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Walls of Glass: Measuring Deprivation in Social Participation

Nicolai Suppa

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German Socio-Economic Panel (SOEP)
DIW Berlin
Mohrenstrasse 58
10117 Berlin, Germany

Contact: soeppapers@diw.de

Walls of Glass: Measuring Deprivation in Social Participation

Nicolai Suppa*

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Abstract

This paper proposes a measure for deprivation in social participation, an important but so far neglected dimension of human well-being. Operationalisation and empirical implementation of the measure are conceptually guided by the capability approach. Essentially, the paper argues that deprivation in social participation can be convincingly established by drawing on extensive non-participation in customary social activities. In doing so, the present paper synthesizes philosophical considerations, axiomatic research on poverty and deprivation, and previous empirical research on social exclusion and subjective well-being. An application using high-quality German survey data supports the measure's validity. Specifically, the results suggest, as theoretically expected, that the proposed measure is systematically different from related concepts like material deprivation and income poverty. Moreover, regression techniques reveal deprivation in social participation to reduce life satisfaction substantially, quantitatively similar to unemployment. Finally, questions like preference vs. deprivation, cross-country comparisons, and the measure's suitability as a social indicator are discussed.

Keywords: social participation, capability approach, deprivation, life satisfaction, multidimensional poverty, SOEP

JEL-Codes: D63, I32

*TU Dortmund, Department of Economics, 44221 Dortmund, Germany, e-mail: *nicolai.suppa@tu-dortmund.de*, phone: +49 231 755-4374, fax: +49 231 755-5404. This paper benefited from comments and suggestions made by Sabina Alkire, Nathalie Scholl, and participants of the OPHI Lunchtime Seminar in Oxford 2017, and the CED seminar in Barcelona 2018. The author also gratefully acknowledges funding by the German Research Foundation (DFG), grant number RI 441/6-1.

1 Introduction

Social participation has attracted scholarly attention for a long time. Aristotle considered humans to be *zoon politikón* (social or political animals), emphasising the role of social participation in human existence.[1] Social participation still figures prominently in many disciplines, like sociology, economics, or psychology, and, moreover, also matters in political and practical affairs. For instance, the Universal Declaration of Human Rights of the United Nations endorses the right to freely 'participate in the cultural life of the community' (Art. 27. I) and the German Federal Constitutional Court re-emphasised in 2010 that a decent existence also includes social, cultural, and political participation.[2]

The principal relevance of social connections and relatedness for human well-being is undisputed. Indeed, recent efforts to improve the measurement of human well-being unequivocally demand measurement of 'social connections' in one form or another (see, e.g., the reports of Atkinson et al. 2002, Stiglitz et al. 2009, OECD 2011). However, these surveys also document that there is little consensus on how to ideally measure achievements or deprivation in social participation, which is due, at least in part, to conceptual ambiguities. While the aforementioned reports all highlight the need for more research, they also agree that proxy-measures, like formal membership in associations and political processes, voter turn-out, or charitable giving are inappropriate indicators. Instead, social activities and meeting friends are frequently enumerated indicators. Additionally, a large array of further indicators is usually listed, which relate, however, to different concepts (which is freely admitted). These include social capital (trust and reciprocity), social support, social networks, the number of close friends, workplace engagement, or religious engagement. After all, social connections frequently serve as an umbrella term for phenomena and concepts, which still demand clarification and more rigorous research.

In addition to this, more difficulties arise on the empirical side. First, social participation is an abstract activity, which manifests in a plethora of concrete social activities. These concrete social activities, moreover, vary markedly—*inter alia* with time, culture, or age. In fact, social participation is an inherently relational concept, meaning that it refers to a specific society at a given point of time (e.g., Sen, 1983). To appropriately address these issues, conceptually and empirically, is essential for any exercise in measuring deprivation in social participation (DSP). Finally, Stiglitz et al. (2009) also note that aggregation is not trivial, which also applies to a rather narrow concept of social participation in the sense of social activities. Thus, despite its importance, a grounded approach to measure social participation is still lacking, partly due to conceptual intricacies, partly due to empirical

[1] Note that Aristotle did not distinguish between social and political. Moreover, he puts this fairly drastically, reasoning that anyone who does not partake in society 'is either a beast or a god.'

[2] Specifically, the court ruled the practice of paying standard benefits then to be unconstitutional, BVerfG, Judgment of the First Senate of 09 February 2010 - 1 BvL 1/09 - paras. (1–220), http://www.bverfg.de/e/ls20100209_1bvl000109en.html.

diversity, and partly due to methodological challenges. To close this gap is the aim of the present paper.

This paper uses the capability approach to guide the conceptualisation and measurement of deprivation in social participation. According to the capability approach, human well-being is a constitutively multidimensional construct, where social participation is one among other so-called functionings (the doings and beings a person has reason to value, e.g., Sen 1985, 1992). I argue that adopting a capability perspective entails several implications that not only sharpen the contrast to related concepts like social capital but also facilitate operationalisation and measurement. Broadly speaking, the present paper proposes to rely on a wide set of specific social activities and to assert a deprivation if an individual is not performing any of these activities. Technically, I apply a dual cutoff counting approach, drawing on dichotomised variables indicating whether or not a certain set of activities is performed, in combination with an intersection-type of approach to aggregate across activities (Atkinson, 2003, Alkire and Foster, 2011).

In the empirical part of this paper I explore an implementation based on a dual-indicator approach using German data. In particular I investigate the links to related concepts. The results show that income poverty, material deprivation, and deprivation in social participation to a large extent identify different people as deprived. Using standard fixed effects regression techniques to analyse potential determinants provides conclusive findings. Importantly, the results also document that deprivation in social participation is associated with a considerable loss in life satisfaction. Overall the empirical analyses support the validity of the measures and encourage the construction of social indicators along the suggested lines.

The suggested approach has several advantages. First, the measure captures low achievements, i.e. outcomes. Consequently, the measure is sensitive to different mechanisms causing deprivation, like insufficient income or stigmatisation. The empirical findings also suggest responsiveness to policy interventions. Second, the conceptual integration has several implications for operationalisation and measurement (e.g., to adopt an intersection-type of approach) and, moreover, clearly exposes the relational nature of social participation, which may help to implement cross-country comparisons. Third, borrowing axiomatic methods from research on multidimensional poverty measurement facilitates the understanding of the measure's properties and behaviour. Moreover, some of these methods have been deliberately devised to work with ordinal information in order to relax the informational demands on indicators (e.g., Alkire and Foster, 2011, Bossert et al., 2013). Eventually sensible refinements can be expected as well. Fourth, both the design of the measure and the presented empirical evidence support the interpretation that deprivation (or constraints) and not mere preferences drive particular low achievements. This concern figures prominently in research on poverty and deprivation (e.g., Mack and Lansley, 1985, Sen, 1992). Fifth, the burden for respondents is rather low, as the suggested approach does not require a detailed time-use survey, but instead relies on ordinal or quasi-count data. While the present

approach does rely on subjective responses, they are recorded on an objective scale with meaningful labels, and thus can be cross-validated.

This paper complements previous research in several ways. First, having well-defined concepts and measures for social participation and its deprivation allows promising research into links to related concepts like social networks or social capital—links in which economists have recently become more interested (e.g., Bauernschuster et al., 2014, Satyanath et al., 2017). Indeed, a main criticism levelled against research on social capital is that distinct concepts are mixed (e.g., Portes, 1998, Durlauf, 2002). The present paper identifies social participation and its deprivation as a meaningful and measurable concept. Therefore it locates social participation outside of, but in relation to, social capital. The increasing interest of economists in these concepts calls for refined concepts and measures, which this paper seeks to provide.

Second, the axiomatic literature on multidimensional poverty, as its name implies, focuses upon one particular multidimensional phenomenon, namely, poverty. With respect to poverty Dotter and Klasen (2014) recommend *inter alia* including few, but important, dimensions and adopting a union-approach (any single deprivation renders an individual poor). Moreover, most methods proposed actually embody the union-approach (e.g., Alkire et al., 2015, ch. 3.6). The present paper introduces a new concept into this line of research, which also requires multidimensional measurement techniques, but conceptually demands an intersection-type of approach. This case can be characterised *inter alia* by a potentially large number of complementary indicators, where responses are recorded as quasi-count data.

Third, previous research on subjective well-being documents the substantial psychological costs of unemployment (Clark and Oswald, 1994, Winkelmann and Winkelmann, 1998) and also highlights the importance of relative income (Clark and Oswald, 1996, Ferrer-i-Carbonell, 2005). Moreover, social activities are also believed to be important as well. Analyses in support of this, however, frequently rely on cross-sectional data or only study specific social activities (Kahneman and Krueger, 2006, Winkelmann, 2009). This paper demonstrates that deprivation in social participation, similar to unemployment, reduces life satisfaction substantially within the standard linear fixed effects framework. Additionally, reference-group-specific patterns of social participation may help to rationalise the findings regarding relative income.

Finally, the present paper proposes novel, conceptually grounded, and technically sound measures of deprivation, which should be beneficial for several related lines of research. Previous studies in applied research on multidimensional poverty in fact identified so-called missing dimensions, including social connectedness, which is often further partitioned into social isolation and freedom from shame and humiliation (e.g., Alkire, 2007, Zavaleta, 2007). From a well-being perspective this is a highly welcome development, since unlike achievements in health or education, social participation is severely under-researched.

In the absence of grounded deprivation indicators, previous studies only examined single activities or an average level of activity. Finally, an accurate and sound measure for deprivation in social participation is also much-needed for both policy purposes and well-being measurement, more generally.

The remainder of this paper is structured as follows: section 2 provides a brief overview of the previous literature, section 3 introduces the conceptual underpinnings, section 4 outlines the operationalisation, section 5 presents the empirical results, whereas section 6 offers a discussion, and section 7 some concluding remarks.

