating varying conceptions of political participation across age groups.
and time. For all seven waves of the ESS, the final equivalent scale of political participation is different for young people and adults. In addition, the overlap in the final equivalent scales is greater between adult and old people than between the old and young people, indicating that political participation among the youngest age group is the most specific of all three age groups. Moreover, the youngest age group exhibits the most changes with regard to the underlying structure of political participation over time. For the seven time points under investigation, young people show a total of four different structures underlying the concept of political participation. For the oldest age group, there are only three different structures over time, while the group of adult people is the most consistent with only two different structures (of which six times the structure is identical). Besides these differences in the structure of political participation, the second important finding refers to differences in the rank order of individual modes of participation across age groups and time. As the results of our analysis suggest, while our final equivalent participation scales exhibit the same rank order of participation modes (IIO) for all respondents within the three age groups, the rank order differs across age groups. Importantly, these differences in the frequency or difficulty of certain modes of participation between young, adult, and old people do not indicate the existence of different types of political participation. In all instances, MSA yielded one single cumulative scale of participation rather than two or more different scales for different types of participation.

As a final summary of the identity-equivalence procedure for political participation, Figure 3 provides a descriptive overview of the final identity and equivalence scales across age groups and time points. To account for the varying number of items in the final equivalence scales across age groups and time points, we have standardized all scales to range from 0-1 (cf. van Deth 1986, 269).

At a cursory glance, two observations seem to be notable. First of all, looking at the three age groups separately, there appears to be an increasing trend in the levels of political participation over time for young, adult, and old people alike. Accordingly, for all three age groups, the average participation levels are higher in 2014 than 2002. Second, comparing the levels of political participation across young, adult, and old people, it can be seen that the oldest age group clearly is the least politically active. However, more interesting from the perspective of youth participation research is the observation that young and adult people in fact show quite similar levels of political participation. We will discuss the implications of our findings in section 5.
At this stage of the analysis, we have shown that the ‘identity-equivalence procedure’ can be meaningfully applied to arrive at equivalent scales of political participation across young and adult people as well as over time. One of the central findings so far is that the structure of political participation is uni-dimensional for all age groups and time points under consideration. Obviously, this finding stands in contrast to most existing studies which distinguish between different ‘types’ of political participation and thus consider the concept of political participation to be two- or multi-dimensional (see section 2). In order to check the robustness of the political participation scales found, we re-assess the structure of political participation by using German data from the first wave of the ESS (2002) which offers a broader set of eleven different political participation items (instead of only seven as in the previous analyses). The main question of interest to be answered here is whether the structure of the equivalent political participation scales is sensitive to the concrete survey items used in the analysis. In the previous section, our analysis focused on a stable set of seven items in order to hold the available modes of political participation for our ‘identity-equivalence procedure’ constant across all seven waves of the ESS. Yet, this possibly restricted focus on the available seven items only brings up the question as to whether the uni-dimensionality of the equivalent scales of political participation does not simply establish an artefact of the survey items used. More specifically, with the exception of ‘boycotting products’ all items used in the preceding analysis could be considered as specimens of ‘conventional participation’. Hence, it does not come as a surprise that the ‘identity-equivalence procedure’ yields only one single scale of political participation across age groups and time points – maybe there are simply no (or not enough) items that could form a second scale for a different type of, e.g., ‘unconventional participation’. To test for this possibility, we repeat the ‘identity-equivalence procedure’ for political participation in exactly the same way as before, this time focusing on a broader set of survey items stemming from the first wave of the ESS in Germany. Next to the seven items previously used, the four additional items are: (1) boycotting products, (2) donating money to a political organization, (3) participating in an illegal protest, and (4) taking part in a referendum. With this extended set of eleven survey items we can be more confident to have a suitable representation of different modes of political participation that, at least from a conceptual point of view, might be summarized to reflect commonly used distinctions between different types of political participation, such as ‘conventional vs unconventional’ or ‘institutionalized vs non-institutionalized’ (see also section 2).

