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**Operationalising the Capability Approach:
A German Correlation Sensitive Poverty Index**

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Operationalising the Capability Approach: A German Correlation Sensitive Poverty Index

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Abstract

The official measure to analyse poverty in Germany is the at-risk-of-poverty rate, defined as 60 per cent of the median net equivalence income. The severe methodological weaknesses of this rate seem to be the main source for the uncertainty that the issue of poverty in Germany generates in the minds of both the government and the public. Especially since it smacks of envy as a person needs more when others have more. The unacceptance of the rate is additionally fuelled by the high figures it produces. This paper uses the rich data source of the German Socio-Economic Panel in order to propose a new multidimensional poverty index for Germany that is based on the capability approach. It also introduces a multidimensional happiness index, a concept that is enjoying increasing popularity. All three indices are compared across dimensions, regions and over time, and the results seem to indicate one thing above all: the high added value that is created though the new German Correlation Sensitive Poverty Index (GCSPI).

JEL Classification: I32

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Introduction

It is not so long ago that the existence of poverty in the social welfare state Germany was officially denied. This became particularly evident during the aftermath of the 1995 World Summit for Social Development in Copenhagen. The Copenhagen Declaration explicitly acknowledges that ‘profound social problems, especially poverty, unemployment and social exclusion [...] affect every country’ (Copenhagen Declaration on Social Development, Introduction, point 2) and calls upon ratifiers to implement national poverty reports. However, the German government revealed considerable reluctance to meet the commitment: ‘But while poverty enjoys a top ranking in the 90s scientific debate, the existence of poverty in Germany was denied by a Federal Government pointing out to a well-functioning social security system. That is in line with the fact that the Federal Government believed there was no need for a national report on poverty.’ (Kemming and Borbach, 2003, p. 3).

When the first ‘Poverty and Wealth Report’ was finally published on 25 April 2001, the German government ventured into uncharted territory. When it did, it relied on the guidance of an instrument that has been subject to severe criticism for years, i.e. the at-the-risk-of-poverty rate (AROPR)¹. The index is based on the income approach that defines well-being in terms of opulence. As such it suffers from two excessively restrictive assumptions, i) the existence of perfect and complete markets that is unable to properly account for public goods provision for instance in the area of health and education; and ii) equality of individual conversion factors that disregards the diversity in social and physical environments as well as

¹ The rate is defined as the percentage of the population with a net equivalence income below 60% of the median. The concept of the net equivalence income accounts for the fact that bigger households have saving opportunities through the joint use of household items. Therefore, the new OECD scale attributes a weight of one to the first adult, a weight of 0.5 for every additional person aged 15 or over and a weight of 0.3 for persons below the age of 15. Thus, the net equivalence income is the household’s net income divided by the weighted sum of household members.

the whole range of personal heterogeneities that influence the ability of individuals to convert economic resources into whatever they may need (Sen, 2009, p. 255)

On the other hand, the ability especially of the relative income approach to pass off as a measure of poverty is rather limited. It is a measure of inequality more than anything else and if applied in the context of affluent countries almost bound to be heavily disputed for the nasty taste of envy that it leaves in the mouth when individuals need more just because others around them have more. When the poverty figures of the draft of the fourth 'Poverty and Wealth Report' were presented in September 2012, public debate was once again reignited as the report claims one in six Germans to be at-the-risk-of-poverty (draft version of the fourth 'Poverty and Wealth Report', 2012).

A change in German poverty measurement seems to be overdue. Interestingly enough, the foundation for such a change has already been laid: Despite the archaic instrument that is utilised to measure poverty, the definition of poverty itself is state-of-the-art. Following the recommendations of a German research team (Volkert et al., 2004), the German government decided to use Sen's capability approach (Sen, 1979; 1985; 1992; 1999; 2009) as the conceptual framework for the national 'Poverty and Wealth' Reports. That decision was endorsed after the 2005 elections by the new government (Arndt and Volkert, 2007).

The Capability Approach has a very intriguing way to define poverty, especially in the context of affluent countries. By making capabilities and functionings, i.e. what a person is actually able to do and be, the subject of analyses rather than economic resources, it can essentially dispense with the two assumptions of perfect and complete markets and equal individual conversion factors. Then, by utilising a concept of equality of opportunity, poverty is defined as a restricted set of essential capabilities that are needed to pursue whatever one has reason to value. It is the respect for the freedom and responsibility of the individual that makes this approach so attractive, especially in the context of affluent countries. Income disparities are bad if and only if they are caused by inequality of opportunity, i.e. in case

access to such essential institutions as the education system, the labour market and health care are restricted on grounds of gender, origin or anything else of a discriminatory nature, irrespective of whether the individual concerned lives in a poor or affluent country². On the other hand, inequality that is caused by free individual choice might even be desirable: Rewarding investments attracts additional investments that expand the overall capability set of a society which is, obviously, to everyone's benefit (see Marrero and Rodríguez, 2010).³ Seen in that light, such indices as the AROPR smack of paternalism and are inevitably prone to criticism.

Based on these considerations, this paper takes a first step towards the long overdue operationalisation of the official definition of poverty in Germany by proposing a multidimensional poverty index that is based on the capability approach. In order to assess the applicability and validity of the new German Correlation Sensitive Poverty Index (GCSPI), a thorough poverty analysis is conducted for the period 2002 to 2010, including dimensional and regional decompositions as well as a comparison with two indices that represent the other main theories of welfare economics. The first one is the AROPR that has been introduced before and represents the income approach. The other one is the Subjective Correlation Sensitive Poverty Index (SCSPI), a representative of traditional welfarism theory that defines well-being in terms of happiness. The latter has recently experienced a rather sudden resurrection in the empirical analysis of poverty despite the fact that the related theory has

² The fact that the children of uneducated families are far less likely to make it into grammar schools than the children of the educated middle class shows that these barriers also exist in Germany (Education in Germany, 2012)

³ These considerations receive strong evidentiary support by a recent study of Marrero and Rodríguez (2010) who demonstrate that no robust relationship can be established between overall inequality and growth. However, there exists a robust and significant positive relationship between inequality of choice and economic growth and a robust significant negative relationship between inequality of opportunity and economic growth.

been abandoned in the nineteen-thirties due to the alleged impossibility to compare individual happiness (Robbins, 1938, p. 640; Sen, 2009, p.277-278).

The empirical analysis provides evidence how the different indices might arrive at entirely different assessments of poverty and poverty trends in Germany. For instance, it is demonstrated how the GCSPI increases due to a worsening of the conditions of those who are deprived while the AROPR actually decreases, capturing the fact that the circumstances of the deprived had deteriorated less than those of the better-off. The empirical analysis also reveals the rather strong volatility of the SCSPI and even provides some evidence that the criticism that was raised against the comparability of individual happiness and eventually led to the abandonment of traditional welfarism might in fact be justified: Evidence suggests that citizens of the old Western Bundeslaender, especially those that are populous and heavily urbanised, tend to have higher levels of dissatisfaction than citizens from more rural Eastern Bundeslaender, a fact that causes considerable distortions in the assessment of poverty. All results point to one thing in particular: the high value that is added by the operationalisation of the capability approach.

The paper proceeds as follows. The second section provides a brief introduction in the theoretical background of the paper, followed by a brief overview in section three of the axiomatic foundation of the multidimensional class of indices that is utilised for the multidimensional indices GCSPI and SCSPI. The fourth section is dedicated to the thorough development of the GCSPI, in particular the choice of dimensions, indicators, thresholds and weights. The empirical application is presented in section five, section six concludes.

Theoretical Background

Let \mathbb{R}^k denote the Euclidean k -space, and $\mathbb{R}_+^k \subset \mathbb{R}^k$ the non-negative k -space. Further, let \mathbb{N} denote the set of positive integers. $\mathbf{N} = \{1, \dots, n\} \subset \mathbb{N}$ represents the set of n individuals of a

typical society and $\mathbf{D} = \{2, \dots, d\} \subset \mathbb{N}$ the set of d poverty dimensions captured by a set of k poverty attributes $\mathbf{K} = \{2, \dots, k\} \subset \mathbb{N}$.

Let $\mathbf{a} \in \mathbb{R}_+^{\mathbf{K}}$ denote the weight vector for the different attributes with $\sum_{j=1}^k a_j = 1$. In the following, I will refer to the quantity of an attribute with which an individual is endowed as an achievement. The achievement vector of individual i is represented by $\mathbf{x}_i = (x_{i1}, \dots, x_{ik})$ and the respective achievement matrix of a society with n individuals by $\mathbf{X} \in \mathbb{R}_+^{\mathbf{N} \times \mathbf{K}}$ where the ij th entry represents the achievement x_{ij} of individual i in attribute j . Let \mathcal{X}_n be the set of possible achievement matrices of population size n and $\mathcal{X} = \bigcup_{n \in \mathbb{N}} \mathcal{X}_n$ the set of all possible achievement matrices. Let z_j denote the poverty threshold of attribute j so that individual i is deprived in j whenever the respective achievement falls short of the threshold level, i.e. whenever $x_{ij} < z_j$. Further, let $\mathbf{z} \in \mathbb{R}_+^{\mathbf{K}}$ represent the vector of poverty thresholds chosen for the different attributes, with the j th element being z_j , and \mathbf{Z} being the set of all possible vectors of poverty thresholds.

In the context of this paper, a poverty index is a function $P: \mathcal{X} \times \mathbf{Z} \rightarrow \mathbb{R}$. For any poverty threshold vector $\mathbf{z} \in \mathbf{Z}$, society A has a higher poverty level than society B if and only if $P(\mathbf{X}^A; \mathbf{z}) \geq P(\mathbf{X}^B; \mathbf{z})$ for any $\mathbf{X}^A, \mathbf{X}^B \in \mathcal{X}$.

Let $\mathbf{c}_i = (c_{i1}, \dots, c_{ik})$ represent the *deprivation vector* of individual i such that $c_{ij} = 1$ if $x_{ij} < z_j$ and $c_{ij} = 0$ if $x_{ij} \geq z_j$. Further, let $S_j(\mathbf{X})$ – or simply S_j – denote the set of individuals who are poor with respect to attribute j , and q the overall number of poor individuals in a society.

For reasons of simplicity, let $\delta_i = \sum_{j \in \{1, \dots, k\}; c_{ij}=1} a_j$ denote the sum of weighted deprivations suffered by individual i .

However, in a multidimensional framework it does not suffice to determine those who are deprived. In addition, it has to be defined how deprived a person has to be in order to be considered poor. This is the task of the *identification function* $\rho : \mathbb{R}_+^K \times \mathbb{R}_{++}^K \rightarrow \{0,1\}$ so that individual i is poor if $\rho(\mathbf{c}_i; \mathbf{z}) = 1$ and not poor if $\rho(\mathbf{c}_i; \mathbf{z}) = 0$.

So far, there is only one identification function that considers the relationship between inequality and correlation-sensitivity (Rippin, 2012a, 2012b).⁴ It is a multi-step function of the following type:

$$\rho_{cs}(\mathbf{c}_i; \mathbf{z}) = \begin{cases} \delta_i^\alpha & \text{if } \max\{\mathbf{c}_i\} = 1 \\ 0 & \text{if } \max\{\mathbf{c}_i\} = 0 \end{cases}$$

$\rho_{cs}(\mathbf{c}_i; \mathbf{z})$ is in a way a fuzzy approach that differentiates between the poor on one hand and different degrees of poverty severity on the other. The specific shape of the function is of intriguing simplicity: the function is always non-decreasing in the number of deprivations, however, the marginal increase in poverty severity is the less the higher the substitutability between attributes. Whereas the former accounts for inequality, the latter ensures correlation-sensitivity. The relationship between the two is determined by alpha.

Alpha is an indicator for inequality aversion that is inextricably linked with the relationship among attributes and vice versa. More precise, a higher level of substitutability among attributes inevitably implies a higher level of inequality aversion and vice versa.

In case $\alpha < 1$, $\rho_{cs}(\mathbf{c}_i; \mathbf{z})$ approximates a concave shape, i.e. the increase in the level of poverty severity is marginally decreasing in the number of deprivations as the loss in even one attribute can hardly be compensated. This, in turn, implies a low level of inequality aversion:

⁴ Usually, the two concepts are equated rendering a sound distinction between the two concepts of distributive justice and efficiency impossible, despite the fact that such a distinction is indispensable for sound poverty measurement.

as already the loss in one attribute can barely be compensated, there is in fact no need for a strong focus on inequality. This is expressed by a low value of alpha.

In case $\alpha > 1$, $\rho_{cs}(\mathbf{c}_i; \mathbf{z})$ approximates a convex shape, i.e. the increase in the level of poverty severity is marginally increasing in the number of deprivations: the lack in only one attribute leads to a rather low poverty degree as $k - 1$ other attributes can compensate for the loss.

Obviously, there is a need for a strong focus on inequality as expressed by a high value of alpha.

As will be highlighted in the following section, this inequality- and correlation-sensitive way to identify the poor allows composite indices to satisfy two core properties that were hitherto considered to be impossible to be fulfilled at the same time (Rippin, 2012a, 2012b). The first is Factor Decomposability (FD) that allows the decomposition of the index according to poverty dimensions and indicators. The second is Nondecreasingness under Inequality Increasing Switch (NDS) in the case of ordinal poverty indices, and Inequality Sensitivity (IS) in the case of cardinal indices. The latter ensure the sensitivity of the final indices to both distributive justice as well as efficiency considerations.

As the purpose of this paper is to make a first proposal for a multidimensional poverty index for Germany and to study its strengths and weaknesses, I decided to concentrate on the simpler ordinal approach, i.e. to use the mathematical formula of the Correlation Sensitive Poverty Index (CSPI). However, as demonstrated by Rippin (2012b), the clear distinction between the concepts of distributive justice and efficiency can as well be introduced in the case of cardinal poverty indices. The resulting Inequality Sensitive Poverty Index (ISPI) could be utilised in the German context in the same way as the Correlation Sensitive Poverty Index (CSPI) suggested in this paper – of course only for those data that permit a cardinal approach.

The Axiomatic Foundation and Decomposition

The axiomatic approach provides the most transparent way to derive a poverty index by explicitly defining properties that it may or may not satisfy (Deutsch and Silber, 2005). The CSPI has also been derived axiomatically (Rippin, 2012a), thus, this section will provide a brief overview of the core axioms that it satisfies (e.g. Chakravarty, Mukherjee and Ranade, 1998; Bourguignon and Chakravarty, 1999; Tsui, 2002; Bourguignon and Chakravarty, 2003; Chakravarty and Silber, 2008).