2 Related Literature

Social participation figures prominently in several poverty-related research lines, often however only implicitly. For instance, in the Breadline Britain studies (Mack and Lansley, 1985, Gordon and Pantazis, 1997) relative deprivation meant 'the absence or inadequacy of those diets, amenities, standards, services and *activities which are common or customary in society*' (Townsend, 1979, p. 915, emphasis added). Moreover, as part of this research, the question whether preference or constraint drives non-consumption of, say, a warm meal with meat every other day, gained prominence.[3] More recently, several studies seek to improve poverty measurement in the European Union, by moving from monetary to material deprivation indicators (e.g., Nolan and Whelan, 2010, Whelan and Maître, 2010). By contrast, measurement exercises in social exclusion usually distinguish four dimensions: exclusion from the labour market, from public or private service provision (e.g., health services), from consumption, and from 'social interactions' in one form or another.[4] Levitas (2006, p. 154) however observes that the social aspects and consequences of the exclusion have so far received rather little attention in poverty research.[5] More fundamentally, this literature is still plagued by severe difficulties in providing clear definitions—in particular with regard to closely related concepts like poverty (e.g., Room, 1999, Levitas, 2006).[6] By and large, these lines of research rely extensively on information from the resource space, i.e. goods, services, or income—whether practically or conceptually. In contrast, the present approach seeks (i) to shift identification of deprivation into the functioning space, and (ii) confines the measurement to one specific functioning.

The capability approach as such has been criticised frequently for providing too few measurable functionings (let alone capabilities) to be useful at all (e.g., Comim, 2008).

[3] In response to this Mack and Lansley (1985) introduced the 'enforced lack' follow-up question.

[4] Empirical attempts at measuring social exclusion are, e.g., Burchardt (2000), Burchardt et al. (2002). Moreover, the UK-survey on Poverty and Social Exclusion now distinguishes four dimensions of social exclusion along these lines as well; for details see Gordon et al. (2000).

[5] If measured, social relations were measured at times by social activities, the extent of social support (practical or emotional), and the number of friends. Membership in civic organisations has also been suggested (e.g., Robinson and Oppenheim, 1998).

[6] On the value-added of the research on social exclusion see, e.g., Atkinson (1998), Room (1999), Sen (2000).

Moreover, within this line of research, so-called collective capabilities have been suggested to allow for capabilities that can only be reached through collective actions (e.g., Evans, 2002, Ibrahim, 2006). However, Robeyns (2017) notes that, strictly speaking, collective capabilities represent a subset of individual capabilities. In fact, Sen (2002, p. 85) refers to 'socially dependent individual capabilities', which is particularly relevant to the present case. Specifically, Sen (1983) argues that because patterns of social activities vary by country, the resources needed to achieve social participation vary, too. Therefore, relative resource deprivation may translate into absolute capability deprivation Sen (1983, p. 160–163). The present paper seizes on the social contingency and relational nature of social participation and paves the way for an empirical analysis of this issue. By operationalizing this important functioning, the present paper addresses the concern of too few functionings and, moreover, allows the empirical scrutiny of issues like collective capabilities.

3 Conceptual Considerations

3.1 Conceptual Integration of Social Participation

The capability approach posits that human well-being is constitutively multidimensional.[7] Dimensions are called functionings, meaning the doings and beings that a person has reason to value; for instance being well-nourished, being well-sheltered, being healthy, or being happy. One such functioning often enumerated is participating in social life. In addition to considering achievement in a single functioning, the capability approach also underlines the importance of the freedom to do so, which leads to the concept of an individual's capability: the set of all functionings the individual can actually choose from. Poverty is then conceived of as capability deprivation, implying not only severe shortfalls in achievements in one or several functionings but also that it was impossible to choose higher achievements, i.e. better achievements were not in the capability set in the first place. The capability approach claims that intrinsic importance can only be assigned to elements in the functioning space, i.e. functionings or capabilities. However important goods, income, and other resources are as a means to achieve functionings, they are of instrumental relevance only. More formally, the resources-functionings link is often described as follows (e.g., Sen, 1985):[8]

$$\boldsymbol{b}_i = \boldsymbol{f}(\boldsymbol{x}_i, \boldsymbol{z}_i, \boldsymbol{z}_s, \boldsymbol{z}_e), \tag{1}$$

where $\boldsymbol{x}_i$ is a vector of goods and services (i.e. resources) that are transformed into functionings by a conversion function $f(\cdot)$, which is governed by conversion factors $\boldsymbol{z}_\bullet$, which can vary with environment, society, and individual. For the present case it is instructive to

[7] On the capability approach see in particular Sen (1980, 1985, 1992, 1999b), for introductions see Alkire (2009), Robeyns (2011).
[8] For a concise presentation I dropped the so-called characteristics function.

focus on one coordinate of the functioning vector $\boldsymbol{b}_i$, say general social participation, denoted as SP_i and, moreover, to explicitly introduce a vector of time-consuming activities $\boldsymbol{a}_i$. An individual's social participation can then be described as

$$SP_i = f(\boldsymbol{x}_i, \boldsymbol{a}_i, \boldsymbol{z}_i, \boldsymbol{z}_s, \boldsymbol{z}_e), \tag{2}$$

where $\boldsymbol{a}_i$ like $\boldsymbol{x}_i$ is a choice variable, subject to a time constraint (e.g., $\sum a_{ij} = 1$), and SP_i is non-decreasing in both arguments. While some activities in $\boldsymbol{a}_i$ are social, like visiting friends, others may be not, like house production. The capability of an individual can then be written as the set of all actually available functioning vectors, given the amount of resources (where $\boldsymbol{X}_i$ is set of commodity vectors the individual is entitled to):

$$\boldsymbol{Q}_i = \{\boldsymbol{b}_i \,|\, \boldsymbol{b}_i = \boldsymbol{f}(\boldsymbol{x}_i, \boldsymbol{a}_i, \boldsymbol{z}_i, \boldsymbol{z}_s, \boldsymbol{z}_e) \quad \forall \boldsymbol{x}_i \in \boldsymbol{X}_i, \quad \forall \boldsymbol{a}_i \in \boldsymbol{A}_{ct}\}. \tag{3}$$

Customary social activities always refer to a specific community c at time t, i.e. $\boldsymbol{a}_i \in \boldsymbol{A}_{ct}$, which clearly exposes the relational nature of social participation. Since an individual can achieve social participation through often quite diverse, concrete social activities, it seems appropriate to view these social activities in $\boldsymbol{a}_i$ as substitutes, i.e. alternative ways to achieve SP_i. For the present purpose social participation, a valued doing is best conceived of as an abstract activity that is performed in an immediate social context in which individuals relate and connect to each other and share an experience.[9] Deprivation in social participation is established if an individual achieves less than a normatively set, critical threshold, $\underline{SP}$:

$$DSP_i = \mathbb{1}[SP_i < \underline{SP}]. \tag{4}$$

Observing an individual achieving $\boldsymbol{b}_i^* \in B \equiv \{\boldsymbol{b}_i \,|\, SP_i \geqslant \underline{SP}\}$ is sufficient to declare her as non-deprived. Capability deprivation with respect to social participation, however, not only requires $SP_i^* < \underline{SP}$, but in fact $\boldsymbol{b}_i^* \in S \equiv \{Q_i \cap B = \varnothing\}$, meaning that no functioning vector with an undeprived level of social participation was feasible. This requirement rules out low achievements due to preference (e.g., for religious beliefs). While empirically challenging, a thorough implementation of this condition is in practice often not necessary, see 6.4.

3.2 Selected Features and Implications

While the capability approach does entail several implications, it does not provide definite instructions for every single exercise. Additional demands originating from research questions or complementary theories can, therefore, not only be met, but are in fact required. As such the capability approach is 'underspecified' (e.g., Robeyns, 2006, 2011) and leaves

[9] Depending on the concrete research questions, finer distinctions may be appropriate. For instance, one may wish to examine social participation from a class perspective or, like the operationalisation in section 4, use two separate indicators to offer more nuanced insights.

room for additional considerations in sections 3.3 and 5.

Defining social participation within a capability framework entails several features and implications central for the present study. First, the dichotomy between concrete forms of social activities and the more abstract human functioning of social participation proves useful in several respects. Evidently, concrete forms of social activities vary substantially across time and among cultures, but also within societies, e.g, with socio-demographic characteristics. As highlighted by equation (2), different behavioural patterns and customs may however result in similar levels of social participation. Thus, the present conceptualisation allows for heterogeneity in the specific forms, or means of social participation, while emphasising the more abstract activity of social participation to be the same. Moreover, this dichotomy clearly exposes the relational nature of social participation, i.e. its contingency upon community and time—a key challenge for cross-country comparisons. After all this dichotomy helps us to better understand—and study—why the role of income for achieving social participation may vary with countries, as suggested in Sen (1983). Since social activities vary with countries and activities vary in price, a relatively low income can translate into (absolute) deprivation in social participation in one country if most social activities there are costly, but does not necessarily do so in others.

A second aspect that the capability approach emphasises is the relevance of conversion factors in transforming resources into functioning achievements (e.g., Sen, 1985). Not only do individuals differ (parametrically) in their ability to convert resources into social participation (someone with mobility problems may need additional equipment to achieve similar levels of social participation), since customary activities may vary with society, the marginal effect of a specific social activity on social participation may vary as well.