In order to assess the robustness of our equivalent scales of political participation, we start again with the pooled data set (no distinction between age groups) and analyze the structure of the eleven items of political participation. For the pooled data set, the analysis yields (again) a
uni-dimensional scale of political participation, this time consisting of eight out of the eleven items under consideration (Scale H=0.33, LCRC=0.74). Three items are excluded from the scale due to scalability coefficients <0.3. These items are demonstrating, donating money, and taking part in a referendum. Based on the results for the pooled data set, we assess whether the same scale can be replicated for each of the three age groups separately to form our new ‘identity set’ of political participation. As in the preceding analysis, the solution for the pooled data set cannot be replicated for each of the age groups separately. What is more, there is no set of items that consists of more than three items and at the same is valid for all three age groups alike, which yields the same ‘identity set’ (contacting, working for a political party, working for another organization) as in the previous analysis in section 3 (see Table 1 for the properties of the resulting identity scales). The second step of our robustness check deals with the search for age-group specific extensions of the identity scale. For adult people, the identity scale of political participation can be extended by five additional items, so that the final equivalence scale of political participation for this age group consists of the identity set plus the items for wearing a badge, signing a petition, boycotting, boycotting, and donating money (Scale H=0.33; LCRC=0.74). For young people, the search yields two different possible extensions of the identity scale, of which each consists of two items. The first possible extension consists of the two items boycotting and boycotting (Scale H=0.36, LCRC=0.64). The second possible extension is the same as in our preceding analysis which expands the identity scale by the two items wearing a badge and signing a petition (Scale H=0.39, LCRC=0.63). Given the better overall discrimination between the items in the latter scale (as indicated by Scale H) while exhibiting almost identical reliability coefficients, the latter scale should be preferred to the former. Last but not least, for old people as well our robustness check yields the identical solution as in the preceding analysis. The only item that can be added to the identity set of political participation is wearing a badge, resulting in a four-item equivalence scale for the oldest age group (Scale H=0.38, LCRC=0.62).

Overall, our robustness check concerning the underlying structure of the concept political participation confirms the main results of our preceding analyses. Irrespective of whether we deal with the seven items of political participation that are available for all seven waves of the ESS (see section 3) or the extended set of eleven items that is only available in 2002, the ‘identity-equivalence procedure’ yields a uni-dimensional structure of political participation. This observation holds true for young and adult people alike, although the length and composition (in terms of both the number and the concrete modes of participation) of the final equivalent scales of political participation may differ across the three age groups under investigation.
5 Discussion and conclusion

In applying the ‘identity-equivalence procedure’ for political participation across different age groups and time points, this study offers a re-assessment of young people’s political participation in Germany. As Cammaerts et al. have pointed out, “much of the existing social science literature, as well as many journalistic accounts of the supposedly low turnout of young people in elections, assumes that young people today are simply fed up with politics per se and not interested in the political questions facing their communities or their countries. However, much of this literature fails to provide convincing empirical evidence for such claims and critiques” (2014, 650). In this study, we argue that, in order to arrive at meaningful conclusions about young people’s political participation, its specificities in comparison with adult people, as well as its developments over time, ‘construct-equivalent’ rather than identical instruments of political participation across different age groups and over time should be used.

As the results of the ‘identity-equivalence procedure’ for political participation show, the (empirical) structure of the concept of political participation does not reflect commonly employed conceptions and types of political participation, such as the distinction between conventional and unconventional or institutionalized and non-institutionalized participation. For all age groups and time points under investigation, MSA yields only one single uni-dimensional scale of political participation. In light of this finding, the commonly employed strategy of many previous studies of simply applying well-known conceptions and distinctions between different types of political participation without checking their empirical suitability is at least questionable. While the ‘identity-equivalence procedure’ shows a uni-dimensional structure of political participation across age groups and time points, the concrete composition of the final equivalent scales of political participation varies across young and adult people and over time. In general, the equivalence scales contain more items for adult people and are more stable in their composition over time when compared to young and old people. This finding might indeed be a reflection of a more narrow conception of politics held by young people as pointed out in previous research (cf. Quintelier 2007, 177; O’Toole et al. 2003, 52). In any case, it shows that the concrete manifestation of the concept political participation differs across age groups and points time. As a consequence, simply applying identical (rather than equivalent) instruments of political participation for young and adult people as well as different time points appears to be an ill-suited strategy to arrive at meaningful conclusions about the levels and trends of political participation. Last but not least, the different rank orders of the several modes of participation within the final equivalent scales across age groups and time make clear that young people indeed participate differently than adult and old people. Yet, despite different rank orders of the individual modes of participation across age groups and time, we consistently find a uni-dimensional representation of the concept of political participation for all age groups.
Using our final equivalent scales which take into account the specificities of young and adult people's political participation, there is thus no more need to delve into complicated discussions about young people as not participating less but rather differently than adult people (cf. Sloam 2013, 851).