Anonymity (AN): For any $\mathbf{z} \in Z$ and $\mathbf{X} \in \mathcal{X}_n$, $P(\mathbf{X};\mathbf{z}) = P(\Pi\mathbf{X};\mathbf{z})$ where Π is any permutation matrix of appropriate order.

Continuity (CN): For any $\mathbf{z} \in Z$ and $\mathbf{X} \in \mathcal{X}_n$, $P(\mathbf{X};\mathbf{z})$ is continuous on \mathbb{R}_+^{NK} .

Monotonicity (MN): For any $\mathbf{z} \in Z$ and $\mathbf{X}, \mathbf{X}' \in \mathcal{X}_n$, if for any individual h and any attribute l

$x_{hl} = x'_{hl} + \beta$, such that $x'_{hl} < z_l, \beta > 0$, and $x_{il} = x'_{il} \forall i \neq h$, $x_{ij} = x'_{ij} \forall j \neq l, \forall i$, then

$$P(\mathbf{X}';\mathbf{z}) \leq P(\mathbf{X};\mathbf{z}).$$

Principle of Population (PP): If for any $\mathbf{z} \in Z$, $\mathbf{X} \in \mathcal{X}_n$, and $m \in \mathbb{N}$ \mathbf{X}^m is a m -fold replication of \mathbf{X} , then $P(\mathbf{X}^m;\mathbf{z}) = P(\mathbf{X};\mathbf{z})$.

Strong Focus (SF): For any $\mathbf{z} \in Z$ and $\mathbf{X} \in \mathcal{X}_n$, if for any individual h and any attribute l

$x_{hl} \geq z_l, x'_{hl} = x_{hl} + \beta, \beta > 0$, and $x'_{il} = x_{il} \forall i \neq h$, $x'_{ij} = x_{ij} \forall j \neq l, \forall i$, then $P(\mathbf{X};\mathbf{z}) = P(\mathbf{X}';\mathbf{z})$.

Subgroup Decomposability (SD): For any $\mathbf{X}^1, \dots, \mathbf{X}^v \in \mathcal{X}_n$ and $\mathbf{z} \in Z$,

$$P(\mathbf{X}^1, \mathbf{X}^2, \dots, \mathbf{X}^v; \mathbf{z}) = \sum_{l=1}^v n_l / n P(\mathbf{X}^l; \mathbf{z}) \text{ with } n_l \text{ being the population size of subgroup}$$

$$\mathbf{X}^l, l = 1, \dots, v \text{ and } \sum_{l=1}^v n_l = n.$$

Factor Decomposability (FD): For any $\mathbf{z} \in Z$ and $\mathbf{X} \in \mathcal{X}_n$, $P(\mathbf{X};\mathbf{z}) = \sum_{j=1}^k a_j P(x_j; z_j)$

Normalization (NM): For any $\mathbf{z} \in Z$ and $\mathbf{X} \in \mathcal{X}_n$, $P(\mathbf{X}; \mathbf{z}) = 1$ if $x_{ij} = 0 \forall i, j$ and $P(\mathbf{X}; \mathbf{z}) = 0$ if $x_{ij} \geq z_j \forall i, j$. Thus, $P(\mathbf{X}; \mathbf{z}) \in [0, 1]$.

Scale Invariance (SI): For any $\mathbf{z} \in Z$ and $\mathbf{X}, \mathbf{X}' \in \mathcal{X}_n$, $P(\mathbf{X}; \mathbf{z}) = P(\mathbf{X}'; \mathbf{z}')$ where $\mathbf{X}' = \mathbf{X}\mathbf{\Lambda}$; $\mathbf{z}' = \mathbf{\Lambda}\mathbf{z}$ with $\mathbf{\Lambda}$ being the diagonal matrix $diag(\lambda_1, \dots, \lambda_k), \lambda_j > 0 \forall j$.

Nondecreasingness under Inequality Increasing Switch (NDS): For any $\mathbf{X}, \mathbf{X}' \in \mathcal{X}_n$ such that \mathbf{X}' is obtained from \mathbf{X} by an inequality increasing switch, $P(\mathbf{X}; \mathbf{z}) \leq P(\mathbf{X}'; \mathbf{z})$.

Further, for any $\mathbf{X}, \mathbf{X}', \mathbf{X}'' \in \mathcal{X}_n$ if \mathbf{X}' is obtained from \mathbf{X} by an inequality increasing switch between *complement* attributes and \mathbf{X}'' by an inequality increasing switch between *substitute* attributes, $P(\mathbf{X}; \mathbf{z}) \leq P(\mathbf{X}'; \mathbf{z}) \leq P(\mathbf{X}''; \mathbf{z})$.

AN requires that any personal characteristics apart from the respective achievement levels are irrelevant for poverty measurement. CN is a rather technical requirement precluding the oversensitivity of poverty measures. MN requires poverty measures not to increase if, *ceteris paribus*, the condition of a deprived individual improves. PP precludes the dependence of poverty measures from population size and thus allows for cross-population and -time comparisons of poverty. SF demands that giving a person more of an attribute with respect to which this person is not deprived will not change the poverty measure. FD and SD facilitate the calculation of the contribution of different subgroup-attribute combinations to overall poverty, improving the targeting of poverty-alleviating policies. NM is a simple technical property requiring poverty measures to be equal to zero in case all individuals are non-poor and equal to one in case all individuals are poor. SI requires that a *proportional* distribution should leave inequality levels unchanged, ensuring that poverty indices do not change with the unit of measurement. Finally, NDS requires that a switch of attributes that increases (reduces) the number of deprivations suffered by the person with higher (lower) initial deprivation will increase poverty. The strength of the increase depends on the relationship among attributes.

The following family of poverty indices is the only one able to satisfy all aforementioned properties (Rippin, 2012a):

$$P(\mathbf{X}; \mathbf{z}) = 1/n \sum_{i \in S_j} f(\mathbf{c}_i) \sum_{j \in \{1, \dots, k\}; c_{ij}=1} a_j$$

with $\sum_{j=1}^k a_j = 1$ and $f(\mathbf{c}_i): \mathbb{R}_+^K \times \mathbb{R}_{++}^K \rightarrow (0,1]$ non-decreasing in $d_i = \#\{c_{ij} | c_{ij} = 1\}$ with a nondecreasing (nonincreasing) marginal⁵ in case attributes are considered to be substitutes (complements).

An intuitively appealing index that belongs to this family is the CSPI that is defined as follows:

$$P_{CSPI}(\mathbf{X}; \mathbf{z}) = 1/n \sum_{i \in S_j} \delta_i^\alpha \sum_{j \in \{1, \dots, k\}; c_{ij}=1} a_j$$

The CSPI is the only ordinal and additive poverty index that can be decomposed into all three “*I’s of poverty*” (Jenkins and Lambert, 1997, p. 317), i.e. *incidence*, *intensity* and *inequality* (Rippin, 2012a):

$$P_{CS}(\mathbf{X}; \mathbf{z}) = H \cdot \mu(\boldsymbol{\delta})^{\alpha+1} \cdot [1 + 2GE_{\alpha+1}(\boldsymbol{\delta})]$$

with $\alpha > 0$, the *headcount ratio* $H = (q/n)$ measuring the incidence of poverty, the

aggregate deprivation count ratio $\mu(\boldsymbol{\delta}) = (1/q) \sum_{i \in S_j} \sum_{j \in \{1, \dots, k\}; c_{ij}=1} a_j$ measuring the intensity of

poverty breadth and the *GE inequality measure of deprivation counts*

$$GE(\boldsymbol{\delta}) = [1/q(\theta^2 - \theta)] \sum_{i \in S_j} [\delta_i / \mu(\boldsymbol{\delta})]^\theta - 1$$
 capturing the inequality of the distribution of

deprivations among the poor.

Please note that poverty incidence as defined in this decomposition is in fact the headcount of all those who are deprived. In other words, it is very high due to the fact that it neglects the differences in the levels of poverty severity that exist between the individuals. However, this differentiation is a key element of the fuzzy approach to poverty measurement as described in

the previous section. Thus, in the empirical application, I will separate the overall headcount into the following three categories:

Category one: **Deprivation affected**. Individuals are classified as deprivation affected whenever the weighted sum of their deprivations is one third or less, i.e. $\sum_{i \in S_j} \delta_i \leq 1/3$. It is important from a policy perspective to have them on the radar in order to ensure that their situation does not further deteriorate. However, no action has to be taken at that level. Thus, whenever I will compare different headcounts in the following empirical analysis, I will only concentrate on the headcount of those who belong either to category two or category three.

Category two: **Poor**. Individuals are classified as poor whenever the weighted sum of deprivations is higher than one third but not higher than two thirds, i.e. $1/3 < \sum_{i \in S_j} \delta_i \leq 2/3$.

Category three: **Severely poor**. Individuals are classified as severely poor whenever the weighted sum of their deprivations is higher than two third, i.e. $\sum_{i \in S_j} \delta_i > 2/3$. These are the poorest of the poor whose capability set is limited in such a way that it is almost impossible for them pursue their goals in life. At least out of considerations of distributive justice, they are the ones who should be high on the political agenda.

I shall come back to that specific issue if classification in the empirical application.

⁵ A function $f(x)$ has a nondecreasing marginal if $f(x_g + 1) - f(x_g) \geq f(x_h + 1) - f(x_h)$ whenever $x_g \geq x_h$.

The German Correlation Sensitive Poverty Index (GCSPI)

The following section is devoted to the derivation of the German Correlation Sensitive Poverty Index (GCSPI). The mathematical formula is that of the CSPI for $\alpha = 1$:⁶

$$CSPI_{\alpha=1} = 1/n \sum_{i \in S_j} \delta_i \sum_{j \in \{1, \dots, k\}; c_{ij}=1} a_j \quad (1)$$

In the following, I will utilise the German Socio-Economic Panel (GSOEP) in order to suggest poverty dimensions and indicators specifically for the German context. The GSOEP is a representative longitudinal panel data set collecting socio-economic information at the household level in Germany since 1984. After the German reunification in 1990, the data set has been expanded in order to cover the former German Democratic Republic (DDR). The survey is repeated annually with every adult in a household aged sixteen years or older being surveyed (Wagner, Frick and Schupp, 2007).

I decided to take advantage of the fact that the GSOEP surveys every household member aged sixteen years or older by using this rare opportunity to measure poverty on the individual rather than the household level. However, since such an approach requires a self-conscious evaluation of the own situation, the minimum age of those who could be considered in the calculations turned out to be seventeen. In addition, the existence of missing values in one or more of the chosen indicators was countered with the removal of the whole observation. This treatment led to a reduction in the final sample size which amounts to roughly 70 per cent of its initial size. Please note that this reduction in the sample size is the reason for the discrepancy between the at-risk-of poverty rates (AROPR) calculated in this paper and those that are officially reported in the German poverty reports.

⁶ This conservative way to choose α suits particularly well as long as a deeper analysis of the relationship between poverty dimensions is lacking. Once more is known about the relationship between poverty dimensions, other levels of α might prove to be more appropriate.

Finally, many of the indicators chosen in the following are only available from 2002 onwards and in some cases have been collected only every two years. Thus, I will restrict the empirical analysis to the time period 2002 to 2010, calculating all indexes every two years (i.e. 2002, 2004, 2006, 2008, 2010).

In order to identify the minimum capability set, comprising those central functionings that are necessary in order to pursue whatever one has reason to value, this paper starts with the theoretical approach of Martha Nussbaum (Nussbaum, 2003). Martha Nussbaum's work is typically considered to be the most influential and thorough operationalisation of the capability approach developed so far. The female philosopher draws heavily on the work of Aristotle in proposing the following list of 'central human capabilities' (Nussbaum 2003, pp. 41-42):

1. **Life:** 'Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.'
2. **Bodily Health:** 'Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.'
3. **Bodily Integrity:** 'Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.'
4. **Senses, Imagination and Thought:** 'Being able to use the senses, to imagine, think, and reason – and to do these things in a 'truly human' way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech,

and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.’

5. **Emotions:** ‘Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one’s emotional development blighted by fear and anxiety.’
6. **Practical Reason:** ‘Being able to form a conception of the good and to engage in critical reflection about the planning of one’s life.’
7. **Affiliation:** ‘A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (...) B. Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.’
8. **Other Species:** ‘Being able to live with concern for and in relation to animals, plants, and the world of nature.’
9. **Play:** ‘Being able to laugh, to play, to enjoy recreational activities.’
10. **Control Over One’s Environment:** ‘A. Political. Being able to participate effectively in political choices that govern one’s life; having the right of political participation, protections of free speech and association. B. Material. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason, and entering into meaningful relationships of mutual recognition with other workers.’

Apart from the theoretical justification in building upon this list in order to derive the poverty dimensions and indicators for the GCSPI, this approach receives additional justification by the fact that the same list served as a basis for the roundtable discussions of public advisors and scientific experts involved in the development of the German Poverty and Wealth Report, adding additional legitimacy (Arndt and Volkert, 2007).

In this context, it is also interesting to take note of the results of a recently conducted survey of German families that questioned respondents about what they conceive to be the most important political tasks in Germany (Monitor Familienleben (i.e. Family Life), 2012). The respondents identified the following four areas: i) to ‘fight unemployment’ (79%), related to capability number ten, ii) to ‘promote young families with children’ (50%), related to capability number four and seven, iii) to ‘reform the health system’ (49%), related to capabilities number one, two and three, and iv) to ‘improve the reconciliation of family and work life’ (47%), related to capabilities number seven and nine.

Interestingly enough, the capabilities that were not covered by the responses are capabilities number five, six and eight, i.e. those capabilities that can hardly be captured by any indicator. The latter is also the reason why these capabilities are not considered in the following drawing up of the GCSPI, a decision that is considerably cushioned by the fact that they have not been mentioned in the survey. That does, however, not apply to capability number one whose operationalisation would be desirable and also seems to be feasible. For instance “life expectancy” would be a good indicator to capture it. Nevertheless this specific capability could not be considered in the drawing up of the GCSPI as the GSOEP does not provide enough information to calculate such an indicator.

Thus, the following drawing up of the GCSPI is based on the capabilities ‘bodily health’; ‘bodily integrity’; ‘senses, imagination and thought’; ‘affiliation’; ‘play’; and ‘control over one’s environment’. Whenever possible, this paper bases its choice of indicators to capture

these capabilities on the indicators that were proposed during the aforementioned roundtable discussions (Arndt and Volkert, 2007).