Third, functionings and capabilities are of *intrinsic* relevance, i.e. objects of valuation (e.g., Sen, 1992, p. 43). Importantly, the intrinsic relevance of functionings does not preclude instrumental relevance for other achievements (e.g., Sen, 1999b, ch. 2). Being healthy, for instance, is in a very fundamental way also instrumentally relevant for virtually all other functioning achievements. Likewise, social participation may also be helpful for other outcomes, like finding a good job. Additionally, since functionings are of intrinsic relevance for human well-being, they do not require additional justification. Consequently, if an individual is believed to be deprived in social participation, this is already reason enough for public policy to be concerned with this low achievement. In particular, there is no need to adduce an associated low income, even though this may provide valuable insights as to *why* someone is deprived in social participation.[10]

Fourth, functionings are outcome variables, i.e. realised achievements.[11] Therefore, shortfalls may be caused by very diverse mechanisms. Low income is one explanation,

[10] Likewise, e.g., Kahneman and Krueger (2006) point out that social activities rank top among correlates of subjective well-being. While not necessary as a justification for social participation, this evidence documents its instrumental relevance for being happy, another functioning, which Sen (2008) calls 'evidential interest.'

[11] For contrast of achievement, the freedom to achieve, and means to achievement see, e.g., Sen (1992, ch. 2).

particularly important in countries where most social activities are organised through markets. In fact, Mood and Jonsson (2016) present some evidence in support of this channel. However, equation (2) allows for other mechanisms as well, which may operate through a conversion factor or through a further constrained individual activity set.[12] Both ways effectively prevent individuals from achieving higher social participation—irrespective of their resources, e.g., due to racist or sexist legal or social norms. Or alternatively, think of wheelchair users. Only recently have public facilities and other places become more accessible. Like social or legal norms, the accessibility of places can affect fairly directly the achievement of social participation—largely independent of resources. Social norms may, however, also operate in more subtle or unconscious ways, e.g., through stigmatisation, which may induce behavioural responses (e.g., Kunze and Suppa, 2017).[13] An outcome-based measurement allows us to investigate these mechanisms more carefully.

3.3 Aggregation

In the present case, three types of aggregation can be distinguished, which are briefly addressed in sequence. First, there is no categorical answer to how many deprivation indicators should be used. Naturally, this depends on the concrete research question or measurement exercise. While a stronger aggregation into say one deprivation indicator condenses information, it may also prevent a more nuanced picture of deprivation. If the objective is to document more complex phenomena, a dual- or multi-indicator approach is advisable. In fact, a prominent issue in the social exclusion literature is the question of whether social exclusion refers to individuals or to entire neighbourhoods and communities (e.g., Barnes, 2002, Lupton and Power, 2002). Even though these studies address local service provision, this question also points to an important phenomenon of social participation in poor or deprived neighbourhoods (like 'ghettos' or 'banlieus'). While their residents may not participate in customary activities of the wider society under consideration, they may well participate in local social activities and share experiences with friends, enjoy meeting with peers, and provide and receive social support. The empirical part of this paper illustrates a dual-indicator approach: while one indicator captures activities with friends, peers, and family, another indicator captures participation in the most common activities of the society. Alternatively, using two dedicated indicators could also be argued to capture different qualities of social participation.

A second question is how to aggregate across concrete social activities to identify individuals deprived in social participation, which essentially corresponds to the identification step in poverty and deprivation analysis (Sen, 1976). Concrete social activities are viewed

[12] Formally, one could state $a_i \in A_{ict} \subseteq A_{ct}$.

[13] Specifically, Kunze and Suppa (2017) find that the unemployed reduce their public social activities less if the local unemployment rate is high and hence the norm to work rather weak. This evidence indeed suggests stigmatisation to cause behavioural responses.

as substitutes, and an indicator for deprivation in social participation must ensure that social participation is not achieved through any of them. Consequently, a promising strategy is to draw on a wide set of concrete activities and require low participation or complete non-participation in each activity. One way to implement such a procedure is to apply the intersection-approach (Atkinson, 2003) to binary variables indicating whether or not a specific activity is performed, which is in fact a special case of the dual-cutoff counting approach (Alkire and Foster, 2011). More formally, a social activity j is considered to be performed if more than a critical amount of time, $\underline{a}_j$, is spent on it.[14] An overall social activity count can then be expressed as $ac_i = \sum \mathbb{1}(a_{ij} > \underline{a}_j)$, whereas deprivation in social participation is asserted if none of the social activities are carried out, i.e.

$$DSP_i = \mathbb{1}[0 = \sum \mathbb{1}(a_{ij} > \underline{a}_j)]. \tag{5}$$

Note that this approach allows numerous refinements and modifications, whose exploration is however beyond the scope of this paper. In fact, the most suitable method may vary with the exact goal of the exercise (e.g., devising one comprehensive or a small set of complementary social indicators, studying deprivation in social participation alone or in the context of multidimensional poverty, etc.) and the data available.[15]

A third question is how to aggregate across individuals, which again depends on the purpose of the concrete exercise. When needed, the empirical illustration adopts a simple headcount ratio for expositional convenience, not as an implication of the capability approach.[16] Indeed, the share of people who never meet their friends or relatives is already considered as a core indicator of the German reports on poverty and wealth (e.g., Bundesregierung, 2013, p. 476).

3.4 Related Concepts

This section briefly sketches how social participation connects with related concepts. These explanations are meant to be suggestive not definitive, as establishing the precise relationship goes well beyond the scope of this paper. The important aspect here is however that, by their nature, fundamentally distinct concepts are involved—and there is good reason

[14] Activity-specific cutoffs provide a degree of freedom in their specification to account for potentially different qualities or types of activities and to allow the inclusion of ordinal data. Note that in contrast to the literature on multidimensional poverty measurement, non-activity indicators do not immediately signal deprivation, which is why the $\underline{a}_j$ do not represent *deprivation* cutoffs. More generally, because concrete activities are substitutes for achievements in social participation, indicators of non-activity are highly complementary for asserting deprivation in social participation.

[15] Modifications may include different activity cutoffs $\underline{a}_j$ or overall activity count cutoffs (which is implicitly assumed $\underline{ac}_i = 0$ in equation 5). Refined methods could also explicitly exploit the quasi-count data nature of the social activities. Moreover, having detailed time-use survey data would permit entirely different methods, e.g., an aggregate achievement approach (Maasoumi and Lugo, 2008).

[16] The are numerous measures to be considered, including, e.g., the adjusted headcount ratio, which also works with ordinal indicator information (Alkire and Foster, 2011).

to keep them separate, both conceptually and empirically. Only then an accurate operationalisation of the respective concepts can be made that finally allows a careful empirical analysis.

Social networks connect individuals and have been studied from different perspectives (e.g., Ioannides and Loury, 2004, Jackson, 2011, Wrzus et al., 2013). Social participation may alter both the size and quality of social networks, whereas social networks, in turn, may shape the scope for social participation. While social networks as such escape any reasonable normative assessment, they provide the basis for other important concepts. While the different benefits from social networks were found to play an important role for the poor across the globe (Narayan et al., 2000), research in this field is still plagued by severe conceptual vagueness and overlap.

It can, for instance, be argued that *affiliation*, which provides a sense of belonging and identity is an important functioning as well. Indeed, Nussbaum (2001) considers affiliation as one out of ten key functionings. However, she also subsumes various forms of social interactions, the social basis of self-respect, and non-humiliation under this umbrella. Clearly affiliation is closely related to social participation: socializing may result in important shared experiences and ultimately create a sense of belonging and affiliation, but not necessarily so.[17] Conversely, affiliation may continue to live on even if concrete social participation with peers or family came to an end, e.g., due to migration. While social participation was previously described as an activity, affiliation is probably best conceived of as a state or condition, for which an individual's social network is a key factor. Whether and how exactly affiliation is relevant for a specific analysis depends on the specific research question at hand. A promising approach, e.g., for multidimensional poverty measurement, might be to complement indicators of deprivation in social participation with separate deprived-of-affiliation indicators. Being deprived in both aspects may then be understood as *social isolation*. Indeed, Zavaleta et al. (2017) suggest frequencies of social contact (among other items) to measure social isolation.

A similar argument can be made for *social support*, which is often partitioned into emotional and practical support. Its importance is emphasised in the social exclusion literature (Gordon et al., 2000), and the OECD (2011) suggests related indicators to measure social connections. While social support may represent a benefit arising from social relations, it may however also be viewed (i) to reflect affiliation or (ii) to contain aspects that actually refer to other functionings.[18] Specifically, economic and social security matter in and of themselves for human well-being (Wolff and de-Shalit, 2007, Stiglitz et al., 2009), and social support may provide services that could alternatively also be obtained through, e.g., insurance markets.

[17] It is well known that affiliation (or group identity) does not require previous direct social contact and is in fact choice-relevant; see, e.g., Tajfel and Turner (1979) or, more recently, Chen and Li (2009).

[18] Moreover, social support is a 'two-way street' since resource claims, expectation of support, and social norms may also complicate the way out of poverty (Narayan et al., 2000, pp. 55–57), see also Portes (1998, p. 16).

Social capital is another prominent concept that received lots of academic and public attention. Seminal sociological works have emphasised the thoroughgoing instrumental nature of social capital as a resource and its utilisation by individual members of a group (Bourdieu, 1986). Subsequently, social capital was extended to be a feature of communities, in particular by political scientists (Putnam, 1995), but also by economists (e.g., Knack and Keefer, 1997). For the present analysis it seems sufficient to conceive of social capital as stock, which resides in the totality of the individual social networks. Social participation, by contrast, can then also be thought of as an investment activity that helps to build social capital (Glaeser et al., 2002). Note however that the view presented in this paper challenges the approach of measuring human well-being using social capital indicators, e.g., using the 'trust' or 'fairness' questions, as suggested in Stiglitz et al. (2009), OECD (2011). Neither does social capital reflect social particpation in any direct way, nor is the intrinsic relevance of social capital obvious. Instead, most of the benefits arising from social capital seem to be of instrumental importance for other economic outcomes (e.g., lower crime rates or finding a job). More importantly, social capital is not an unambiguously desirable outcome, as already pointed out by Portes (1998) and more recently demonstrated by Satyanath et al. (2017).