With regard to the levels of political participation, the results for our final equivalent scales show an increase in participation levels over time that is observable for all age groups. In addition, the results show quite similar participation levels and trends for young and adult people. These results are clearly at odds with conventional wisdom stating that young people are less politically active than adults and are becoming more and more politically apathetic and disengaged as time passes by (cf. Henn and Foard 2014, 361). Judging from the results based on our equivalent scales of political participation, the future prospects of (German) democracy are not as shady as suggested in some previous studies of youth political participation.

What are the broader implications resulting from the 'identity-equivalence procedure' for political participation and the empirical findings presented here? A first question concerns the analytical value of commonly employed conceptions and types of political participation, such as the distinction between conventional and unconventional or institutionalized and non-non-institutionalized participation. As indicated earlier, for none of our age groups and time points under consideration the 'identity-equivalence procedure' as implemented by MSA yields a solution that consists of two (or more) scales and that could be indicative of any of the types and distinctions of political participation mentioned above. Does this mean that we can completely eschew these commonly employed conceptions of political participation? Such a conclusion would certainly be premature. First of all, although our robustness check in section 4 has basically confirmed the uni-dimensionality of the concept of political participation across age groups and time, it is clear that (cross-national) surveys such as the ESS are limited in the number and the variety of items to be included in the survey. Constructing time-series data for a stable set of items logically comes at the expense of including new items into a survey when interviewing time is limited. This establishes a possible problem as surveys such as the ESS are limited in their capability to adapt to recent changes and developments concerning political participation. As a consequence, survey items for newer (and possibly 'unconventional') modes of participation, such as 'guerilla gardening', 'reclaim-the-street parties' or 'public suicides' (cf. van Deth 2014) are not available in the ESS. Hence, despite our robustness check with a broader set of participation items in section 4, it might still be the case that the uni-dimensionality of our equivalent scales establishes an artefact of the items used in the analysis. While there is certainly no easy answer to this problem, cross-national surveys such as the ESS sooner or later have to find a way to adapt to and cover changes in the empirical realities of concepts such as political participation. Second, the uni-dimensionality found for our equivalent participation scales might
also be a direct consequence of the underlying logic of the ‘identity-equivalence procedure’. As the procedure requires a common identity set that represents a valid scale across all sub-groups considered, it might have obscured other, more-dimensional structures of political participation. However, since our goal was to construct ‘construct-equivalent’ scales of political participation for young and adult people over time, we did not inspect any scales that were not based on the common identity set found.