However, when it comes to the choice of threshold levels, I deliberately refrain to follow the suggestions. The reason is that the threshold levels proposed during the discussion are rather often relative, typically a percentage of the median value. Despite the fact that such an approach in a composite index with several dimensions would lead to inapplicably high poverty rates – even if categorized as suggest in the previous section – I also want to set a counterexample to the relative nature of indices like the AROPR that are so severely disputed in the context of affluent countries. Thus, I will utilise the legal minimum requirements as threshold levels whenever possible.

In the following, I will discuss the dimensions, indicators and threshold levels that have been chosen for the drawing up of the GCSPI.

The **first dimension** chosen for the GCSPI is **health** and captures mainly capability number two, i.e. ‘bodily health’. However, it influences a lot of other capabilities as well. Suffering from bad health limits a person’s capability to participate in social life, negatively influences emotions and might even prevent the person to practise his or her occupation. Also, those concerned would typically need more money than their fellow citizens as they are often forced to invest considerable amounts of money in medical treatment. Two indicators are used to capture this dimension, both suggested by Arndt and Volkert (2007).

The first one is “*bad health condition*” and is based on the self-evaluation of respondents on a scale ranging from one to five (i.e. ‘very good’, ‘good’, ‘satisfactory’, ‘poor’, ‘bad’). Anyone considering his or her health status to be either ‘poor’ or ‘bad’ is considered to be deprived according to this indicator. Since I just argued that my intention is to base the GCSPI on absolute and objective criteria, this exception from my own principle needs some explanation. There has been a lot of discussion recently about the best way to capture individual health conditions that is due to a new research direction in anthropology initiated by Arthur

Kleinman and others (Kleinman, Eisenberg, and Good, 1978; Kleinman, 1988; Sen, 2009).

The experts strongly criticise the traditional way of utilising health statistics to evaluate health in a society. Their argument is simple but strong: bad health is first and foremost a matter of self-evaluation for if an individual claims to feel bad, i.e. to suffer impairments, to feel pain, etc., who can by any means claim this self-evaluation to be wrong? Thus, Kleinman defines illness as ‘the innately human experiences of symptoms and suffering’ (Kleinman, 1988, p. 3) that has to be captured by patient interviews. The questions he proposes for this self-evaluation have become known as ‘Kleinman's Questions’. Considering the strength of arguments and the fact that this is the current state-of-the-art approach in anthropology, I decided to use, for once, this subjective indicator.

The second indicator is “*insufficient access to health care*” and is based on whether individuals who suffered pain within the last four weeks⁷ prior to the interview actually visited a physician. In case they did not, they are considered to be deprived according to this indicator.

The **second dimension** of the GCSPI is **education** and captures mainly capability number four, i.e. ‘senses, imagination and thought’, but has a distinct influence on other capabilities as well, such as occupational choice and future income, but also on emotional issues like self-confidence and, connected with this, the ability to engage in social interaction. In fact, there is hardly any other dimension that has such a potential to seriously limit the size of the capability set available in the future. It is then all the more worrying that educational achievements in Germany are strongly correlated with children’s social background, introducing rather strong distortions in the objective of a level playing field (Education in Germany, 2012). In addition, the strong influence of the parents on the educational

⁷ Please note that the definition of this indicator is slightly different from Arndt and Volkert (2007) who utilise as an indicator whether the individual suffered health impairments during the last three months without visiting a physician.

achievements of their children makes income a rather bad indicator: a recent analysis revealed that children with at least one working parent have better chances than children whose parents are unemployed – even if the former have to get along with less money than the latter. This is just another argument against income as a good poverty indicator.

The dimension education is captured by two indicators. The first one is “*school drop out*” and is again based on Arndt and Volkert (2007). The deprivation threshold for this indicator, however, is based on compulsory schooling, which in Germany is either nine or ten years of schooling, depending on the respective Bundesland. Thus, any person who dropped out of school with less than nine years of schooling is considered deprived according to this indicator.

The second indicator is “*no graduation or training qualification*”. That indicator captures the aspect that a person might have spent nine years in school, however, without graduation. Or, even in case a person was able to complete secondary education, he or she might not have received any further training qualification that is part of the German dual education system and would be needed in order to enter the labour market. Thus, any person who left school without graduation and / or training qualification will be considered deprived according to this indicator.

The **third dimension** in the GCSPI is **employment** and directly captures the capabilities number nine and ten, i.e. ‘play’ and ‘control over one’s environment’. Since I would otherwise run into a problem with missing values, I decided to capture this dimension by a composite indicator with the following three components: i) “main personal activity status unemployed”, ii) “working poor”, and iii) “time poor”.

With regard to the first component, “*main personal activity status unemployed*”, it is crucial to note that employment is a lot more than just a source of income. Indeed, a recent study analysing poverty in Europe finds ‘evidences that income sources and socio-economic endowments, and not only income level, matter for the individual well-being’ (Figari, 2012, p.

416). This finding is strongly connected with issues like self-respect and with what already Adam Smith described as the ability to appear in public without shame (Smith, 1776: p. 466-67). Though there are of course those who seemingly enjoy the fact that they do not need to work, there are also many persons who would willingly even sacrifice money in order to be able to claim that he or she earned what he or she has. Otherwise the considerable amount of working poor, i.e. those who work for such small income that they depend on additional social security benefits to get along, could never be explained. Thus, I consider those as deprived who are registered as seeking employment but whose main personal activity status over the year has been unemployed.

However, to consider only unemployment within the employment dimension falls way too short. For instance, such a minimalist approach would mask for instance the fact that Germany is increasingly faced with the aforementioned problem of the “*working poor*”. The phenomenon is caused by an increase in labour market flexibility through short-time work (“*Kurzarbeit*”) and temporary work (“*Leiharbeit*” or “*Zeitarbeit*”). From 2008 to 2009, in the midst of the economic crisis, the number of short-term workers increased from about 100,000 to more than 1.1 million (Faik, 2012, p. 6). In addition, according to the Federal Employment Agency, more than 870,000 people were employed by one of almost 18,000 recruitment service companies by the end of 2011. This is a precarious situation since, again according to the Federal Employment Agency, temporary workers earn considerably less for the same type of work than those normally employed, leaving many dependent on additional social security benefits. Thus, the state in fact subsidises low wages and contributes to the problem of poverty in old age (Burmeister, 2012, p. 4).

In order to account for the working poor, a minimum wage comes in handy as a possible indicator. As Germany does not have an official minimum wage, I draw on a suggestion of the Hans Böckler Stiftung to utilise the limit of exemption from execution in order to derive an appropriate minimum wage (Böckler Impuls, 2006, p. 1). Until 1 July 2011, the limit of

exemption from execution was 989.99 Euro, an amount that can be easily translated into a minimum wage of 8.29 Euro per hour⁸. In order to ensure the comparability of this amount over time, the value is indexed by the CPI (base year 2010).

Whereas the income aspect of employment has traditionally received a lot of attention, another aspect suffered chronic neglect, the problem with the so called “*time poor*”. This is the third component of the deprivation indicator. Especially from a capability perspective, the ability to have a sufficient amount of leisure time at command is crucial as it is an elementary precondition for the ability to participate in social life. The aforementioned survey of families in Germany (Monitor Familienleben, 2012) highlights the importance of the topic in the German context. The majority of parents with children under the age of sixteen expressed their desire to be able to spend more (45%) or even much more (28%) time with their families. Only 23% of the respondents declared to have sufficient time for their families. I account for this fact in two ways.

The first is based on the number of hours *overtime*. The second is based on the so called ‘*working hour tension*’ that captures the disparity between actual and preferred working hours, thereby accounting for the fact that people might be over- or underemployed (Merz, 2002). The indicator is based on two questions in the GSOEP that question respondents about i) their actual weekly working hours, and ii) the weekly hours they would prefer to work if explicitly accounting for the fact that income changes with working hours. Working hour tension is then calculated as the difference between actual and preferred working hours. Thus, an individual is time poor if either i) his or her weekly amount of hours overtime exceeds the

⁸ This is a monthly wage of 1,370 Euro (based on a 38-hour work-week) which is higher than the official minimum wage of the United Kingdom (1,202 Euro), but considerably lower than the official minimum wages of France (1,398 Euro), Belgium (1,444 Euro), Netherlands (1,447 Euro), Ireland (1,462 Euro), and Luxembourg (1,802 Euro).

legally permitted maximum amount of eight hours or ii) his or her working hour tension is ten hours or more.

The **fourth dimension is housing**, directly capturing capabilities number two, 'bodily health' and seven, 'affiliation'. Of course the requirement to have adequate shelter is especially important from the perspective of the 'affiliation' capability. In fact, it is one of the perspectives for which the capability approach is most convincing. In order to be able to participate in the social life of the community, in order to engage with people, a certain minimum standard of living is absolutely necessary. Children who are ashamed of their living conditions will deliberately prevent any relationship from becoming more than superficial as they are afraid that the relationship might reach a point where they would be forced to invite someone home. These children grow up isolated and deprived of social contacts that would be crucial for their development. In order to capture this aspect, I follow the suggestions of Arndt and Volkert (2007) and use the following three indicators: "unacceptable housing", "lack of socially necessary amenities", and "overcrowding".

I again follow Arndt and Volkert (2007) by characterising anyone as deprived according to "unacceptable housing" whose housing is characterised as either 'in urgent need of complete renovation' or 'in danger of breaking down' (Arndt and Volkert, 2007, p. 28). Persons are identified as deprived according to a "lack of socially necessary amenities", if they lack either of the following "in-house bath/shower", "in-house toilet", "warm water", "central heating" (Arndt and Volkert, 2007, p. 28). However different from Arndt and Volkert (2007) out of aforementioned reasons, I refrain to utilise the subjective notion of overcrowding as the threshold level. Instead, I declare persons to suffer from "overcrowding" if their living space is below which was, at least until 2010, the appropriate living space for those receiving welfare payments under the so-called Hartz-IV-scheme: 45sqm for the first and 15sqm for every additional person (infants below two years of age excluded).

The **fifth dimension** is **mobility**, capturing basically capabilities three, ‘bodily integrity’ and seven, ‘affiliation’. Mobility is increasingly a prerequisite for pursuing a profession.

Especially in more rural areas many people have to commute out to find work, in addition many couples have not been able to find work in the same city, requiring them to commute.

Mobility is also a precondition for the ability to participate in social life, all the more in case children are concerned who are especially vulnerable. Mobility can be restricted due to i) limited access to transportation, ii) bad health condition, iii) insecure environment.

The first aspect is captured by the “inability to afford a much-needed car”. In the cities, mobility is usually ensured by public transportation systems; however, this system is often not very well developed outside of towns. Thus, a person is considered deprived in this indicator if he or she lives in a household that is unable to afford a car though it would be needed.

The second aspect is captured by “health impairments”. A person is considered to be deprived according to this indicator, if he or she suffers from such severe health conditions that at least four of the following five issues apply: 1. he or she has trouble climbing stairs; 2. his or her health condition limits the ability to perform exhausting activities; he or she achieved less due to 3. physical or 4. mental health condition; 5. he or she has reduced social contacts due to health problems.

The third aspect, “insecure environment” could be captured by the classification of the neighbourhood as “very insecure” (Arndt and Volkert, 2007). The GSOEP, however, retrieves this information only every five years and thus not frequently enough for this analysis that calculates the poverty index every two years. Thus, this specific aspect will not be included in the final index.

Finally, the **sixth dimension** is **income**, capturing directly capability number ten, ‘control over one’s environment’. Though income is definitely not the only indicator for poverty measurement, it is obviously an important one. I will consider a person as income deprived if his or her disposable (i.e. after debt service) household income is below the official German

breadline as defined in the seventh Existenzminimumbericht (breadline report) for 2010, i.e. below 638 EUR for single persons; 1,083 for couples; and 322 EUR for each child. As the issue of additional persons in the household is not captured by the report, I utilise the difference in the amount allowed to single persons and to couples, i.e. 356 EUR, for each additional adult in the household. In order to ensure the comparability of the breadline over time, the value is indexed by the CPI (base year 2010). Please note that these figures are indeed breadline figures that happen to be considerably below those of the AROPR.

Figure 1 provides an overview of the different dimensions, indicators and thresholds used for the calculation of the GCSPI.

Fig. 1 Dimensions, Indicators and Thresholds of the GCSPI

Dimension	Main Capability	Indicator	Threshold
Health	Bodily Health	Health Condition	Subjective health condition either poor or bad
		Access	Combination of the following: 1. Physical pain in last four weeks 2. No doctor visits
Education	Senses, Imagination and Thought	Schooling	Less than nine years of schooling
		Graduation	Neither graduation nor training qualification
Employment	Affiliation Control over Environment Play	Employment	At least one of the following: 1. Activity status 'unemployed' 2. Working poor (wage below minimum) 3. Time poor, i.e. neither of the two: 3.a Working hour tension at least ten hours 3.b More than eight hours overtime
Housing	Bodily Health Affiliation	Housing Condition	Condition of housing either: 1. In urgent need of complete renovation 2. In danger of breaking down
		Socially Necessary Amenities	Lack of either of the following: 1. In-house bath / shower 2. Warm water 3. In-house toilet 4. Central heating
		Living Space	Living space below minimum (45sqm for first, 15sqm for every additional household member (infants excluded))
Mobility	Bodily Integrity	Transport	Car much needed but not affordable
		Health Impairments	At least four of the following: 1. Have trouble climbing stairs 2. Health limits vigorous activities 3. Achieved less due to physical health condition 4. Achieved less due to mental health condition 5. Reduced social contacts due to health problems
Income	Control over Environment	Disposable Income	Disposable income below breadline (638 EUR for first, 356 EUR for every additional adult, 322 EUR for every additional child per household)

Once dimensions, indicators and threshold levels have been chosen, the next exercise concerns the choice of weights for dimensions and indicators. Several options can be applied in order to choose the weights. As far as the dimensions are concerned, I utilise a rather conservative approach by applying equal weights, i.e. each dimension contributes to overall deprivation in the same way. The considerations leading up to that decision are primarily motivated by the fact that the dimensions are directly derived from Martha Nussbaum's list of central human capabilities, thus it seems somewhat inappropriate to utilise different weights for them – at least as long as no participatory approach is available that would provide a convincing basis for a deviation.