4 Operationalisation

4.1 Data and Social Activities

This paper uses data from the German Socio-Economic Panel (SOEP) to illustrate an operationalisation of deprivation in social participation. The SOEP is a high-quality panel data set, which started in 1984 and provides detailed information on different domains of life.[19]

Social participation can manifest itself in many different forms. Therefore, the present paper suggests mounting the operationalisation on a comprehensive set of common activities and the frequency with which they are performed. Table 1 contains the social activities used for the present study along with the exact wording of the questions. Responses to these questions are usually recorded on 4-point scale (weekly, monthly, less than monthly, never).[20] These items as such are not new and, in fact, are well established. They have been collected in the SOEP since the mid-1980s (though with some modifications over time), but are also included in many other surveys (e.g., PSE, HILDA). Moreover, recommendations about how to measure social connections frequently include direct indicators like these (Stiglitz et al., 2009). Figure A.1 in the appendix shows the frequency distributions of the single social activities.

[19] The present paper uses the SOEP v32.1 (DOI:10.5684/soep.v32.1); for more details see Wagner et al. (2007).
[20] Additionally, there are more activities, which are however less frequently collected and moreover only recorded on a 5-point scale.

[Insert table 1 about here.]

One question that is not easy to answer is to what extent the sum of these activities actually covers all the social activities of the respondents (unless a more comprehensive time-use survey is also available). For the present analysis, it is of particular importance whether some common social activity is not covered at all. What can be said, however, is that in 2011, for instance, 68% of the respondents do at least one activity on a weekly basis, whereas around 88% do, at minimum, one activity either on a weekly or on a monthly basis (data not shown). While this evidence, of course, does not preclude further improvements in coverage, it does suggest that many important activities are already covered.[21]

4.2 Deprivation Indicators

The present operationalisation relies on two separate deprivation indicators in order to allow more complex social deprivation patterns to be reflected as well. The first indicator is meant to capture deprivation from more intimate or private forms of social participation, which are often particularly faithful and sincere, and are frequently also characterised by high mutual expectations. This first indicator of deprivation in social participation, denoted $DSP1$, draws on (i) how often a person meets with friends, relatives, or neighbours, and (ii) how often a person helps out friends, relatives, or neighbours.[22] $DSP1$ indicates an individual is deprived if both activities are performed, at most, 'less often.'

In contrast, the second indicator seeks to reveal non-participation in the wider public, often also taking place with rather casual acquaintances and in the customary social activities of the society. While activities in this group may well generate a sense of belonging through shared experience, they often remain interpersonally shallow and non-binding. Ideally, this second deprivation in social participation indicator, $DSP2$, would rely on all remaining activities enumerated in Table 1. However, for two activities, sports and arts, it is not entirely clear to what extent they are actually performed in a social context, because, e.g., solo activities like jogging are also quite common. Therefore, the subsequent analysis employs two variants of the second deprivation indicator, one without sports and arts activities ($DSP2A$) and one including both activities ($DSP2B$). Both $DSP2$ indicators signal a deprivation if all included activities are 'never' performed. Since the social activity questions are not asked on a yearly basis and, moreover, not all questions are always asked simultaneously, the indicators can only be calculated for selected years.[23]

It is important to note that setting a deprivation cutoff like 'never participating in any

[21] Additionally, single social participation patterns are also fairly stable over time, except doing sports, which has slightly increased since 2003 or so (data not shown).

[22] A motivation for the second question is that you usually ask people from whom you can expect something rather than random acquaintances.

[23] More specifically, $DSP1$ and $DSP2A$ can be compiled for 1992, 1994, 1996, 1997, 1999, 2001, 2005, 2007, 2009, 2011, and 2015. Instead, $DSP2B$ can only be calculated for the years starting with 2001.

activity' is a *normative decision*, which is inevitably part of the analysis of poverty and deprivation. The capability approach is distinctly aware of this issue and requires such normative decisions be clearly exposed (e.g., Sen, 1999b, p. 75). Moreover, public debate should contribute to a decision like this as well, and it certainly is not the scientist on his or her own who needs only to apply the 'right' method. That said, a natural starting point to set a deprivation cutoff is, e.g., the most conservative approach, which requires all activities to be performed 'never.' The final cutoff may however not only be modified through public debate (e.g., Sen 1999b, ch. 6 or Sen 1999a), but also depends on the concrete exercise at hand (e.g., a long-run comparison over time, a cross-country comparison, or a multidimensional poverty analysis). As usual with potentially critical decisions in empirical analysis, the robustness of key results should be routinely checked.

The subsequent section compares deprivation in social participation measures with income poverty and material deprivation. The income poverty measure is based on the monthly net household income and is adjusted using the modified OECD-equivalence scale, and deflated using a consumer price index with 2011 being the base year.[24] The poverty line is set using the official threshold, i.e. 60% of the median income. Additionally, I compile a material deprivation index using items that are however only occasionally collected in the SOEP.[25] Moreover, the material deprivation index adopts the concept of 'enforced lack' (Mack and Lansley, 1985), i.e. a deprivation is only assigned if non-consumption of an item is reported to be for 'financial reasons.' Technically, I use a dual-cutoff counting approach (Alkire and Foster, 2011) with equal weights. By no means is this the only way to compile such an index, but it comprises important special cases and is a well-documented and understood method. For $k \in [26, 54]$ (which represent percentages of the maximum possible deprivations) interesting and useful headcount ratios emerge, as DSP and poverty rates then are of similar magnitude, which facilitates the concurrence analysis (see also A.2 of the appendix).

[Insert figure 1 about here.]

Finally, Figure 1 provides a first idea on incidences of the different poverty and deprivation measures. A first observation is that deprivation in more private or intimate activities, according to $DSP1$, is with 4.4% less widespread than deprivation in more public and common activities, whether measured using $DSP2A$ (10.3%) or $DSP2B$ (7.5%).[26] The official

[24] I use the generated variables provided by the SOEP group, which entails some data cleaning and consistency checks.

[25] Specifically, the index draws on the following questions: the household has a colour television; the household has a telephone; the household has internet access; the household has a car; the flat is located in a building that is in good condition; the building is located in a good neighbourhood; I have put some money aside for emergencies; I take a vacation away from home for at least one week every year; I invite friends over for dinner at least once a month; I eat a hot meal with meat, fish, or poultry at least every other day; furniture that is worn out but can still be used is replaced by new furniture. The index is calculated for 2005, 2007, and 2011, where all the previous items are collected simultaneously.

[26] To observe a higher headcount ratio for the deprivation measure that does not include sports and arts

income poverty measure, which uses 60% of median income as the cutoff implies a poverty rate of almost 15%, whereas applying stricter cutoffs, i.e. 50% or 40% sharply reduces the headcount ratio to 9% and to 3.5%. Likewise the material deprivation index finds almost 15% are deprived at a cutoff of 27% of all possible deprivations, which also decreases substantially for stricter cutoffs ($k = 36, 45$) to 9% and 4.5% respectively.

5 Empirical Performance

This section provides evidence on the empirical performance of the suggested indicators for deprivation in social participation, which also helps to assess the validity of the indicators. First, a descriptive analysis identifies risk-factors and life-cycle patterns. Then the empirical connection to related concepts like income poverty and material deprivation is examined by means of a concurrence analysis. Finally, regression analyses explore the conditional correlations of potential determinants and probe the role of the DSP indicators as predictors for overall life satisfaction.

5.1 Descriptive Analyses

Table 2 contains socio-economic characteristics by deprivation status for all DSP-indicator variables. Two observations are salient: First, each socio-economic variable relates in the same way to each DSP indicator. Unemployed persons, for instance, are excessively represented in each deprivation indicator. These differences are, for most variables, more pronounced in terms of $DSP2$-indicators than in terms of $DSP1$ indicators, suggesting the more intimate and private social activities to be less subject to socio-economic factors. Importantly, this finding also holds for income, income poverty, and the (uncensored) material deprivation count. Average equivalence income, for instance, is approximately one third lower for $DSP2$-deprived individuals.

A second important observation is that the age-group dummies suggest a life-cycle pattern, as deprivation in social participation is more common among older persons. Specifically, individuals aged 45 and below are less frequently deprived, whereas individuals aged 46 and above are more frequently deprived. In fact, the difference in the population shares between deprived and non-deprived increases with age (irrespective of the deprivation indicator). Naturally, conclusions based on a descriptive analysis like this must treated with caution, since confounding factors may well drive some of the findings.

[Insert table 2 about here.]

($DSP2A$) is not surprising since $DSP2B$ is more demanding in the sense that it additionally requires that there is never participation in arts and sports.

5.2 Concurrence Analyses of Deprivations

An instructive exercise for analysing deprivation indicators is to examine to what extent the different measures agree on the individuals deemed deprived. Table 3(a) shows estimates of the population shares for the three social deprivation indices and for income poverty with different cutoffs, namely 40, 50, and 60% of the net household equivalent income. Essentially, Table 3 is a numerical representation of Venn diagrams in which one parameter (the poverty cutoff) is varied. Table 3(a) reveals a remarkably large population share to be only income poor and the overlap with social deprivation to be rather small. Specifically, around 12% of the population are income poor (at the 60% cutoff) but not deprived according to the activity index. In contrast, the population share that is income poor and deprived according to the $DSP2$-indicators is only 3–3.5% and according to the $DSP1$-indicator less than 1.2%. Moreover, applying a stricter income-poverty cutoff may give reason to expect a higher concurrence. However, Table 3 reveals that while shares for income-only poor and both poor and deprived decrease with a stricter cutoff, the previous result does not change substantially. In fact, the share of individuals who are both income poor and deprived in social participation relative to all income poor remains a fairly constant 20–23% (for the $DSP1$ indicator this share is around 8–10%).