A second question concerns the validity of our findings with regard to observed trends in political participation levels over time. The equivalent scales of political participation resulting from the ‘identity-equivalence procedure’ suggest consistent increases in political participation levels for all three age groups between 2002 and 2014. However, for such a conclusion to be valid, we do not only need valid and reliable instruments of political participation but also solid data based on reliable samples. Unfortunately, nonresponse is a big and increasing issue in the German sample of the ESS. In round one, the response rate in the German sample with 54% was at the lower end of the ESS spectrum and has dropped by over 20 percentage points to just above 30% since ESS round 5 (cf. Schnaudt et al. 2014, 502). This poses the question whether the observed increase in political participation levels is due to real changes in the German population or just a consequence of the changing sample composition and reduced sample base. The estimation of political participation will be biased if political participation is correlated with factors and variables related to nonresponse. One candidate for such a variable related to both nonresponse and our variable of interest is political interest. It is strongly correlated with political participation, and there are a couple of reasons to suspect that it is at the same time correlated with nonresponse in Germany. First, ESS refusers in Germany are asked to answer at least some few questions each wave, including the item on political interest from the main questionnaire (cf. Schnaudt et al. 2014, 499). Consistently, non-respondents report much lower political interest than respondents. Second, the reported participation rate in general elections from the ESS survey is usually about 10 percentage points above the actual voter turnout at elections. Third, as we know from comparisons with official statistics, there is an education bias in the German sample: higher educated people are more likely to respond to the survey request but at the same time are more likely to be politically interested. Thus, if nonresponse in Germany is indeed correlated with political interest, the observed increase in political participation may actually be a result of falling response rates rather than a depiction of real change in political behavior. While we cannot address this issue thoroughly in the range of this paper, we want to raise awareness for the fact that sample composition is important when interpreting trends of political participation over time. One of the main results of this study, namely the uniform trend of political participation levels across age groups and time, is yet unlikely to be a mere artefact of this problem.
What are the implications of our findings for participation research in general and future studies in particular? As highlighted in the introduction, researchers investigating differences and similarities in the political behavior of young and adult people over time should make sure that (1) they use reliable samples which include both young and adult people, (2) they track both groups over time, and (3) the measurement of political participation is equivalent across age groups as well as over time. While previous studies have been mainly concerned with establishing equivalent instruments across countries (cf. Przeworski and Teune 1966; van Deth 1986; Garcia Albacete 2011; Linssen et al. 2014), this study has pointed to the fact that countries do not always constitute the primary focus of comparison and equivalent instruments can be meaningfully constructed for sub-groups other than countries as well. Accordingly, future studies on political participation and beyond should be (more) attentive to the fact that the analysis of one and the same phenomenon may require the usage of equivalent rather than identical instruments.

References


Quintelier, E. (2008). 'Who is Politically Active: The Athlete, the Scout Member or the Environmental Activist?'. *Acta Sociologica* 51, 355-70.


Figures and tables

Figure 1. Average levels of different modes of political participation across three age groups and seven time points (percentages)

Notes: ESS data for the years 2002-2014, data weighted using post-stratification weights.
Figure 2. Inspection of invariant item ordering (IIO) for political participation scales across three age groups and seven time points ($H_T$ coefficients)

Notes: For further information see Ligtvoet et al. 2010; 2011.
Figure 3. Average levels of political participation across three age groups and seven time points (percentages)

Notes: ESS data for the years 2002-2014, data weighted using post-stratification weights. The vertical line shows the average level of political participation across all three age groups and time points as measured by the equivalence scale.
Table 1. Properties of the three-item identity scale of political participation across three age groups and seven time points (item frequencies and scalability coefficients; scale coefficients and reliability)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Year</th>
<th>Working for political party</th>
<th>Contacting politicians</th>
<th>Working for organisation</th>
<th>Scale</th>
<th>Scale reliability</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Item diff.</td>
<td>Item H</td>
<td>Item diff.</td>
<td>Item H</td>
<td>Item diff.</td>
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<tr>
<td>Older people (66+)</td>
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<td>.02</td>
<td>.44</td>
<td>.08</td>
<td>.38</td>
<td>.11</td>
</tr>
<tr>
<td>(N= 515)</td>
<td>(15)</td>
<td>(.15)</td>
<td>(.10)</td>
<td>(.28)</td>
<td>(.07)</td>
<td>(.31)</td>
</tr>
<tr>
<td>2004</td>
<td>.02</td>
<td>.54</td>
<td>.07</td>
<td>.50</td>
<td>.14</td>
<td>.36</td>
</tr>
<tr>
<td>(N= 480)</td>
<td>(15)</td>
<td>(.15)</td>
<td>(.11)</td>
<td>(.25)</td>
<td>(.07)</td>
<td>(.35)</td>
</tr>
<tr>
<td>2006</td>
<td>.03</td>
<td>.66</td>
<td>.08</td>
<td>.43</td>
<td>.14</td>
<td>.39</td>
</tr>
<tr>
<td>(N= 567)</td>
<td>(18)</td>
<td>(.08)</td>
<td>(.28)</td>
<td>(.07)</td>
<td>(.35)</td>
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<td>.03</td>
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<td>.13</td>
<td>.44</td>
<td>.18</td>
<td>.43</td>
</tr>
<tr>
<td>(N= 558)</td>
<td>(17)</td>
<td>(.09)</td>
<td>(.34)</td>
<td>(.06)</td>
<td>(.38)</td>
<td>(.06)</td>
</tr>
<tr>
<td>2010</td>
<td>.04</td>
<td>.68</td>
<td>.10</td>
<td>.44</td>
<td>.19</td>
<td>.37</td>
</tr>
<tr>
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<td>(.07)</td>
<td>(.31)</td>
<td>(.06)</td>
<td>(.40)</td>
<td>(.07)</td>
</tr>
<tr>
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<td>.70</td>
<td>.13</td>
<td>.52</td>
<td>.30</td>
<td>.51</td>
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<tr>
<td>(N= 615)</td>
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<td>(.09)</td>
<td>(.34)</td>
<td>(.06)</td>
<td>(.46)</td>
<td>(.07)</td>
</tr>
<tr>
<td>2014</td>
<td>.04</td>
<td>.62</td>
<td>.14</td>
<td>.40</td>
<td>.20</td>
<td>.42</td>
</tr>
<tr>
<td>(N= 666)</td>
<td>(19)</td>
<td>(.07)</td>
<td>(.34)</td>
<td>(.06)</td>
<td>(.40)</td>
<td>(.06)</td>
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</tbody>
</table>