Things are different for the choice of indicators. In that case, I apply two different approaches. The first one is again the equal weighting approach, i.e. each indicator contributes to the respective poverty dimension in the same way. The second approach is called prevalence or frequency-based weighting. With this approach, each indicator is weighted in dependence of the proportion of the individuals in the population who are not deprived in that indicator at each point in time. The higher the proportion of those who are not deprived in a given indicator, the higher is the weight assigned to it. The reasoning behind this approach is that the lower the likelihood that a person is deprived in an indicator, the more he or she has reason to feel deprived. Thus, the higher weight acknowledges the stronger indicative nature of this specific indicator with regard to deprivation. Moreover, as prevalence weights are calculated for each point in time, this weighting approach is able to account for a situation in which the condition of a person does not change although the overall situation in the society improves: as the proportion of those not deprived in a given indicator increases, the weight of that indicator increases as well, implying a *ceteris paribus* increase in the deprivation score of such person (e.g. Figari, 2012)

Due to its appealing nature, I will base the following analysis on the prevalence weighted GCSPi unless stated otherwise. However, in order to test the robustness of the results, all

results were calculated for the equal weighting approach as well. The results for both equal as well as prevalence weighted GCSPI for the years 2002-2010 can be found in tables 5 to 14 in the appendix. The results are highly correlated, as the following table demonstrates.

Tab 1 Spearman Rank Correlation (Prevalence and Equal Weighting)

	2002	2004	2006	2008	2010
Spearman correlation	0.9964	0.9965	0.9962	0.9959	0.9962
Number obs.	19,636	17,919	18,022	16,153	14,769
p value	0.0000	0.0000	0.0000	0.0000	0.0000
Spearman correlation (obs. different from zero)	0.9876	0.9870	0.9856	0.9841	0.9846
Number obs.	12,873	11,512	11,501	10,201	9,154
p value	0.0000	0.0000	0.0000	0.0000	0.0000

Spearman rank correlation coefficients range from 0.9959 (2008) to 0.9965 (2004)

considering all observations, and from 0.9841 (2008) to 0.9876 (2002) considering only those observations for which the index is larger than zero. Also, the respective ranking of the Bundeslaender is the same for both weighting methods with only very few minor exceptions⁹.

In order to get a first impression how the GCSPI works in practice, i.e. when applied to real data, it is crucial to compare the results with those of other poverty indices. This paper will utilise two other poverty indices besides the GCSPI that are based on the two main theories of welfare economics, i.e. the income approach and traditional welfarism that defines well-being in terms of happiness. Thus, the following section will start with a brief introduction of these two indices.

Empirical Application

The first index is the at-risk-of-poverty rate (AROPR) that is based on the theoretical approach to measure poverty as a lack of income. As has been described before, the approach received a lot of criticism for the restrictiveness of the assumptions on which it is based as well as its inability to convincingly explain the existence of poverty in affluent countries like

⁹ When changing from the equal weighting approach to prevalence weighting, there are four rank changes, three in 2008 (Hamburg, initially rank 3, switches places with Hesse, initially rank 4; Bavaria, initially rank 6 switches places with Baden-Württemberg, initially rank 7; Saarland, initially rank 13, switches places with Saxony, initially rank 14) and one in 2010 (Brandenburg, initially rank 9, switches places with Saxony, initially rank 10).

Germany. Nevertheless, as has been pointed out before, the AROPR is the only official index used to evaluate poverty in Germany. The results for the AROPR for the years 2002-2010 can be found in table 4 in the appendix.

The second index belongs to the group of happiness indices that receive a lot of attention recently. This development is rather astonishing considering the fact that the corresponding theory, i.e. traditional welfarism, had been abandoned just because of the impossibility of inter-personal happiness comparisons (Robbins, 1938, p. 640; Sen, 2009, p.277-278). The recent interest in happiness indices appears like a late resurrection of the traditional approach. Aristotle's concept of happiness differentiates between instant feelings on one hand and long-term happiness on the other, claiming that only the latter, the so called 'Eudaimonia' (Bartlett and Collins, 2012, p. x) is adequate for evaluation. Thus, the hereafter introduced Subjective Correlation Sensitive Poverty Index (SCSPI) is based on questions related to individual satisfaction, reflecting the conviction that the concept of satisfaction comes very close to the concept of 'Eudaimonia' that Aristotle suggested for evaluation.

Methodologically, the SCSPI is based on the same mathematical formula (1) as the GCSPI, thus satisfies the same properties.

Different from the GCSPI, the SCSPI is based on only four dimensions: 1. health, 2. employment, 3. housing, and 4. income. The other two dimensions of the GCSPI, i.e. education and mobility, could not be included due to a lack of data. The SCSPI is based on a self-evaluation on a scale ranging from zero (completely dissatisfied) to ten (completely satisfied). The chosen threshold level for all the dimensions is three, i.e. considerably dissatisfied. Figures 2 to 5 in the appendix illustrate the distribution of responses across the German population for the year 2010.

Please note that the same classification of poverty degrees is used in the case of the SCSPI that has been introduced for the GCSPI. Again, category one describes those who are **deprivation affected**, i.e. those whose weighted sum of deprivations is one third or less. As

in the case of the GCSPI, the responding headcount will not be considered in the following analysis. Category two defines those who are **poor**, i.e. those whose weighted sum of deprivations is higher than one third but not higher than two thirds. Finally, category three describes the **severely poor**, i.e. those whose weighted sum of deprivations is higher than two third. The results for the SCSPI for the years 2002-2010 can be found in tables 15 to 19 in the appendix.

As described in the introduction, both theoretical approaches to poverty measurement, traditional welfarism as well as the income approach, received a lot of criticism over the years. They left a theoretical gap to be filled, a gap that motivated Amartya Sen to introduce a whole new theory of welfare economics, i.e. the capability approach on which the GCSPI is based. The following analysis addresses the question whether and if yes in how far the differences in the theoretical approaches do indeed make a difference “on the ground”. In other words, when applied to real data, do the evaluations of poverty and poverty trends really differ? Is there indeed a need for the GCSPI?

For a start, the following table provides the results of the statistical correlations between the poverty dimensions of GCSPI, SCSPI, and AROPR based on the respective Kendall tau b correlations.

Tab 2 Kendall Tau b Between all Dimensions 2010 (Number of observations: 8,815)

		Health	Educat.	Empl.	Hous.	Mobil.	Income	Diss. Health	Diss. Empl.	Diss. Hous.	Diss. Income	AROP Income
Health	K. tau b	1.0000										
	p-value	0.0000										
Education	K. tau b	0.0493	1.0000									
	p-value	0.0000	0.0000									
Empl.	K. tau b	0.0234	0.0244	1.0000								
	p-value	0.0247	0.0202	0.0000								
Housing	K. tau b	0.0337	0.0720	0.0479	1.0000							
	p-value	0.0010	0.0000	0.0000	0.0000							
Mobility	K. tau b	0.2912	0.0645	0.0478	0.0818	1.0000						
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000						
Income	K. tau b	0.0612	0.0973	0.0948	0.1677	0.0942	1.0000					
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Diss. Health	K. tau b	0.4410	0.0119	0.0212	0.0089	0.2599	0.0361	1.0000				
	p-value	0.0000	0.2571	0.0470	0.3941	0.0000	0.0007	0.0000				
Diss. Empl.	K. tau b	0.1561	0.0281	0.0412	0.0383	0.1739	0.0916	0.2121	1.0000			
	p-value	0.0000	0.0075	0.0001	0.0002	0.0000	0.0000	0.0000	0.0000			
Diss. Housing	K. tau b	0.0813	0.0310	0.0460	0.1441	0.0948	0.0615	0.1200	0.1158	1.0000		
	p-value	0.0000	0.0032	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
Diss. Income	K. tau b	0.1547	0.0522	0.0976	0.0904	0.1839	0.1935	0.1925	0.2653	0.1857	1.0000	
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
AROP Income	K. tau b	0.0679	0.0835	0.1043	0.1930	0.1292	0.7454	0.0522	0.0909	0.0701	0.2098	1.0000
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

p-values correspond to the null hypothesis that the two indicators are independent.

All poverty dimensions demonstrate a positive correlation – though not always statistically significant – that indicates that they all indeed measure the same thing, i.e. poverty. At the same time, Kendall tau b is considerably lower than 0.80 in all cases, demonstrating that each dimension measures a distinctively different aspect of poverty ().

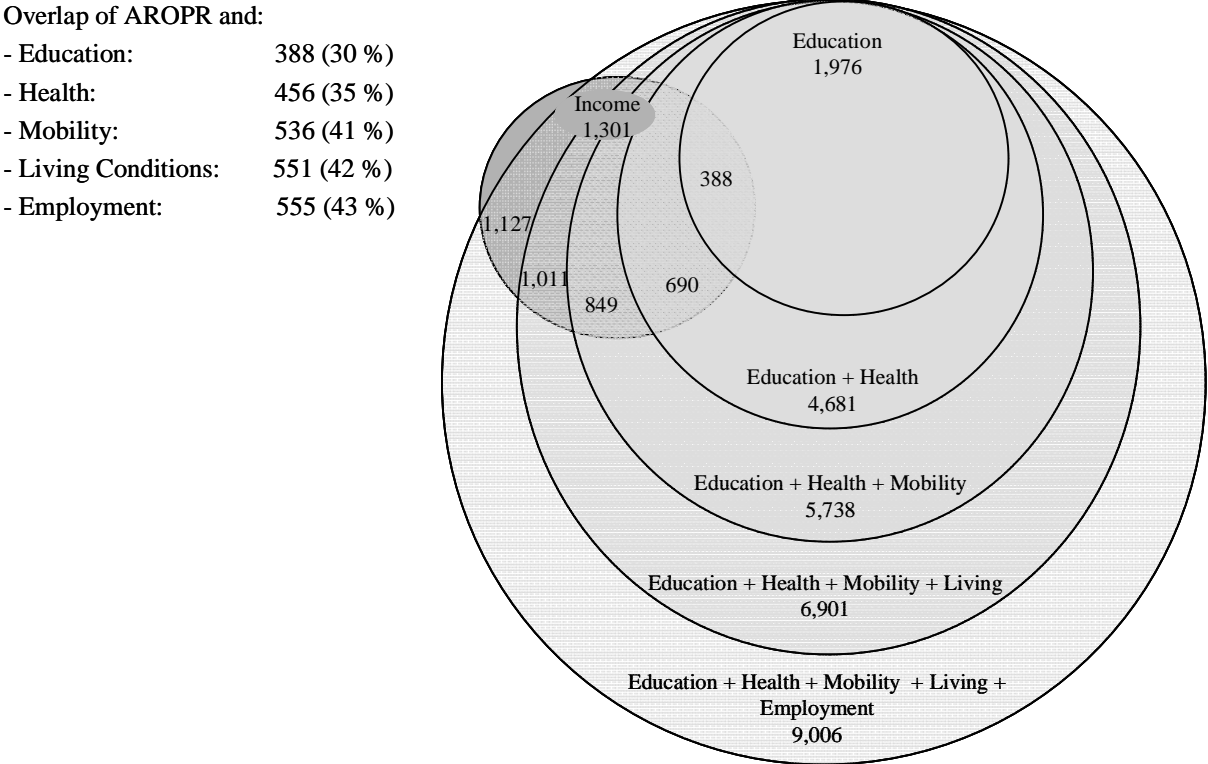
It is rather interesting that the two dimensions health and mobility (whose second indicator is closely connected to health) reveal the strongest correlation with all dimensions of dissatisfaction, not only dissatisfaction with health. It might point to a problem with subjective evaluation: imagine a person suffering from a bad health condition that might be as severe as to even limit his or her ability to move freely. Or imagine a person suffering from a bad mental condition. It seems rather likely to suggest that the overall bad feeling of the person is not only reflected in questions directly related to health but as well with regard to any other dimension. This would provide an explanation for the fact that the correlation between health on one hand and employment, housing and income on the other is so much

weaker than the correlation between health and dissatisfaction with employment, housing and income.

What is also rather interesting is the fact that, while the correlation between income and every other dimension is indeed always highly significant, it is at the same time in many cases astonishingly low. Especially interesting is the fact that the correlation between income and dissatisfaction with income is highly significant but much weaker than one would expect at first sight. This supports the fact that though income is of course correlated with other poverty dimensions, it is not an equally good proxy for all of them.

These findings are also supported by the following figure that compares the number of persons who are deprived according to the AROPR with those who are deprived according to the non-income dimensions of the GCSPI.

Fig 6 Headcounts AROPR and GCSPI (Number of Observations: 14,724)



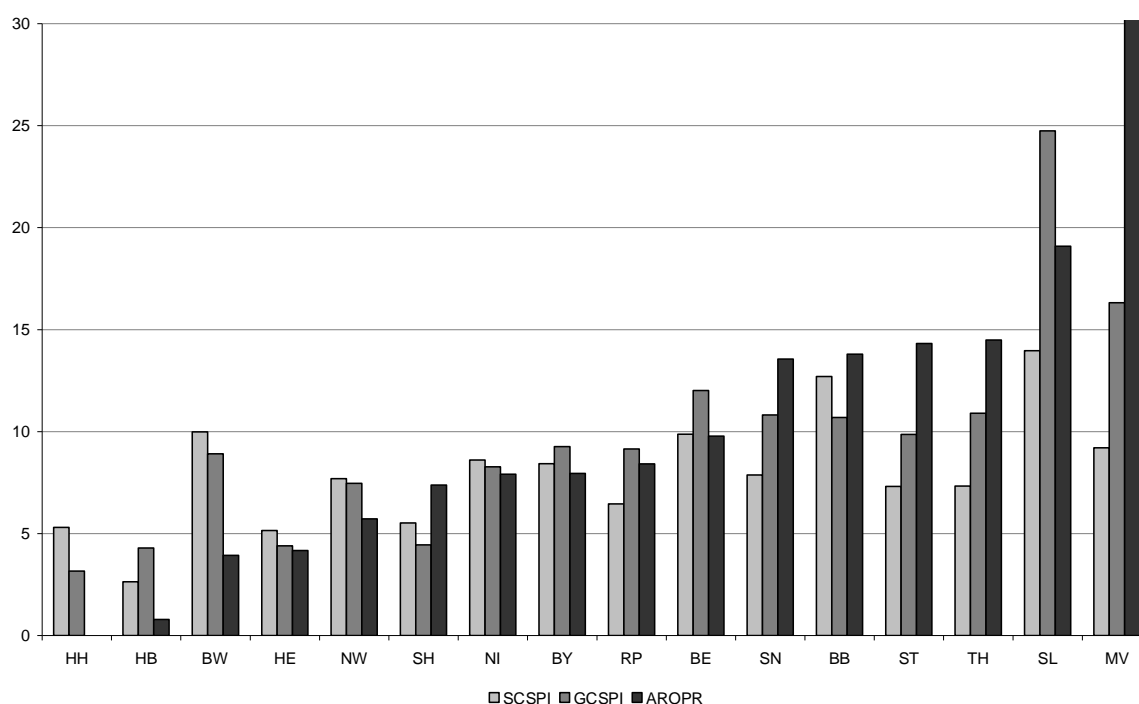
As one can easily see, the overlap – or the match – between the population parts that are at-the-risk-of-poverty and those that are deprived in the different non-income dimensions of the GCSPI is not at all distinct. In fact, the figures reveal a considerable failure of the income approach to account for other poverty dimensions apart from income. As the low Kendall tau

b correlation coefficients already indicate, the congruence between those who are deprived in income and those who are deprived in the non-income GCSPI dimensions ranges between 30% (education) and 43% (employment).