Table 3(b) performs the same exercise for the material deprivation index. The observed pattern turns out to be quite similar, since most materially deprived persons are not deprived in social participation (at least 66%), i.e. at most a third of materially deprived persons are also deprived in social participation. This finding holds independently of the chosen poverty cutoff for both DSP indicators and is even more pronounced for the $DPS2$ indicators. Conversely, there is also a significant share of the population who are only deprived in social participation: 3–8% depending on measure and cutoff.[27]

[Insert table 3 about here.]

Table 4 turns to the overlap of the DSP indicators and reveals that the more complex situation of not participating in customary activities, but spending time with friends or neighbours seems in fact to be quite common. Specifically, 74.6% ($=\frac{0.0595}{0.0595+0.0203}$) of those persons who are deprived according to the $DSP2B$ indicator are not deprived of more private and intimate relations ($DSB1$). In absolute terms 5.95% of the population are 'excluded' from common social life but not from social relations in general, and about 2% report alarmingly low social participation as they are deprived according to both DSP indicators. On the other hand, around about 60% who are deprived in $DSP1$ are not deprived according to $DSP2B$.

[Insert table 4 about here.]

In sum, the previously presented evidence suggests, first, that in some cases low income

[27] A slightly different way to study the overlap in deprivations relies on redundancy measures (Alkire et al., 2015, ch. 7.3), which gives however qualitatively similar results (available upon request).

and material deprivation seem to translate into DSP, but also that other mechanisms seem to result in DSP—beyond a lack of resources. Accordingly, DSP measures that exclusively rely on resources would only identify a subset of DSP. Moreover, DSP is not only conceptually but also empirically distinct from income poverty and material deprivation: the large extent to which different people are identified as deprived supports this conclusion. Finally, the overlap of DSP indicators shows that both indicators capture related–but distinct and non-redundant–aspects of social participation.

5.3 Regression Analyses

Using conventional regressions techniques, this section explores determinants of social activities and deprivation in social participation, as well as the the link between deprivation in social participation indicators and life satisfaction. Results are best viewed as conditional correlations, rather than causal effects, which are sufficient for assessing the validity of the proposed measures. All models are estimated using linear fixed effects and include control variables for regions and years, as well as a constant. Tables 5 and 6 contain the results for single activities and the deprivation indicators. In general, results are in line with intuition, but some findings are of particular interest.

First, income, modelled as log-income to allow for a decreasing marginal effect, affects most activities as expected. Specifically, income increases the activities labelled 'cinema', 'culture', 'socialise', and 'sports', but not 'attending church', 'volunteer work', or 'helping out friends and neighbours'. These single effects of income also converge into a significantly lower chance of being deprived in social participation. Unlike income, unemployment increases some activities, but decreases others, whereas there is no significant influence on either deprivation indicator.[28]

The presence of children decreases almost all activities, except volunteer activities and attending church, which are expanded. Together, these effects seem to result in deprivation in $DSP1$, but not $DSP2$. Offsetting effects in different activities may drive the latter finding too, which then again may simply reflect changing behavioural patterns due to changed life conditions. Finally, comparing the broader pattern of $DSP1$ and $DSP2$ reveals the life-cycle pattern observed earlier for the $DSP2$ indicators is replaced by a stronger dependence on socio-economic factors. Public participation activities, therefore, seem to be driven more by socio-economic characteristics and events (children, employment, or health), whereas engaging in intimate social relations seem to follow a more genuine life-cycle pattern.

[28] This insignificance may be the result of quite distinct reasons: first, partly offsetting effects of single activities may play a role, which could be interpreted as a shift in behavioural patterns for changing life circumstances. Moreover, the focus on particularly low activity levels in combination with a within-estimator may leave rather little variation to be exploited for the estimation. Finally, results may suffer a endogeneity bias, e.g., lowering social participation may precede the unemployment spell or individuals may adapt to deprivation in social participation during their unemployment spell. However, Kunze and Suppa (2017) find little evidence in support of these possibilities.

[Insert table 5 about here.]

[Insert table 6 about here.]

By now, overall life satisfaction is a widely accepted measure of subjective well-being. Since social participation is a valued functioning, deprivation in social participation is expected to reduce life satisfaction sharply. Note that for higher levels of participation one may expect smaller or even negative effects on life satisfaction. Since deprivation indicators by nature focus on critically low achievements, increases should however unambiguously increase life satisfaction. To this end I estimate a conventional linear life satisfaction model, controlling for fixed effects and the usual socio-economic variables.[29] Table 7 contains the results. First, as expected, both DSP indicators reduce life satisfaction significantly. Moreover, the $DSP1$ indicator seems to have the more detrimental effect (the $DSP2$ coefficients amount to approximately 70% of the $DSP1$ coefficients). Second, the combined effect of DSP indicators results in psychological distress similar to that of unemployment, thereby documenting their economic significance. Finally, the effects associated with the DSP indicators hardly vary after adding important potentially related control variables such as income and employment status. While a more careful analysis of the causal impact is left for future research, this finding already suggests the effect of the DSP indicators to be rather independent from income and unemployment, which is also supported by the concurrence analysis in the case of income poverty.

[Insert table 7 about here.]

6 Discussion

6.1 Validity of Indicators

Evaluating the validity of a measure looks into whether the proposed measure accurately reflects what it is supposed to. A vital precondition is a sufficiently definite construct to be measured. DSP seeks to identify critically low levels in *social participation* and is established if an individual is observed not to participate in any of the enumerated concrete social activities (see section 3). The construct's elements, which are concrete social activities, not only contrast with non-social activities (like house production) and other aspects related to social networks (e.g., a sense of belonging). Additionally, the construct of DSP itself is also clearly distinguished from, and yet related to, income poverty and material deprivation (both of which are located in the resource space). Finally, DSP is a relational concept in the sense that it refers to the society an individual is actually living in.

[29] Ferrer-i-Carbonell and Frijters (2004) identified controlling for fixed effects in life satisfaction regressions to be essential, while different models for the dependant variable usually lead to similar results.

First one may ask whether all aspects of the theoretical construct are captured (sometimes called 'content validity'). In this respect, the validity of the suggested measures crucially hinges upon whether all social activities relevant for the society under study are really captured. Only then can simultaneous non-participation in all activities be confidently interpreted as DSP. If, however, important activities were disregarded, the indicators would systematically overlook a customary way to achieve social participation and therefore erroneously report deprivation. As noted above, about 88% of the individuals participated in at least one of the activities at least monthly, which is already indicative of considerable coverage. However, complementary research may deliberately assess social participation patterns and suggest refinements in terms of the most common activities.

A second question is whether the measures under study empirically relate to adjacent concepts as theoretically expected (sometimes called 'construct validity'). In this regard, the concurrence analysis demonstrates that DSP is neither equal to income poverty nor to material deprivation ('discriminant validity'), which is backed by the conceptual considerations. Nonetheless these concepts are, however, also theoretically related as income and goods or services are often important means for achieving social participation. As theoretically expected, the regression analyses find low income and material deprivation to be positively associated with DSP. Hence the conditional correlations from regression analyses lend further support to this nexus. Moreover, life-cycle patterns of social participation prove consistent with previous research on life-cycle pattern of social networks. Importantly, as theoretically expected, DSP also results in a significant loss of life satisfaction, which can be interpreted as predictive or concurrent validity.

Finally, note that both indicators aim to measure complementary aspects of DSP, namely private and intimate versus wider public participation. This feature is also supported by the results, as the $DSP2$ indicator seems to be systematically more closely tied to socio-economic factors and life-course developments. Additionally, the concurrence analysis also points to distinct and non-redundant aspects of social participation that are captured. In sum, the previous considerations justify confidence in the validity of the proposed measures.

6.2 Unobserved Heterogeneity

Is the suggested implementation of deprivation in social participation susceptible to unobserved heterogeneity, e.g., like being an extrovert or introvert or other personality traits? On the one hand, in the regression analysis unobserved heterogeneity is controlled for—as the task is to identify conditional expectations. On the other hand, it should be noted that low levels of participation in all activities indicate a deprivation—whether caused by unobserved heterogeneity (say a social anxiety disorder) or not. The identification of deprived individuals, however, seems unlikely to suffer from a related response bias through, say, scale interpretation or anchoring. Not only do the scales have objective and meaningful la-

bels, but in particular the boundary values (like 'weekly' or 'never') do as well. Importantly, all individuals are subjected to the same objective deprivation cutoff, which is precisely based on these explicit labels.[30]

6.3 Details of Social Activities

How much detail about the activities is needed for a careful analysis of deprivation in social participation? Certainly, the underlying questions could be complemented by more information. For instance, it might be interesting to know whether an activity is performed together with family or friends, or together with loved ones or bowing acquaintances. Additionally, one might be interested in the group size for an activity, or whether the same or different individuals join the respondent's activities. Naturally, one could also demand more detailed information on both the duration and frequency of an activity. While each of these approaches would allow a deeper analysis, they also increase the burden for respondents. A natural strategy for deprivation measurement is to keep the survey instruments as parsimonious as possible. At the same time, however, one should probe whether certain assumptions are justified or whether additional information fundamentally changes the assessment. Consequently, where additional information is available it can be used either to support a certain measurement approach or suggest grounded refinements. In the present case, for instance, it would be interesting to know whether some activities, in particular participating in sports and arts, take place in a social environment after all. Additional information is particularly useful for complementary studies seeking to understand the different patterns of social participation in more detail.