Notes: Mokken Scale Analysis based on three dichotomous items for political participation. 'Item diff.' shows the frequency of each item with s.e. in parentheses. 'Item H' indicates the scalability coefficient for each item separately with s.e. in parentheses. 'Scale H' indicates the scalability coefficient for the final scale with s.e. in parentheses. Reliability is indicated by 'rho/LCRC'. Model assumptions of latent monotonicity and non-intersection have been assessed, no violations found. ESS data for the years 2002-2014.
Table 2. Properties of the final equivalent scales of political participation across age groups and ESS waves (item frequencies and scalability coefficients; scale coefficients and reliability)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Work for political party</th>
<th>Contacting politicians</th>
<th>Work for organisation</th>
<th>Wearing a badge</th>
<th>Signing a petition</th>
<th>Demonstrating organisation</th>
<th>Wearing a badge</th>
<th>Signing a petition</th>
<th>Demonstrating organisation</th>
<th>Scale H</th>
<th>Scale reliability</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Item H</td>
<td>Item diff.</td>
<td>Item H</td>
<td>Item diff.</td>
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<td>Item diff.</td>
<td>Item H</td>
<td>Item diff.</td>
<td>Item H</td>
<td>Item H</td>
</tr>
<tr>
<td>Young people (15-29)</td>
<td>2002 .03 (1) .54 (.08) .09 (3) .30 (.06) .17 (4) .40 (.05) .08 (2) .35 (.06) .30 (5) .43 (.06) -- -- .39 (.05) .60 / .63</td>
<td>2004 .03 (1) .39 (.13) .05 (2) .35 (.09) .18 (3) .32 (.10) -- -- -- -- -- -- .35 (.09) .39 / .34</td>
<td>2006 .01 (1) .32 (.13) .09 (2) .34 (.06) .17 (3) .43 (.05) -- -- .27 (4) .37 (.06) -- -- .38 (.05) .55 / .71</td>
<td>2008 .02 (1) .54 (.10) .09 (3) .33 (.05) .26 (5) .32 (.05) .06 (2) .36 (.06) .28 (6) .36 (.05) .10 (4) .34 (.05) .35 (.04) .60 / .68</td>
<td>2010 .03 (1) .42 (.11) .11 (2) .36 (.07) .25 (3) .34 (.08) -- -- -- -- -- .36 (.07) .42 / .38</td>
<td>2012 .04 (1) .54 (.09) .09 (2) .37 (.08) .32 (3) .44 (.09) -- -- -- -- -- -- .44 (.08) .41 / .36</td>
<td>2014 .03 (1) .45 (.10) .14 (2) .36 (.07) .31 (3) .36 (.08) -- -- -- -- -- -- .38 (.07) .42 / .39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults (30-65)</td>
<td>2002 .04 (1) .39 (.04) .14 (4) .33 (.02) .19 (5) .32 (.02) .06 (2) .38 (.03) .32 (6) .38 (.03) .10 (3) .31 (.03) .34 (.02) .61 / .66</td>