What the figure also captures is the fact that even after accounting for all five non-income GCSPI dimensions, there are still individuals left who are not deprived in any of these dimensions but are still at-the-risk-of-poverty. As has already been mentioned, the AROPR is considerably higher than the official breadline. Thus, I additionally verify whether there are also individuals whose net equivalence income is below the official breadline but who are nevertheless not deprived in any of the five non-income GCSPI dimensions. This is indeed the case: overall, 6.5% of the respondents have a net equivalence income below the official breadline. Of those, 14.1% are not captured by any of the five non-income GCSPI dimensions. This observation provides additional support for the decision to include income as a poverty dimension in the GCSPI – apart from the theoretical argument that it is the main indicator able to capture capability number ten.

The question that inevitably comes to mind when considering the weak correlation between the dimensions of the three poverty indices is how this affects poverty measurement. The following figure provides the deprivation headcounts (categories two and three) for GCSPI, SCSPI and AROPR for the German Bundeslaender. Please note that in this specific case all indices refer to the same persons. All observations have been dropped that did not provide enough information to calculate all three indices.

Fig 7 Headcount (categories 2 and 3) GCSPI, SCSPI and AROPR in Germany 2010



The first thing that immediately strikes the eye is the considerable discrepancy between old and new Bundeslaender, i.e. West and East Germany. Whereas there seems to be more income poverty in the Eastern parts of Germany¹⁰, a greater proportion of people seem to be dissatisfied in the Western Bundeslaender, especially in those that are more populous and urbanised. In fact, the figure almost acts like a mirror reflecting two different trends. Whereas in the Western Bundeslaender the percentage of those who are poor according to the SCSPI is highest, followed by the GCSPI and, finally, the AROPR, the picture is just the reverse in the Eastern Bundeslaender where the percentage of those who are poor according to the AROPR is highest, followed by GCSPI and, finally, SCSPI.

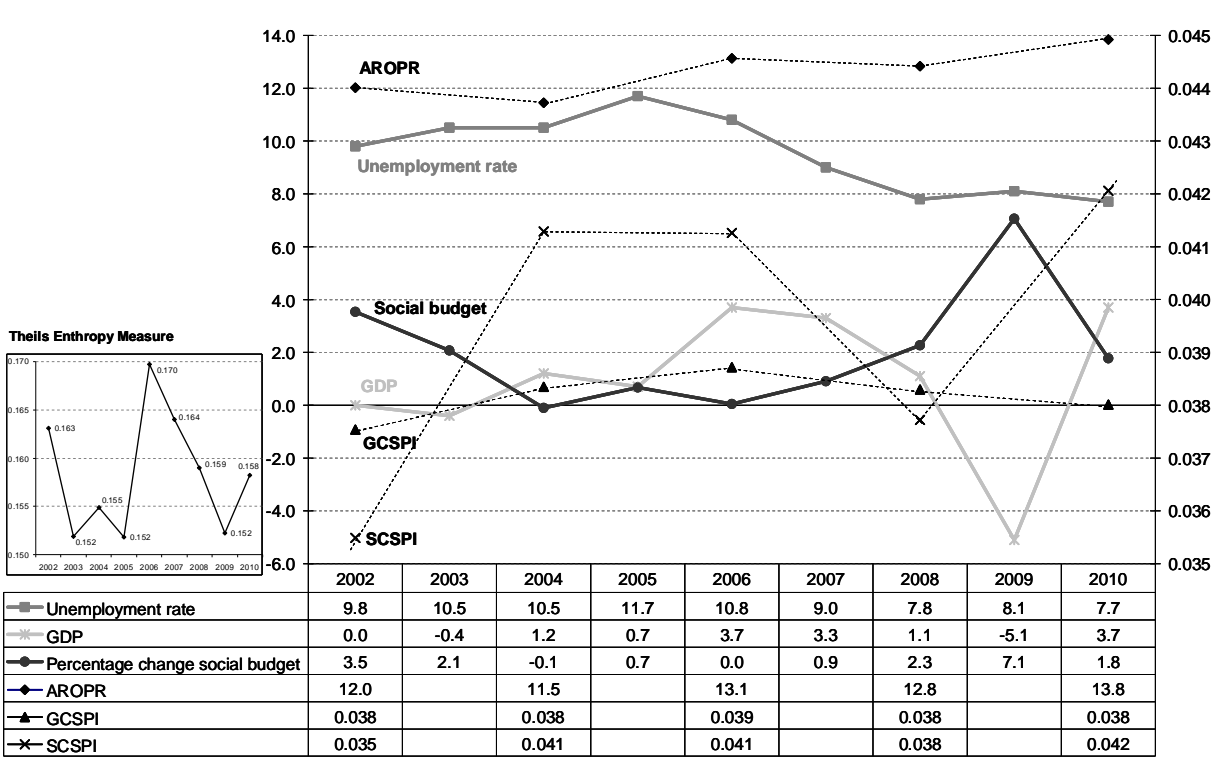
This observation makes a rather strong case for the problems connected with inter-personal comparisons of subjective indicators. It is also a first indicator of the problems that might be

¹⁰ The only outlier being the Saarland; the only Western Bundesland that joins the group of Bundeslaender with exceptionally high proportions of people at-the-risk-of-poverty that is otherwise completely dominated by the Eastern Bundeslaender. A reasonable explanation might be the rather high proportion of over-indebted people in this very small Bundesland (compare figure 8 in the appendix).

caused if a poverty measure is utilised that actually measures inequality more than anything else and therefore captures more of the structural differences that exist between the Eastern and the Western Bundeslaender than would be advisable if the purpose is poverty measurement.

In order to get a more dynamic impression of how the different approaches to measurement may differ, the following figures compares them over time and within the context of the development of the most important figures of the German economy. Please note that in this figure GCSPI and SCSPI are illustrated, not just their headcounts.

Fig 9 Development of Economic Figures Germany 2002-2010



The first thing to mention is the obvious volatility of the SCSPI over time, just as one would expect to be the case for subjective indices. It seems that the SCSPI is so busy in reflecting short-term changes that it is actually unable to provide an overall trend. The other two indices, the AROPR and the GCSPI, are able to provide such an overall trend. However, the trends they indicate diverge during two very interesting time periods, i.e. between 2002 and 2004 and between 2008 and 2010. The reason why these two time periods are especially interesting

is that they capture both economic crises that Germany faced during the considered time period, i.e. one in 2003 and one in 2009.

As Faik (2012, p. 8) points out, both crises are insofar comparable as income inequality decreased during the crisis, followed by an increase in the following year when the economy recovered. It is a typical outcome of a social welfare state whose social security system cushions the effect of the economic crises for the poorest parts of the population whereas the wealthiest parts typically experience its full force. In order to get an impression of the development of income inequality over time, I included a picture of the development of Theil's entropy measure over time. The measure belongs to the same class of GE inequality measures that is utilised in the GCSPI, though in this case for $\theta = 1$ ¹¹:

$$T = \frac{1}{n} \sum_{i=1}^n \left[\frac{y_i}{\mu} \cdot \log \left(\frac{y_i}{\mu} \right) \right]$$

with y_i representing the equivalent income for person i and μ representing the arithmetic mean of equivalent incomes. Data are taken from Faik (2012, p. 9).

Despite the same trends in income inequality during the two time period 2002-2004 and 2008-2010, there are two important differences. During the first recession in 2003, the percentage change of the social budget was reduced (from 3.5% in 2002 to 2.1% in 2003) whereas it was significantly increased during the second recession in 2009 (from 2.3% in 2008 to 7.1% in 2009).¹² Also, the unemployment rate happened to be higher after the first crisis, increasing from 9.8% in 2002 to 10.5% in 2004, whereas it was slightly lower after the second crisis,

¹¹ Any other value of θ would already imply an evaluation of inequality – like in the formula the GCSPI uses which belongs to the same class of GE inequality measures but for $\theta \neq 0,1$. The purpose here, however, is a description, not an evaluation, of the development of income inequality in Germany over time.

¹² The reduction of the economic recession of 2003 is unusual but might be due to the fact that there had been a rather strong increase in the previous year's percentage change as the social budget was raised from almost 662 billion in 2001 to more than 685 billion in 2002, maybe an election gift.

decreasing from 7.8% in 2008 to 7.7% in 2010. Whatever induced these differences, they provide a rather unique opportunity to compare the way of functioning of the AROPR and the GCSPI.

During the first economic crisis (2002-2004), rising unemployment and the decline in the percentage change in social benefits together with the implications of the crisis provide a more than convincing explanation for the slight increase in the GCSPI. The AROPR, however, fell slightly during the same time period. This can only be explained if the trend in inequality is taken into account: the loss of the wealthier parts of the society has been stronger than the loss of the poorer parts, causing a reduction in the income inequality of the society as a whole. This is reflected in a decrease of the AROPR. To put it more plainly, the AROPR decreases not because of an improvement in the living conditions of the poor but because the deterioration in the living conditions of the poor was weaker than the deterioration in the living conditions of the wealthy.

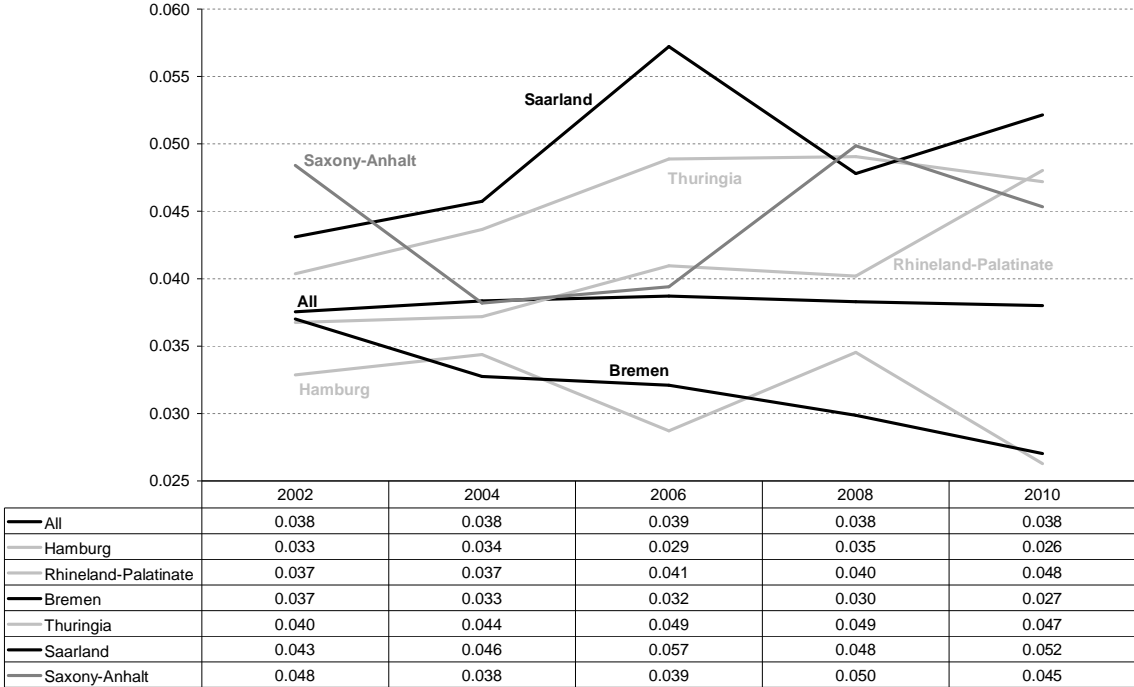
In the case of the second, much more severe, economic recession and completely different from the first, the AROPR increases, reflecting again the development of overall inequality in the society that is in 2010 almost as high as in 2008. Just as in the case of the recession of 2003, the GCSPI shows a trend directly opposite to the AROPR: This time the GCSPI decreases, capturing the slight decrease in the unemployment rate as well as the high level of social benefit expenditures (though the percentage change decreased, it did so compared to an overall high of 7.1% in 2009).

More interesting stories could be told from the figure, for instance with regard to the steep increase in income inequality from 2005 to 2006, the year in which a new set of rules for the long-term unemployed and social welfare assistance was introduced, the Hartz IV regulations, to only name one. To tell them all, however, would go beyond the scope of this paper.

I will commence the analysis with an illustration of the usefulness of the regional and dimensional decomposability of the multidimensional indices GCSPI and SCSPI. It is already

apparent from figure 9 that the changes in the GCSPI have been rather minor over time. With this observation in mind, the question inevitably arises as to how able the index is to reflect changes in the living conditions of the poor. Is the reason for the minor changes only the result of an unwanted inflexibility of the poverty measure? In order to be able to respond to that so important question, I take advantage of the subgroup decomposability of GCSPI and compare the development of poverty rates across the Bundeslaender. Some of the results are illustrated in the following figure.

Fig 10 Different Poverty Paths in Germany 2002-2010



The figure provides evidence enough for the index’s flexibility to directly react to changes in living conditions. The development of poverty has indeed been very diverse across the Bundeslaender, it highlights stories of success and failure that would be worth to be told, however go beyond the scope of this paper. But one question that is related to these trends shall be studied in the following: in face of the obvious diversity of poverty trends are there also indications for an overall regional trend? Figure 7 already demonstrated that in 2010 poverty levels in East Germany have been higher than in West Germany regardless of which poverty index was utilised. Are these differences stable or did they evolve over time?

Table 3 in the appendix compares the GCSPI as well as the respective decompositions according to poverty incidence, intensity and inequality across the Bundeslaender and over time. It seems indeed to indicate an overall regional trend. The maximum values for the overall index as well as all its three components increased over time and they originate in the vast majority of cases from Eastern Germany. The observation suggests that the picture drawn by figure 7 is not a coincidence but rather the result of a worrisome overall trend.