6.4 Preference or Deprivation?

A notorious intricacy in the measurement of poverty and deprivation is that an observed outcome, even though adverse, could also represent a preference and not a severe deprivation. A similar objection can also be raised for single social activities like, e.g., frequently attending the opera or the theatre.[31] In view of this concern, the suggested approach widens the informational basis of deprivation assessment (as ideally all customary activities are considered), and, in fact, allows different preferences for means to achieve social participation (as concrete social activities are considered to be substitutes). Effectively, the present approach seeks to lift the identification of deprivation from the resource space into the functioning space, where, according to the capability approach, normative assessments can take place.[32]

[30] These properties do not hold, e.g., for subjective health assessments or overall life satisfaction.

[31] To distinguish preference and deprivation in the "consensual approach" to poverty, Mack and Lansley (1985) propose relying on the so-called 'enforced lack' question; for critiques see, e.g., Piachaud (1987), McKay (2004). See, e.g., Burchardt and LeGrand (2002) for a related approach. Moreover, e.g., Platt (2009) found that individuals do indeed have different patterns of social participation.

[32] The degree to which this is successful essentially hinges upon the validity of the measurement; in particular whether all relevant activities are covered. In fact, since the activities are given empirically, it can be seen as

While the principle concern about freely chosen low achievements does not vanish, it seems however less detrimental to deprivation measurement. Choosing specific activities (say going to the opera versus going to the stadium) certainly is subject to preferences. Achieving the functioning itself is less so, as it is an object of valuation—an end in itself and not the specific means to achieve it. Valuation is best viewed as a reflective activity that may go well beyond the current circumstances. This means that not choosing a certain functioning does not imply its non-valuation, since choice, like desire, involves "considerations of 'feasibility' and of 'practical possibility'" (e.g., Sen, 1985, p. 15). Importantly, there is a large body of empirical evidence suggesting that across the world essentially the same functionings are valued (see, e.g., the overview in Alkire, 2008). Moreover, the capability approach does indeed entail a universal claim regarding the valuation of functionings and capabilities (e.g., for the freedom aspect of the capability see Sen, 1999b, pp.244–246).

Indeed, some empirical applications of deprivation indicators work convincingly well without relying on any counterfactual information (i.e. the availability of a non-chosen functioning vector). The application of malnutrition indicators illustrates this point very clearly: its force rests partly on the fact that most people do value being well nourished and therefore seek to achieve it, and partly on the cogency of the deprivation cutoff. Even though, strictly speaking, discriminating between a fasting and starving person (assuming similar nutritional achievements) requires knowledge about the different underlying capability sets (see section 3.1). Likewise, falling short of a 'good' or 'decent' level of social participation is one thing, falling short of any is another. Thus lifting the identification of deprivation in social participation from the resource space into the functioning space, when complemented by a cogent deprivation cutoff, seems to attenuate the 'preference concern' for low social participation. Additionally, the presented life satisfaction analysis precisely indicates that DSP *does* hurt and therefore empirically supports the interpretation of DSP as deprivation.[33] While occasional deliberately chosen low achievements cannot be entirely ruled out, in many instances the acuteness of a deprivation gives point to such a measure.

6.5 Cross-Country Comparisons

Cross-country comparisons are usually intricate and often deceptive. This certainly holds for measures of deprivation in social participation as well. Deprivation in social participation is relational in nature, as it critically depends on a society's common social practices and customs. Therefore, one could, on the one hand, acknowledge that valid comparisons can only be made between societies where the concrete social activities essentially coincide. In this case, a deprivation indicator would provide for both countries with exactly the same

the task of the researcher to process this information and reformulate it in the functioning space in such a way that, in the course of a public debate, a normative assessment can be reached.

[33] Note, however, that deprivation indicators that do not reduce life satisfaction fail to imply non-deprivation, since individuals may ultimately adapt to entrenched deprivation.

(and thus comparable) information. On the other hand, if deprivation in social participation is accurately captured in two countries that differ in terms of the common concrete social activities, one could argue that deprivation in this more abstract activity in the functioning space *is* comparable. A final, more comprehensive and evidence-based assessment of this issue is however left for future research.

6.6 Social Indicators

Measures of DSP may also serve as a social indicators, which require aggregation across individuals in the first place. While I assume a simple headcount ratio for convenience, numerous other measures are available. Social indicators are usually required to comply with several principles (e.g., Atkinson et al., 2002, pp.20–23), some of which are briefly discussed in sequence. First, social indicators should *measure outcomes* not inputs—precisely what the DSP indicators seek to measure by implication of the capability approach. Second, indicators should *identify the essence of the problem* and have a *clear and accepted normative interpretation*. Critically low social participation *is* the outcome of normative concern to both society and its policymakers. Provided the concrete activities are correctly chosen, simultaneous non-participation in all social activities does reflect this problem. Individuals who are classified as deprived, then indeed lead a life that is severely diminished in an important domain. Specifically, it is the severe shortfall in an intrinsically valuable activity from which the normative force of the indicator follows. The normative force of, for instance, average social participation is weaker. Consequently, a reduction in the headcount ratio can be expected to represent a widely accepted improvement for the society.[34]

Third, an indicator should be *robust and statistically validated*. The present paper proposes a novel way to measure DSP, whereas future studies will probe its robustness and apply it in different contexts. Importantly, assumptions made at this stage have to be assessed, possibly along with appropriate refinements (like additional social activities). On the other hand, the proposal already draws on statistically reliable survey instruments that are well studied and widely applied. Additionally, the present paper also provides some evidence that supports the argument that DSP is a valid and reliable measurement.

Fourth, the *burden to the respondents* seems acceptable since a battery of around ten carefully worded questions may suffice. A fifth principle relating to the *responsiveness to policy interventions* requires a detailed assessment that is beyond the scope of this paper. However, the presented evidence, in particular the regression analyses, provides supporting evidence. Specifically, significant life events like the birth of the first child or becoming unemployed seem to signal changes in social participation immediately. One may however criticise that DSP is less directly subject to policy interventions than, say, income. In this

[34] Setting the deprivation cutoff appropriately (in terms of process and result) will increase public approval and, moreover, will help to produce results that seem 'reasonable' most citizens. Finally, it also supports the interpretation as deprivation, see section 6.4.

respect DSP, however, closely resembles educational attainments or health outcomes, two widely accepted and yet fairly mediated targets of policy interventions.[35] After all, this only underlines the need for research to provide effective policy advice. Finally, *cross-country comparisons* are challenging but may be feasible as previously discussed.

7 Concluding Remarks

I conclude with some remarks on why we should measure deprivation in social participation and embark on its in-depth analysis. First, there is already a broad consensus that social participation is an important activity. Indeed, this paper emphasises that social participation is not only of instrumental relevance but also intrinsically important. Consequently, social participation can be conceived of as a constituent, but so far neglected dimension of human well-being. Second, particularly with its focus on *deprivation* in social participation, the measurement reveals a normative force, and its analysis emerges as imperative. Specifically, improvements in respective social indicators, like a simple deprivation rate for instance, can be expected to be widely met with approval. Achievements in health or education are already routinely examined, and *low* achievements in these dimensions are already often a concern for policymaker—whether coupled with other deprivations or not, and irrespective the reason. Additionally, the present paper also provides evidence that deprivation in social participation is highly relevant for subjective well-being, meaning that people do suffer from this deprivation.

Third, the present paper argues that DSP is relatively straightforward to operationalise, drawing on established survey instruments. While identifying relevant customary activities is essentially an empirical question, collecting information on these activities and processing it such that it can be interpreted as a functioning achievement are more technical challenges. Setting the deprivation cutoff is, finally, a normative question, requiring, among other things, a public debate. In sum, the presented evidence suggests that measurement of deprivation in social participation is both feasible and valid. Fourth, the conceptual integration and chosen level of abstraction offers a coherent and compact underlying construct. Together with a feasible measurement this significantly facilitates an empirical analysis with related concepts like material deprivation, monetary poverty, social capital, or social cohesion. For instance, the link with labour market participation or health impairments can be subjected to empirical scrutiny, rather than being stipulated in the course of measurement.

Fifth, indicators like the suggested DSP are intrinsically important outcome variables, where both design and complementary evidence support the interpretation as deprivation rather than preference. Thus DSP indicators not only immediately reflect the essence of the problem and have normative force, they also directly document that barriers which prevent

[35] A difference is that common *inputs* for educational attainments (or health outcomes) have already been identified are considered relevant policy targets, like teachers per student, class size, expenditures, etc.

individuals from social participation *do* exist. This is vital because some problems, which are more difficult to grasp in the first place, like the now-famous glass ceiling for professional achievements of women, only receive attention after being corroborated by a substantial body of empirical evidence. Otherwise, problems like these tend to be ignored or even denied—by policymakers and academics alike. Exposing these walls of glass, which prevent individuals' social participation, may involve rather diverse and possibly subtle mechanisms. Relevant mechanisms may range from deliberate exclusion, by law or by skin colour, to the exclusionary effect of prices, to more subtle channels like shying away to avoid stigmatisation. Therefore, a careful analysis becomes even more important to providing grounded advice for policymakers. Future research may probe and refine the coverage of customary activities, devise and apply measures for different countries, and commence exploring the determinants of deprivation in social participation. Admittedly, cross-country comparability seems to be a major challenge, which therefore should receive special attention.

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Table 1: Social Activities: Questions and Variables

Question	Variable
Going to cultural events (such as concerts, theatre, lectures, etc.)	culture
Going to the movies, pop music concerts, dancing, disco, sports events	cinema
Doing sports yourself	sports
Artistic or musical activities (playing music/singing, dancing, acting, painting, photography)	art
Meeting with friends, relatives, or neighbours	socialise
Helping out friends, relatives, or neighbours	helping
Volunteer work in clubs or social services	volunteer
Involvement in a citizens' group, political party, local government	initiative
Attending church, religious events	church

Notes: Responses are recorded on a 4-point scale and labelled as 'at least once a week', 'at least once a month', 'less often', and 'never'.