<td>2004 .03 (1) .46 (.03) .13 (4) .37 (.03) .21 (5) .40 (.03) .04 (2) .39 (.03) .35 (6) .46 (.03) .07 (3) .31 (.03) .40 (.02) .63 / .66</td>
<td>2006 .04 (1) .43 (.04) .13 (4) .39 (.03) .21 (5) .39 (.03) .05 (2) .40 (.04) .30 (6) .41 (.03) .07 (3) .35 (.03) .40 (.02) .63 / .69</td>
<td>2008 .04 (1) .58 (.06) .18 (2) .45 (.03) .26 (3) .44 (.03) -- -- -- -- -- .47 (.03) .56 / .54</td>
<td>2010 .04 (1) .42 (.04) .17 (4) .38 (.02) .26 (5) .35 (.02) .05 (2) .39 (.04) .34 (6) .33 (.03) .09 (3) .32 (.03) .36 (.02) .60 / .67</td>
<td>2012 .05 (1) .42 (.04) .18 (4) .37 (.03) .32 (5) .34 (.02) .06 (2) .32 (.04) .39 (6) .36 (.03) .09 (3) .33 (.03) .36 (.02) .59 / .64</td>
<td>2014 .04 (1) .39 (.04) .16 (4) .38 (.03) .27 (5) .34 (.02) .05 (2) .39 (.03) .38 (6) .36 (.03) .09 (3) .31 (.03) .36 (.02) .60 / .64</td>
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<td>Older people (66+)</td>
<td>2002 .02 (2) .47 (.07) .08 (3) .36 (.07) .11 (4) .34 (.08) .02 (1) .36 (.09) -- -- -- -- .38 (.06) .59 / .62</td>
<td>2004 .02 (2) .44 (.08) .07 (4) .46 (.07) .14 (5) .36 (.06) .01 (1) .33 (.13) .19 (6) .47 (.06) .03 (3) .35 (.08) .41 (.06) .63 / .69</td>
<td>2006 .03 (2) .48 (.07) .08 (4) .32 (.06) .14 (5) .37 (.05) .02 (1) .44 (.09) .16 (6) .37 (.06) .03 (3) .42 (.07) .39 (.05) .64 / .70</td>
<td>2008 .03 (3) .47 (.07) .13 (4) .40 (.05) .18 (5) .39 (.05) .03 (1) .43 (.07) .19 (6) .35 (.05) .03 (2) .45 (.08) .40 (.04) .66 / .74</td>
<td>2010 .04 (2) .54 (.07) .10 (3) .43 (.06) .19 (4) .38 (.07) .03 (1) .32 (.10) -- -- -- -- .42 (.06) .55 / .58</td>
<td>2012 .04 (2) .46 (.06) .13 (4) .43 (.06) .30 (5) .51 (.06) .03 (1) .50 (.08) -- -- -- .05 (3) .31 (.07) .44 (.05) .58 / .61</td>
<td>2014 .04 (3) .46 (.06) .14 (4) .32 (.05) .20 (5) .34 (.04) .03 (1) .41 (.07) .21 (6) .32 (.04) .03 (2) .40 (.06) .36 (.04) .61 / .65</td>
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Notes: Mokken Scale Analysis based on six dichotomous items for political participation. For the number of cases included in the analysis, see Table 1. 'Item diff.' shows the frequency of each item with its rank across all items in parentheses (1= most difficult/least popular). 'Item H' indicates the scalability coefficient for each item separately with s.e. in parentheses. 'Scale H' indicates the scalability coefficient for the final scale with s.e. in parentheses. Reliability is indicated by 'rho/LCRC'. Model assumptions of latent monotonicity and non-intersection have been assessed, no violations found. ESS data for the years 2002-2014.