In order to shed further light on this first impression, the following figures provide poverty maps for Germany with regard to the AROPR, the GCSPI, and the SCSPI from 2002 to 2010.

Fig 11 German Poverty Maps according to At-Risk-Of-Poverty-Rate 2002-2010

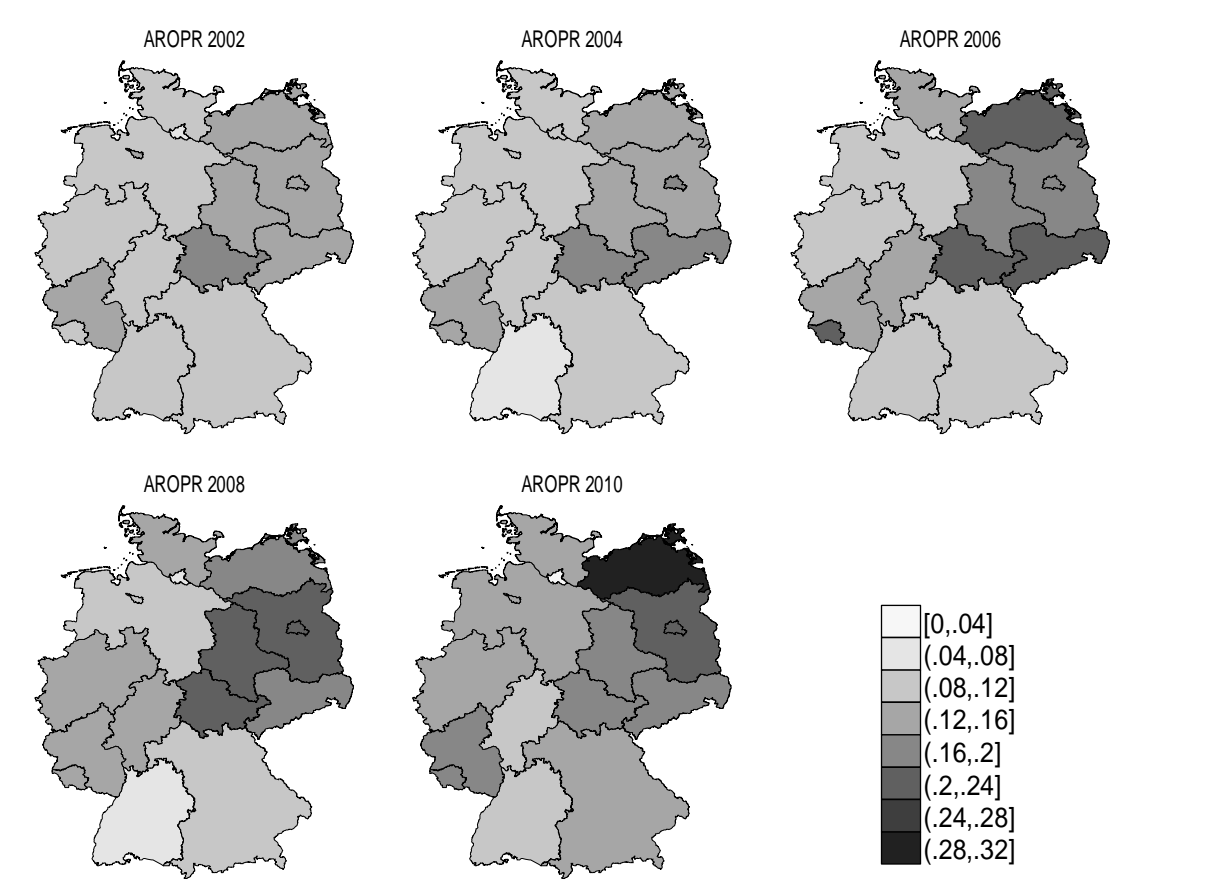


Fig 12 German Poverty Maps according to GCSPi 2002-2010

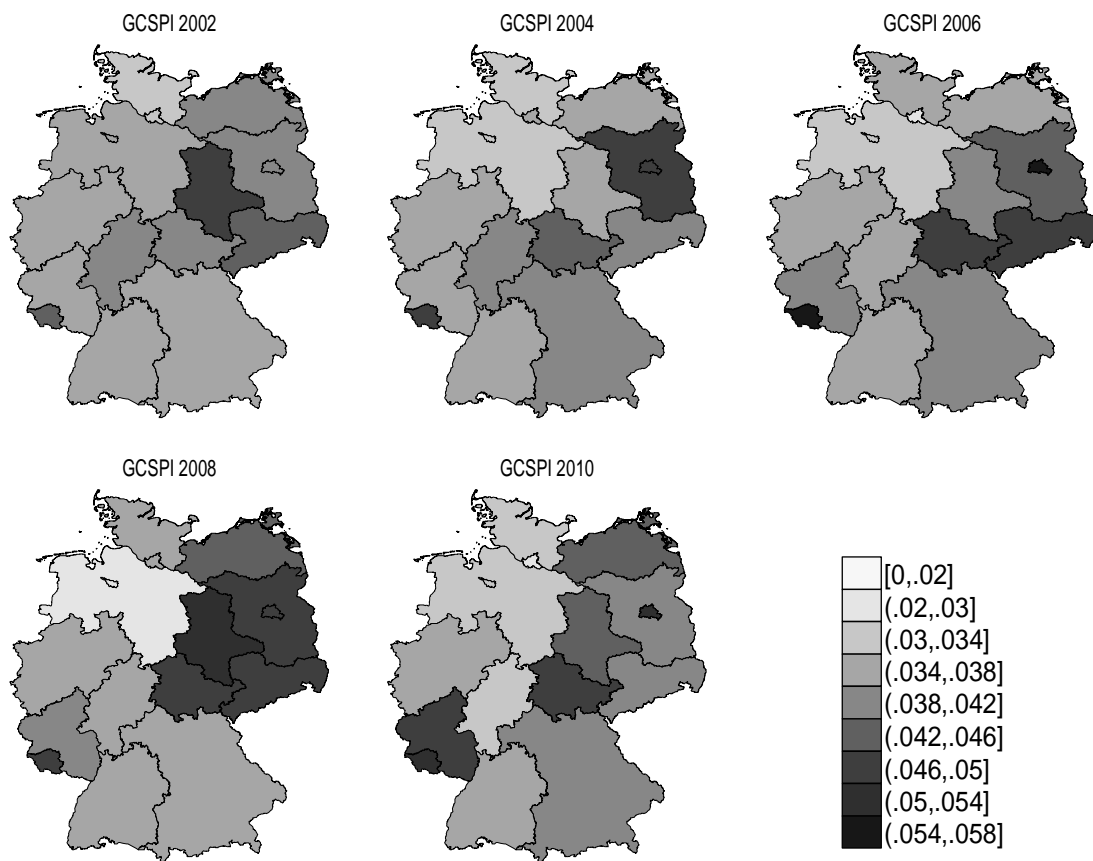
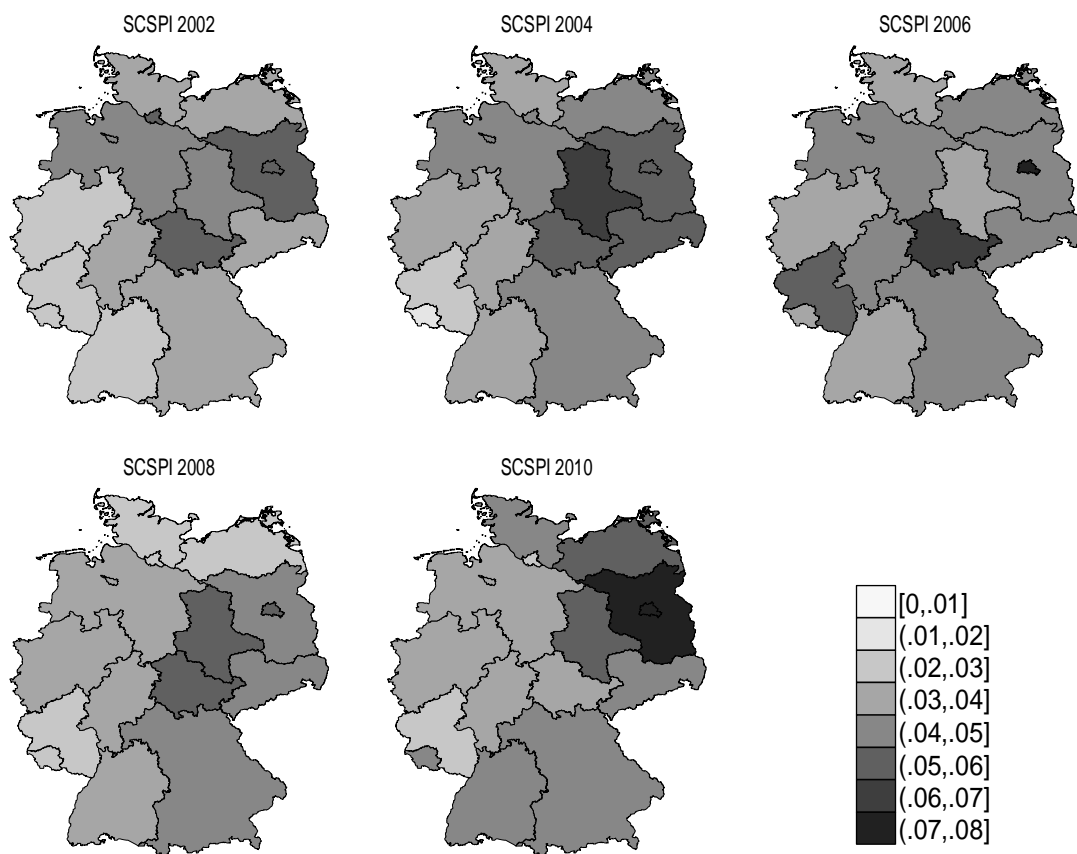


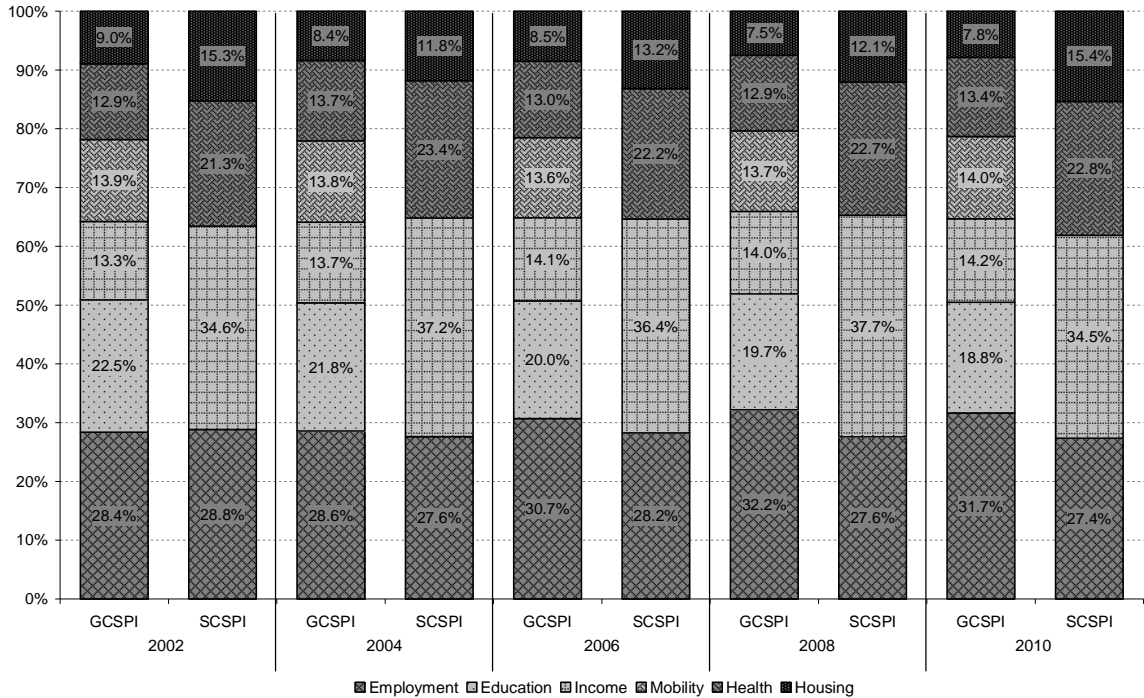
Fig 13 German Poverty Maps according to SCSPI 2002-2010



All poverty indices tell the same story: though there has only been a slight increase in overall poverty over time, a concentration process seems to have taken place that makes poverty more and more a problem of East Germany. However, there seems to be a small ray of hope: It seems as though in 2010 the worrisome trend weakened for the first time since 2002.

Considering the overall trend that the regional decomposition made visible, the first question that vies for attention is whether a similar overall trend can be detected with regard to dimensional decompositions. As has been pointed out before, the GCSPI as well as the SCSPI belong to the first class of additive poverty indices that satisfy the property of Factor Decomposability (FD). It is the fulfilment of that specific property that allows the decomposition of the indices according to poverty dimensions. Such decomposition is illustrated in the following figure for the GCSPI as well as the SCSPI across the Bundeslaender and over time.