Table 2: Socio-Economic Variables by Deprivation Status

	$DSP1$		$DSP2A$		$DSP2B$	
	=0	=1	=0	=1	=0	=1
<25	0.15	0.07	0.15	0.05	0.14	0.05
26–35	0.22	0.14	0.22	0.18	0.19	0.17
36–45	0.25	0.22	0.25	0.24	0.26	0.23
46–55	0.21	0.28	0.21	0.27	0.23	0.28
56–65	0.17	0.29	0.16	0.27	0.17	0.28
65+	0.00	0.00	0.00	0.00	0.00	0.00
unemployed	0.07	0.11	0.06	0.16	0.06	0.17
pov40	0.03	0.07	0.02	0.07	0.03	0.09
pov50	0.07	0.15	0.06	0.16	0.06	0.21
pov60	0.12	0.24	0.11	0.29	0.12	0.36
pov70	0.21	0.34	0.19	0.41	0.19	0.49
income	1461.40	1253.46	1497.54	1062.51	1654.89	1084.66
md. count	18.42	28.98	17.84	28.35	18.00	29.82
md. count (el)	8.03	15.69	7.43	17.07	7.59	18.51
Observations	163752	7160	152594	17351	103937	7845

Notes: Data from SOEP v32.1 (all available waves, see fn. 23), calculation use sampling weights.

Table 3: Concurrence of Deprivation in Social Participation with Other Measures

(a) with income poverty measures

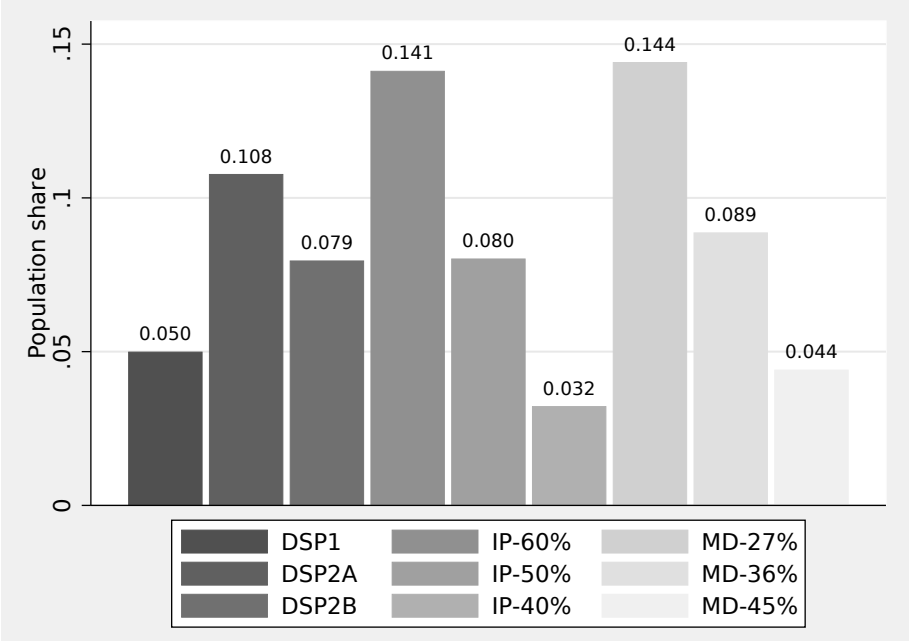
	DSP1			DSP2A			DSP2B		
poverty cutoff	40%	50%	60%	40%	50%	60%	40%	50%	60%
neither dep.	0.926*	0.876*	0.821*	0.874*	0.832*	0.787*	0.898*	0.854*	0.806*
only I-dep.	0.033*	0.084*	0.138*	0.028*	0.071*	0.115*	0.030*	0.074*	0.122*
only SP-dep.	0.037*	0.032*	0.028*	0.089*	0.076*	0.062*	0.065*	0.054*	0.043*
both dep.	0.004*	0.008*	0.012*	0.009*	0.022*	0.035*	0.008*	0.019*	0.030*
both dep./I-dep.	0.097	0.089	0.081	0.232	0.234	0.235	0.203	0.201	0.196
both dep./SP-dep.	0.089	0.203	0.301	0.088	0.220	0.362	0.104	0.257	0.410

(b) with material deprivation indices

	DSP1			DSP2A			DSP2B		
k-cutoff	27%	36%	45%	27%	36%	45%	27%	36%	45%
neither dep.	0.822*	0.877*	0.920*	0.785*	0.834*	0.872*	0.804*	0.854*	0.895*
only MD-dep.	0.138*	0.083*	0.039*	0.117*	0.068*	0.030*	0.124*	0.073*	0.033*
only SP-dep.	0.027*	0.030*	0.034*	0.063*	0.073*	0.083*	0.044*	0.053*	0.059*
both dep.	0.014*	0.010*	0.006*	0.034*	0.024*	0.015*	0.028*	0.020*	0.013*
both dep./MD-dep.	0.089	0.107	0.133	0.227	0.263	0.338	0.184	0.213	0.282
both dep./SP-dep.	0.335	0.246	0.149	0.352	0.250	0.156	0.386	0.273	0.177

Notes: Data from SOEP v32.1 (wave 2011); calculations use sampling weights; individuals can be only income-deprived (I-dep.), only social participation-deprived (SP-dep.), or materially deprived (MD-dep.); indicated levels of significance are $^{+}$ $p < 0.05$, * $p < 0.01$.

Figure 1: Headcount Ratios for Different Poverty and Deprivation Measures



Notes: Data from SOEP v32.1 (wave 2011); calculations use sampling weights. For cutoffs for deprivation in social participation (DSP) see text; income poverty (IP) for poverty lines at 60%, 50%, and 40% of the median income; material deprivation (MD) indices for k-cutoffs of 27%, 36%, and 45% of maximal possible deprivation.

Table 4: Concurrence Among Deprivations in Social Participation

	neither deprived	only $DSP1$-deprived	only $DSP2B$-deprived	both deprived
<25	0.11	0.04	0.04	0.03
26–35	0.18	0.10	0.21	0.12
36–45	0.26	0.22	0.22	0.16
46–55	0.20	0.22	0.20	0.23
56–65	0.13	0.19	0.17	0.22
65+	0.12	0.24	0.15	0.26
years of education	12.64	11.97	10.71	10.60
full-time	0.42	0.34	0.30	0.20
part-time	0.16	0.11	0.09	0.06
training	0.02	0.01	0.01	0.01
precarious	0.06	0.04	0.06	0.05
out of labour force	0.30	0.41	0.40	0.53
unemployed	0.04	0.09	0.14	0.15
pov60	0.12	0.19	0.38	0.43
income	1686.08	1580.79	1091.40	1077.09
md. count	13.97	21.14	21.40	31.25
md. count (el)	5.09	8.61	11.62	17.62
Obs.	23604	761	1658	519
pop. share	0.891	0.0296	0.0595	0.0203

Notes: Data from SOEP v32.1 (wave 2011), calculations use sampling weights; income concept is net equivalent income.

Table 5: Regression Results—Part A

	(1) Cinema	(2) Culture	(3) Volunteer	(4) Church	(5) Socialise	(6) Helping
sep. or div.	0.171*	0.0719*	-0.0185	-0.0403*	0.0326^{+}	0.0212
	(12.20)	(6.35)	(-1.23)	(-3.38)	(2.19)	(1.51)
unmarried	0.364*	0.156*	0.0499*	-0.0238^{+}	0.0660*	0.0184
	(26.76)	(14.31)	(3.33)	(-2.14)	(5.18)	(1.36)
widowed	0.140*	0.0846*	0.0157	0.0687*	0.169*	0.131*
	(4.91)	(3.47)	(0.46)	(2.61)	(5.23)	(3.77)
1 child	-0.111*	-0.0705*	0.000802	0.0338*	-0.0730*	-0.0479*
	(-15.52)	(-12.09)	(0.10)	(5.66)	(-10.39)	(-6.38)
2 child	-0.131*	-0.0906*	0.0463*	0.0955*	-0.101*	-0.0681*
	(-14.27)	(-12.24)	(4.10)	(11.44)	(-10.80)	(-6.98)
3+ child	-0.142*	-0.106*	0.0872*	0.122*	-0.132*	-0.101*
	(-9.68)	(-9.10)	(4.78)	(8.82)	(-8.81)	(-6.49)
26–35	-0.227*	0.00709	0.00316	-0.0335*	-0.00261	0.0503*
	(-20.47)	(0.78)	(0.27)	(-3.80)	(-0.26)	(4.30)
36–45	-0.183*	0.0352*	0.123*	0.0174	-0.0259	0.0559*
	(-12.31)	(2.85)	(7.41)	(1.40)	(-1.75)	(3.49)
46–55	-0.157*	0.0324^{+}	0.129*	0.0150	-0.0257	0.0598*
	(-8.68)	(2.14)	(6.34)	(0.98)	(-1.37)	(2.96)
56–65	-0.102*	0.0294	0.0943*	0.00448	0.0368	0.0944*
	(-4.69)	(1.61)	(3.83)	(0.24)	(1.59)	(3.81)
ln(income)	0.0725*	0.0534*	-0.000645	0.00222	0.0437*	-0.0103
	(9.89)	(8.59)	(-0.07)	(0.35)	(5.63)	(-1.24)
part-time	0.0301*	0.0148^{+}	0.0682*	0.0517*	0.0296*	0.0577*
	(3.52)	(2.02)	(6.38)	(6.66)	(3.34)	(5.98)
training	0.0824*	-0.0230	0.00749	0.0368*	0.0507*	-0.0496*
	(5.66)	(-1.81)	(0.50)	(3.43)	(3.92)	(-3.20)
precarious	0.0281^{+}	0.0151	0.136*	0.0373*	0.0790*	0.118*
	(2.51)	(1.53)	(8.91)	(3.58)	(6.64)	(9.02)
out of lab. force	-0.0311*	-0.0163^{+}	0.0413*	0.0268*	0.0690*	0.0451*
	(-4.07)	(-2.54)	(4.55)	(4.10)	(8.66)	(5.14)
unemployed	-0.0309*	-0.0214*	0.0298*	0.0168^{+}	0.0726*	0.0876*
	(-3.28)	(-2.73)	(3.05)	(2.13)	(6.73)	(7.88)
Obs.	161906	162002	161711	161915	162022	161894
Ind.	52392	52395	52355	52382	52418	52397

Notes: Data from SOEP v32.1 (all available waves, see fn. 23), all underlying models fitted using linear fixed effects estimator, all models additionally include year dummies and a constant, indicated levels of significance are $^{+}$ $p < 0.05$, * $p < 0.01$.