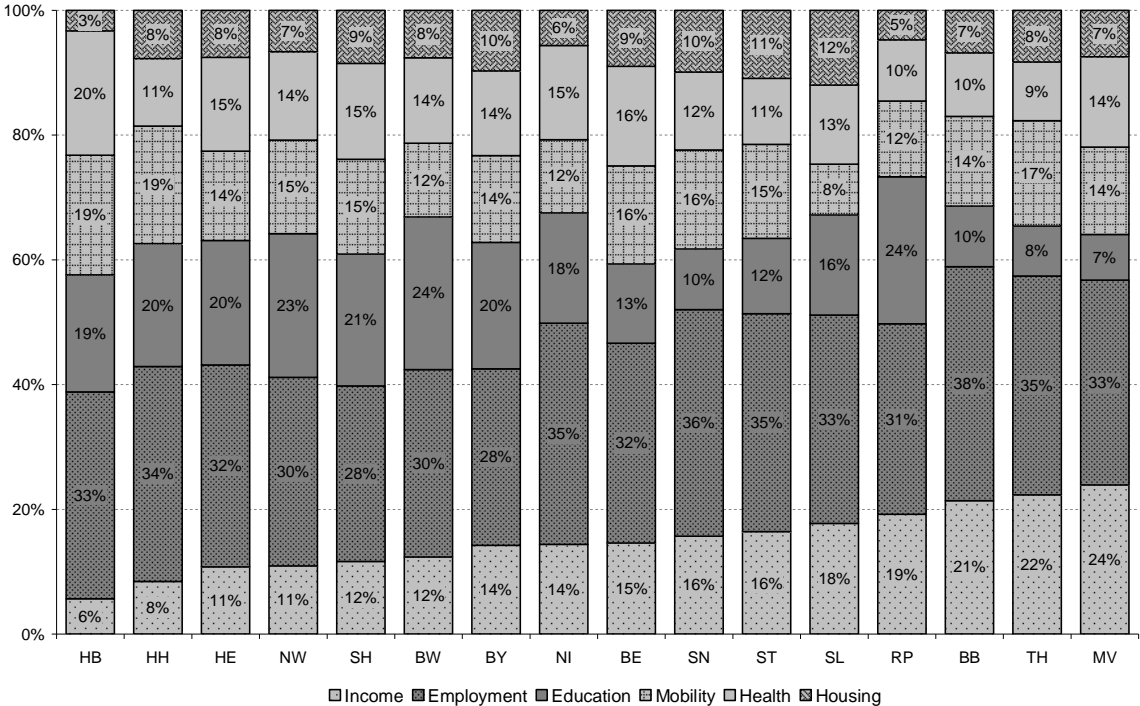
Fig 14 Development of Dimensional Decompositions 2002-2010



The high volatility of the SCSPI is also reflected in the dimensional decomposition. A clear indication for a trend in the contribution of the different dimensions does not exist. This is different in the case of the GCSPI. There seems to be a clear trend towards an increase in the

contribution of income and employment to overall poverty, whereas the contribution of education decreased continuously over time. These trends have special significance if they are associated with the decomposition according to regions and dimensions which is illustrated by the following figure for 2010.

Fig 15 Dimensional Decomposition of GCSPI Germany 2010



The figure seems to indicate two regional peculiarities. It seems that in Eastern Germany income deprivation is a stronger contributor to overall deprivation compared to Western Germany, whereas in Western Germany education seems to be the stronger contributor. This corresponds to the two different types of support programs of the European Social Funds in Germany (compare figure 16 in the Appendix). The Eastern Bundeslaender – with the exception of Berlin – belong to the ‘Convergence Regions’, i.e. regions that are characterised by weak economic performance. The objective of the respective support programs is to speed up GDP growth in those regions so that they are able to catch up with the rest of Germany. The Western Bundeslaender belong – without exception – to the ‘Competitiveness and Employment Regions’. The objective of the support programs in those regions is to promote life-long learning, training and to improve the reconciliation of work and family life.

If this regional peculiarity is associated with the trends in the dimensional decomposition it reveals two important sources for the pronounced drift apart in East and West German poverty levels as captured by the poverty maps: the declining significance of the contribution of educational deprivation, that has been the much stronger contributor to poverty in West Germany, combined with the increasing significance of the contribution of income deprivation that has been the much stronger contributor to poverty in East Germany.

By far not all stories have been told, the attempt would have gone far beyond the scope of this paper. However, the stories that have been told all get to the same conclusion: the operationalisation of the capability approach by means of the GCSPI seems to be very worthwhile.

Conclusion

With the publication of the second German ‘Poverty and Wealth’ the German government adopted the decision to define poverty in Germany on the basis of the capability approach.

However, so far the decision did not in any way impact on the way poverty is measured.

Germany still utilises the heavily disputed at-risk-of-poverty rate (AROPR) that is defined as the population share with a net equivalence income below 60% of the median of the population. However, the rate is highly disputed, in the public, of course, but even in the ruling coalition consensus is still a long way off.

This paper made a first suggestion to operationalise the capability approach by means of a multidimensional index, the German Correlation Sensitive Poverty Index (GCSPI). In an effort to thoroughly evaluate the appropriateness of the GCSPI to measure poverty in Germany, it is compared to two other indices, the aforementioned AROPR and the Subjective German Correlation Sensitive Poverty Index (SGCSPI) that is based on the self-evaluation of satisfaction of the respondents.

The analysis revealed a strong discrepancy in the identification of the deprived according to the three different indices. The poverty rates provided by the AROPR and the SCSPi for the

Western and the Eastern Bundeslaender seem to be an almost perfect reflection of each other. With only few exceptions, the SCSPI is highest in the Western Bundeslaender, followed by the GCSPI and, finally the AROPR. In the Eastern Bundeslaender, the trend is just the opposite, i.e. the AROPR is highest, followed by the GCSPI and, finally, the AROPR. Further analysis primarily reveals primarily one thing: that the weaknesses that have so clearly been elaborated with regard to the two theories of welfare economics that are represented by the AROPR and the SCSPI, i.e. the income approach and traditional welfarism, respectively, severely affect poverty measurement.

The SCSPI is very volatile and as a result struggles heavily to provide even the least indication of on overall regional, dimensional or time trend. In addition, it tends to be higher in more populous, urbanised areas and seems to be distorted in case the respondent suffers from bad health conditions.

The AROPR, on the other hand, seems to be more a measure of overall inequality, i.e. not only inequality of opportunity, in the society than anything else. The precariousness of this is revealed in the fact that the AROPR might decrease during a time in which the situation of the poor deteriorated, that is, when the situation of the poor worsens less than the situation of the wealthy.

The results all seem to point in one direction, i.e. that the operationalisation of the capability approach by means of the GCSPI seems to be very worthwhile. In addition, the empirical analysis offered a series of interesting trends. For once, there is the worrisome trend towards a concentration of poverty in Eastern Germany. There are also the very interesting results of the development of poverty rates in the different Bundeslaender over time that highlight stories of success and failure. Also, the differences in the dimensional decompositions, according to regions and over time, provide lots of material to study. It seems that further research in this area could provide valuable insight. In addition, direct capability-related questions will for the first time ever be available in the GSOEP in 2013.

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APPENDIX

FIGURES

Fig 2 Frequency Distribution Satisfaction with Health

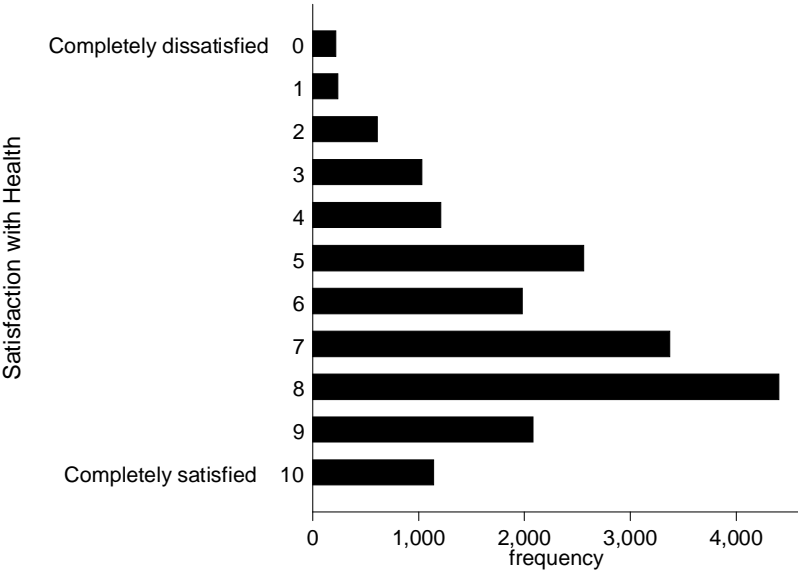


Fig 3 Frequency Distribution Satisfaction with Work

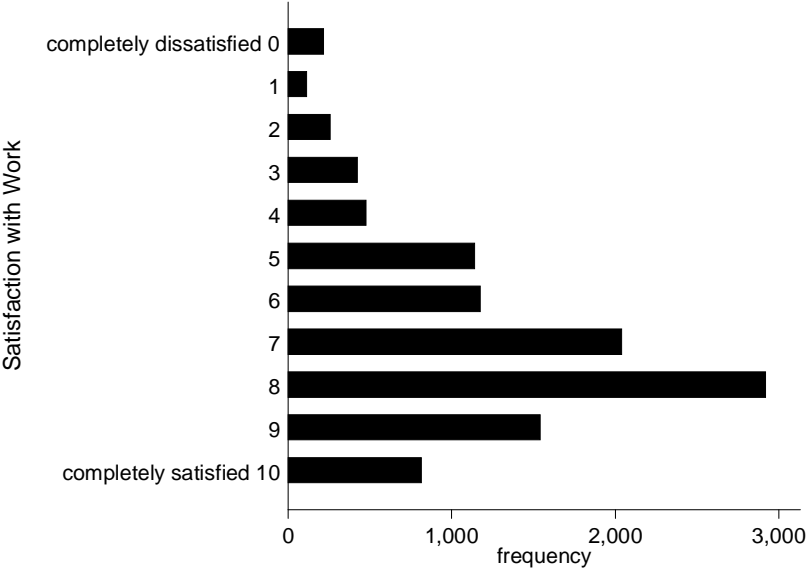


Fig 4 Frequency Distribution Satisfaction with Housing

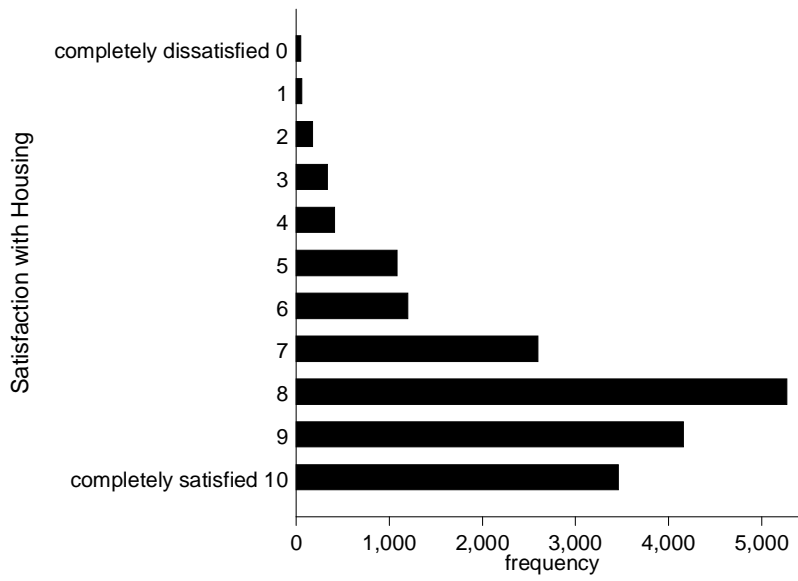


Fig 5 Frequency Distribution Satisfaction with Income

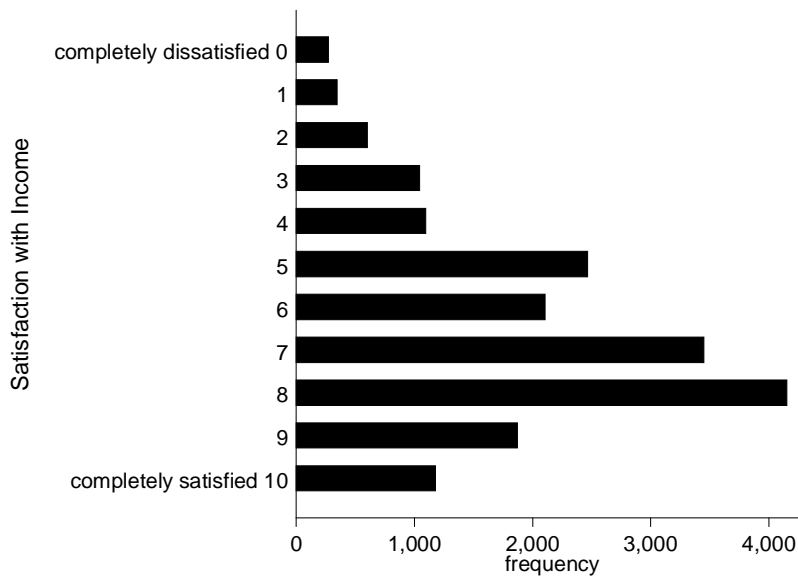


Fig 8 Proportion of over-indebted people in Germany 2012

Schuldneratlas 2012 nach Kreisen

Schuldneranteil in Prozent

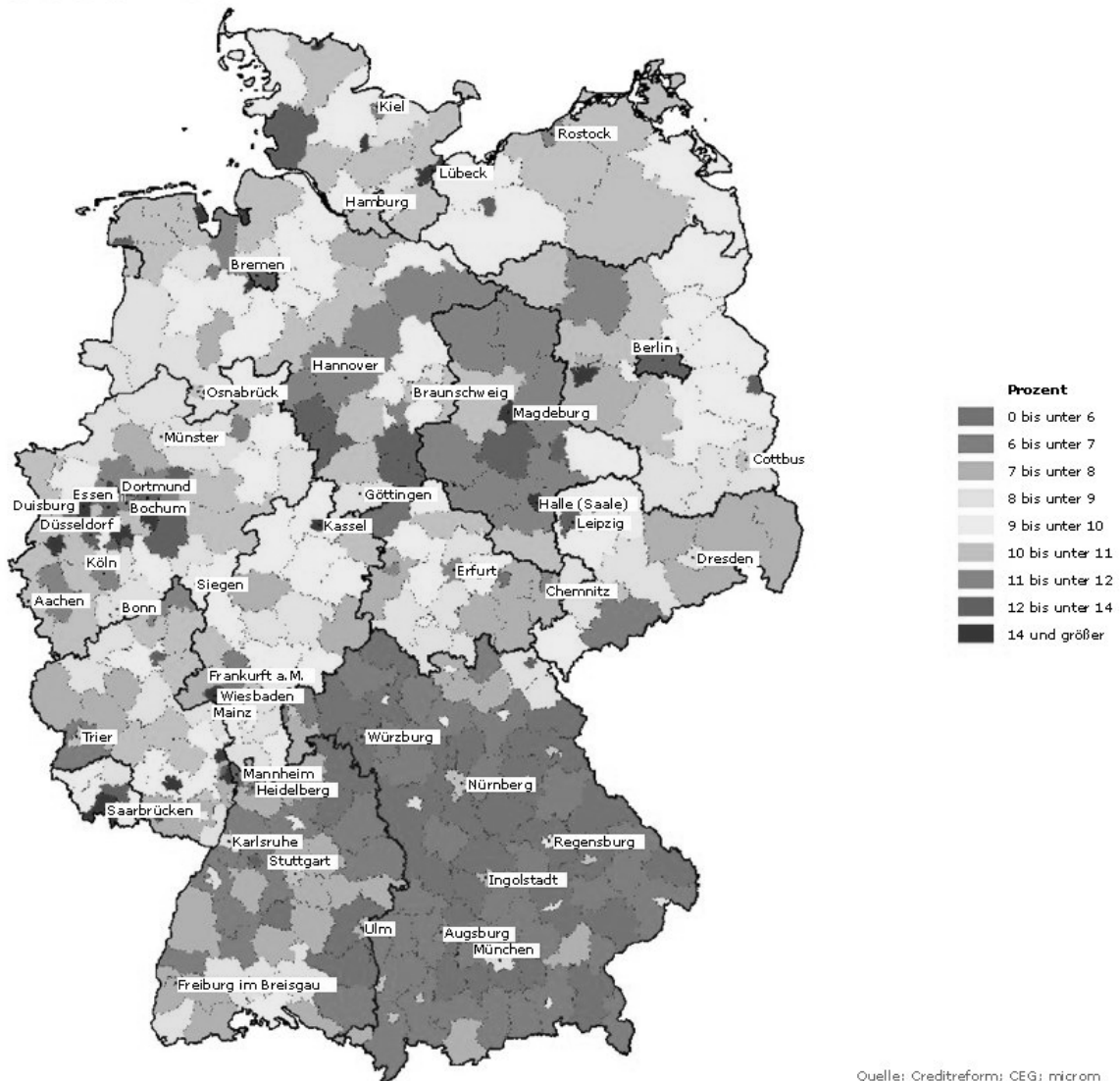


Fig 16 Assisted Areas of the European Social Fund in Germany (2007-2013)