Table 6: Regression Results—Part B

	(1) Initiative	(2) Art	(3) Sports	(4) DSP2A	(5) DSP2B	(6) DSP1
sep. or div.	-0.0100	0.0458^{+}	0.0313	-0.0103	-0.00238	-0.00329
	(-1.38)	(2.18)	(1.48)	(-1.75)	(-0.36)	(-0.85)
unmarried	0.0169^{+}	0.0343	0.229*	-0.0253*	-0.0106^{+}	0.000827
	(2.42)	(1.59)	(11.46)	(-5.87)	(-2.26)	(0.29)
widowed	0.0254	0.0830	0.0847	-0.0331^{+}	-0.0153	-0.0189^{+}
	(1.41)	(1.88)	(1.92)	(-2.16)	(-0.89)	(-2.00)
1 child	-0.00539	-0.0347*	-0.0904*	0.0110*	0.00403	0.00640*
	(-1.37)	(-3.05)	(-8.37)	(4.05)	(1.35)	(3.40)
2 child	0.00338	-0.0371^{+}	-0.0964*	0.00864^{+}	0.00329	0.00557^{+}
	(0.64)	(-2.46)	(-6.71)	(2.47)	(0.81)	(2.31)
3+ child	-0.00120	-0.0482^{+}	-0.0712*	0.00555	-0.00334	0.00288
	(-0.15)	(-2.22)	(-3.34)	(0.87)	(-0.48)	(0.72)
26–35	0.00723	-0.0399^{+}	-0.0184	0.00273	0.00384	-0.00835*
	(1.39)	(-2.20)	(-1.18)	(0.77)	(0.92)	(-3.47)
36–45	0.0356*	-0.00370	0.0456^{+}	-0.0136^{+}	-0.00839	-0.0163*
	(4.76)	(-0.15)	(2.08)	(-2.41)	(-1.30)	(-4.21)
46–55	0.0386*	0.0179	0.0306	-0.00711	-0.00621	-0.0181*
	(3.94)	(0.59)	(1.14)	(-0.98)	(-0.77)	(-3.51)
56–65	0.0231	0.0443	0.0366	-0.00987	-0.00531	-0.0220*
	(1.92)	(1.22)	(1.14)	(-1.08)	(-0.52)	(-3.29)
ln(income)	-0.00379	0.0181	0.0745*	-0.0237*	-0.0206*	-0.00726*
	(-0.83)	(1.52)	(6.78)	(-8.17)	(-6.54)	(-3.20)
part-time	0.00987^{+}	0.0223	0.0718*	-0.00837^{+}	-0.00230	-0.00274
	(2.00)	(1.61)	(5.27)	(-2.46)	(-0.64)	(-1.15)
training	-0.00750	0.00111	0.0207	-0.00230	-0.00294	0.0000491
	(-1.27)	(0.05)	(1.00)	(-0.61)	(-0.65)	(0.02)
precarious	0.0119	0.0512*	0.0993*	0.00655	0.00539	-0.00278
	(1.69)	(2.88)	(5.37)	(1.44)	(1.08)	(-0.89)
out of lab. force	0.00440	0.0765*	0.0538*	0.0175*	0.0125*	0.00504^{+}
	(1.03)	(5.94)	(4.54)	(5.47)	(3.42)	(2.21)
unemployed	0.000919	0.0402*	0.0497*	0.00875	-0.00552	-0.00496
	(0.20)	(2.59)	(3.67)	(1.82)	(-0.89)	(-1.59)
Obs.	161491	106047	161568	160767	105097	161611
Ind.	52335	45747	52368	52249	45586	52374

Notes: Data from SOEP v32.1 (all available waves, see fn. 23), all underlying models fitted using linear fixed effects estimator, all models additionally include year dummies and a constant, indicated levels of significance are $^{+}$ $p < 0.05$, * $p < 0.01$.

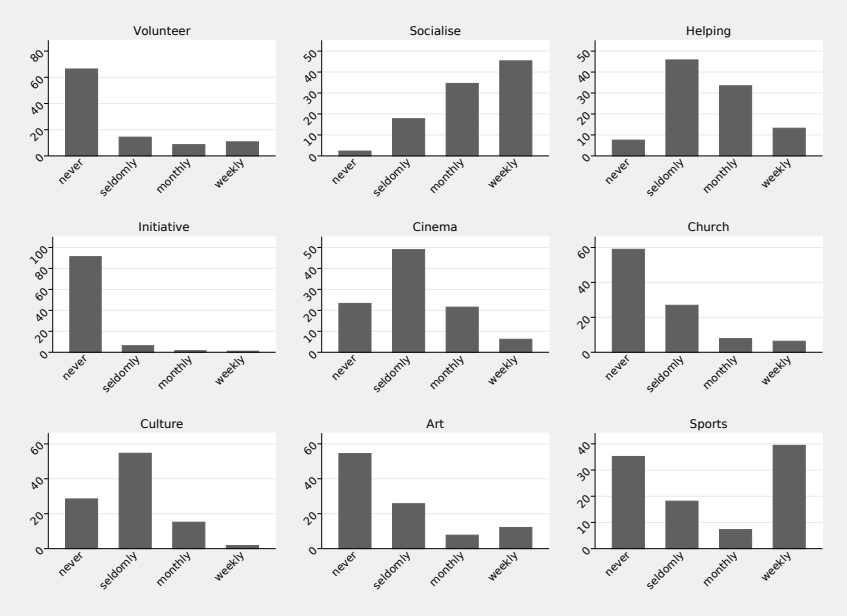
Table 7: Life Satisfaction Regressions

	(1)	(2)	(3)
DSP1	-0.347*	-0.333*	-0.334*
	(-10.20)	(-9.87)	(-9.99)
DSP2B	-0.245*	-0.233*	-0.225*
	(-7.77)	(-7.47)	(-7.27)
ln(income)			0.326*
			(14.74)
part-time			-0.00378
			(-0.16)
training			0.0940^{+}
			(2.16)
precarious			-0.121*
			(-3.82)
out of labour force			-0.0165
			(-0.72)
unemployed			-0.566*
			(-15.73)
Obs.	118418	118418	118418
Ind.	48801	48801	48801

Notes: Data from SOEP v32.1 (waves 2001, 2005, 2007, 2009, 2011, 2015). The dependent variable is life satisfaction, recorded on a 10-point scale. All models are estimated using linear fixed effects and models (2) and (3) include control variables for age groups, marital status, number of children, regions, years, and a constant. The reference group for employment status is full-time employment; standard errors are clustered on the individual level; t-values are in parentheses, indicated levels of significance are $^{+}$ for $p < 0.05$, * for $p < 0.01$.

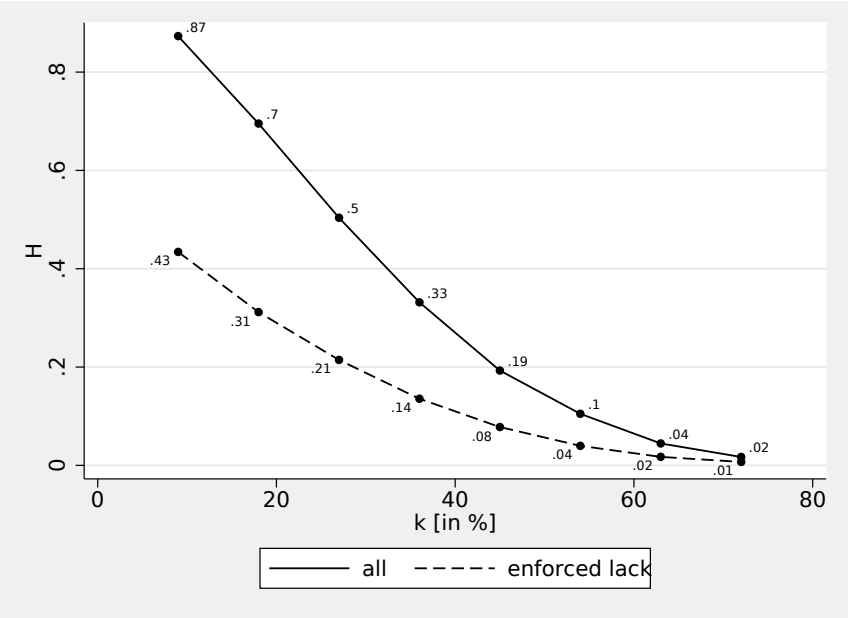
Appendix

Figure A.1: Frequency Distributions of Social Activities



Notes: Data from SOEP v32.1 (wave 2011); calculations use sampling weights.

Figure A.2: Incidences of Material Deprivation Indices



Notes: Data from SOEP v32.1 (wave 2007); calculations use sampling weights; material deprivation indices are constructed using the Alkire-Foster method with equal weighting.