Source: http://www.esf.de/portal/generator/1140/property=data/uebersichtskarte__de.pdf

TABLES

Tab 3 GCSPi Decomposition 2002-2010

Bundesländer	2002			2004			2006			2008			2010			
	Q	H	h	Q	H	h	Q	H	h	Q	H	h	Q	H	h	
Baden-Württemberg	0.038	0.090	0.205	0.083	0.088	0.205	0.185	0.087	0.200	0.168	0.036	0.096	0.203	0.087	0.096	0.203
Bavaria	0.034	0.088	0.199	0.170	0.041	0.17	0.172	0.039	0.197	0.184	0.036	0.099	0.207	0.040	0.119	0.213
Berlin	0.039	0.092	0.198	0.198	0.043	0.120	0.206	0.056	0.148	0.225	0.047	0.121	0.211	0.050	0.132	0.222
Brandenburg	0.040	0.106	0.201	0.174	0.046	0.121	0.208	0.045	0.134	0.209	0.046	0.143	0.218	0.042	0.134	0.205
Bremen	0.037	0.098	0.201	0.144	0.033	0.111	0.190	0.032	0.073	0.198	0.030	0.048	0.190	0.027	0.055	0.190
Hamburg	0.033	0.086	0.183	0.207	0.035	0.067	0.193	0.029	0.064	0.182	0.035	0.080	0.187	0.026	0.052	0.173
Hesse	0.040	0.098	0.208	0.176	0.039	0.096	0.211	0.038	0.091	0.209	0.035	0.089	0.197	0.032	0.075	0.195
Mecklenburg-W. Pomerania	0.042	0.099	0.202	0.210	0.035	0.079	0.184	0.036	0.079	0.191	0.045	0.166	0.216	0.043	0.137	0.212
Lower Saxony	0.034	0.083	0.198	0.169	0.031	0.065	0.191	0.033	0.090	0.203	0.030	0.070	0.191	0.031	0.066	0.193
North Rhine-Westphalia	0.036	0.086	0.199	0.187	0.039	0.101	0.209	0.036	0.079	0.201	0.037	0.098	0.203	0.035	0.092	0.201
Rhineland-Palatinate	0.037	0.081	0.204	0.178	0.037	0.091	0.206	0.041	0.118	0.219	0.040	0.114	0.221	0.048	0.143	0.227
Saarland	0.043	0.119	0.215	0.163	0.046	0.145	0.225	0.057	0.162	0.248	0.057	0.162	0.248	0.052	0.175	0.229
Saxony	0.044	0.123	0.205	0.180	0.042	0.118	0.205	0.046	0.122	0.212	0.046	0.126	0.220	0.042	0.105	0.208
Saxony-Anhalt	0.048	0.117	0.212	0.188	0.038	0.081	0.195	0.039	0.108	0.204	0.050	0.136	0.214	0.045	0.098	0.206
Schleswig-Holstein	0.031	0.082	0.189	0.188	0.032	0.073	0.198	0.034	0.072	0.204	0.036	0.077	0.205	0.031	0.060	0.182
Thuringia	0.040	0.098	0.199	0.190	0.044	0.102	0.210	0.049	0.146	0.220	0.049	0.157	0.224	0.047	0.132	0.219
All	0.038	0.093	0.201	0.181	0.038	0.098	0.206	0.039	0.097	0.207	0.038	0.102	0.206	0.038	0.100	0.205

Tab 4 AROPR Decompositions for the Bundeslaender 2002-2010

Bundeslaender	2002	2004	2006	2008	2010
Baden-Württemberg	0.094	0.078	0.081	0.080	0.088
Bavaria	0.117	0.111	0.120	0.099	0.137
Berlin	0.146	0.185	0.171	0.188	0.201
Brandenburg	0.142	0.160	0.190	0.220	0.218
Bremen	0.121	0.080	0.057	0.083	0.093
Hamburg	0.077	0.103	0.041	0.058	0.038
Hesse	0.120	0.117	0.121	0.129	0.117
Mecklenburg-W.Pomerania	0.141	0.134	0.232	0.199	0.311
Lower Saxony	0.107	0.109	0.109	0.107	0.127
North Rhine-Westphalia	0.119	0.096	0.119	0.126	0.123
Rhineland-Palatinate	0.131	0.123	0.150	0.134	0.163
Saarland	0.087	0.124	0.204	0.134	0.196
Saxony	0.160	0.165	0.205	0.176	0.179
Saxony-Anhalt	0.149	0.133	0.188	0.211	0.186
Schleswig-Holstein	0.087	0.112	0.129	0.135	0.133
Thuringia	0.181	0.171	0.224	0.217	0.194
All	0.120	0.115	0.131	0.128	0.138

Tab 5 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2002 (prevalence weights)

Bundeslaender	GCSPI	Severity				Contribution of Dimensions					
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Housing Conditions	Mobility	Income
Baden-Württemberg	0.038	8.6%	0.4%	0.205	0.183	12%	28%	26%	8%	13%	12%
Bavaria	0.034	8.8%	0.1%	0.199	0.170	13%	25%	25%	10%	14%	13%
Berlin	0.039	9.2%	0.0%	0.198	0.198	12%	12%	33%	11%	18%	14%
Brandenburg	0.040	10.6%	0.0%	0.201	0.174	13%	14%	33%	12%	13%	15%
Bremen	0.037	9.8%	0.0%	0.201	0.144	19%	21%	27%	5%	13%	15%
Hamburg	0.033	7.8%	0.8%	0.183	0.207	16%	21%	28%	11%	19%	6%
Hesse	0.040	9.5%	0.4%	0.208	0.176	14%	24%	27%	9%	12%	14%
Mecklenburg-W.Pomerania	0.042	8.9%	1.0%	0.202	0.210	15%	14%	29%	11%	16%	16%
Lower Saxony	0.034	8.1%	0.1%	0.198	0.169	14%	25%	30%	6%	14%	12%
North Rhine-Westphalia	0.036	8.2%	0.4%	0.199	0.187	12%	26%	27%	8%	14%	13%
Rhineland-Palatinate	0.037	7.9%	0.2%	0.204	0.178	14%	27%	27%	6%	13%	13%
Saarland	0.043	11.9%	0.0%	0.215	0.163	14%	26%	25%	7%	15%	12%
Saxony	0.044	11.7%	0.5%	0.205	0.180	11%	13%	33%	13%	14%	16%
Saxony-Anhalt	0.048	11.0%	0.7%	0.212	0.188	12%	14%	33%	12%	13%	15%
Schleswig-Holstein	0.031	8.2%	0.0%	0.189	0.188	10%	25%	32%	7%	12%	13%
Thuringia	0.040	9.6%	0.2%	0.199	0.190	12%	11%	31%	13%	17%	16%
All	0.038	9.0%	0.3%	0.201	0.181	13%	22%	28%	9%	14%	13%

Tab 6 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2004 (prevalence weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.038	8.3%	0.5%	0.205	0.185	13%	28%	25%	8%	13%	13%
Bavaria	0.041	11.3%	0.4%	0.216	0.172	13%	24%	27%	8%	14%	13%
Berlin	0.043	11.9%	0.0%	0.206	0.202	12%	11%	34%	11%	16%	17%
Brandenburg	0.046	11.9%	0.2%	0.208	0.206	13%	14%	31%	11%	14%	17%
Bremen	0.033	11.1%	0.0%	0.190	0.189	13%	22%	31%	8%	15%	11%
Hamburg	0.035	5.8%	0.9%	0.193	0.197	18%	17%	26%	8%	18%	12%
Hesse	0.039	9.6%	0.0%	0.211	0.175	14%	23%	27%	9%	14%	13%
Mecklenburg-W.Pomerania	0.035	7.3%	0.6%	0.184	0.201	12%	12%	37%	9%	14%	16%
Lower Saxony	0.031	6.5%	0.0%	0.191	0.173	16%	26%	26%	5%	13%	13%
North Rhine-Westphalia	0.039	9.9%	0.2%	0.209	0.178	15%	23%	28%	7%	13%	13%
Rhineland-Palatinate	0.037	8.7%	0.4%	0.206	0.172	14%	28%	25%	7%	12%	14%
Saarland	0.046	13.3%	1.1%	0.225	0.200	16%	24%	26%	10%	11%	13%
Saxony	0.042	11.7%	0.1%	0.205	0.169	12%	12%	35%	12%	13%	16%
Saxony-Anhalt	0.038	7.6%	0.5%	0.195	0.180	14%	15%	36%	11%	14%	11%
Schleswig-Holstein	0.032	7.0%	0.3%	0.198	0.164	12%	22%	32%	9%	14%	11%
Thuringia	0.044	9.9%	0.3%	0.210	0.165	10%	11%	35%	12%	16%	16%
All	0.038	9.5%	0.3%	0.206	0.180	14%	22%	29%	9%	14%	14%

Tab 7 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2006 (prevalence weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.036	8.6%	0.1%	0.200	0.168	13%	28%	28%	8%	12%	11%
Bavaria	0.039	9.4%	0.3%	0.214	0.184	13%	22%	28%	10%	13%	14%
Berlin	0.056	13.3%	1.5%	0.225	0.224	13%	12%	34%	8%	19%	15%
Brandenburg	0.045	13.1%	0.3%	0.209	0.208	13%	12%	36%	9%	9%	21%
Bremen	0.032	7.3%	0.0%	0.198	0.141	18%	29%	25%	6%	18%	5%
Hamburg	0.029	5.9%	0.5%	0.182	0.205	12%	16%	35%	11%	16%	10%
Hesse	0.038	8.8%	0.3%	0.209	0.166	13%	21%	32%	8%	15%	11%
Mecklenburg-W.Pomerania	0.036	7.9%	0.0%	0.191	0.166	12%	11%	37%	8%	16%	16%
Lower Saxony	0.033	8.6%	0.3%	0.203	0.168	13%	22%	31%	6%	12%	16%
North Rhine-Westphalia	0.036	7.5%	0.3%	0.201	0.173	14%	24%	29%	8%	15%	11%
Rhineland-Palatinate	0.041	11.7%	0.1%	0.219	0.145	12%	25%	29%	8%	10%	15%
Saarland	0.057	14.5%	1.6%	0.248	0.185	10%	19%	29%	14%	9%	19%
Saxony	0.046	11.5%	0.7%	0.212	0.190	12%	10%	32%	10%	16%	20%
Saxony-Anhalt	0.039	10.8%	0.0%	0.204	0.163	13%	10%	38%	9%	13%	17%
Schleswig-Holstein	0.034	7.2%	0.0%	0.204	0.144	16%	18%	31%	7%	15%	14%
Thuringia	0.049	14.3%	0.3%	0.220	0.180	11%	8%	34%	10%	15%	22%
All	0.039	9.4%	0.3%	0.207	0.177	13%	20%	31%	9%	14%	14%

Tab 8 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2008 (prevalence weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.036	9.5%	0.1%	0.203	0.168	11%	26%	30%	7%	13%	12%
Bavaria	0.036	9.8%	0.1%	0.207	0.152	13%	23%	30%	9%	13%	13%
Berlin	0.047	12.1%	0.0%	0.211	0.217	12%	13%	36%	8%	15%	15%
Brandenburg	0.046	14.2%	0.1%	0.218	0.190	11%	12%	34%	7%	14%	21%
Bremen	0.030	4.8%	0.0%	0.190	0.131	12%	21%	36%	11%	17%	4%
Hamburg	0.035	8.0%	0.0%	0.187	0.218	12%	20%	31%	11%	19%	7%
Hesse	0.035	8.9%	0.0%	0.197	0.181	14%	21%	35%	7%	14%	10%
Mecklenburg-W.Pomerania	0.045	16.5%	0.1%	0.216	0.178	11%	10%	38%	7%	14%	22%
Lower Saxony	0.030	6.9%	0.1%	0.191	0.165	15%	22%	34%	6%	12%	11%
North Rhine-Westphalia	0.037	9.7%	0.2%	0.203	0.178	14%	22%	31%	7%	13%	13%
Rhineland-Palatinate	0.040	11.2%	0.2%	0.221	0.168	11%	26%	32%	6%	12%	14%
Saarland	0.048	8.2%	1.9%	0.226	0.261	12%	22%	25%	9%	15%	17%
Saxony	0.047	11.6%	1.0%	0.220	0.188	13%	9%	36%	9%	15%	18%
Saxony-Anhalt	0.050	13.2%	0.3%	0.214	0.229	12%	12%	34%	8%	14%	20%
Schleswig-Holstein	0.036	7.1%	0.6%	0.205	0.194	14%	20%	29%	6%	15%	16%
Thuringia	0.049	15.4%	0.3%	0.224	0.173	11%	8%	34%	9%	16%	22%
All	0.038	10.0%	0.2%	0.206	0.180	13%	20%	32%	8%	14%	14%

Tab 9 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2010 (prevalence weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Housing Conditions	Mobility	Income
Baden-Württemberg	0.037	9.3%	0.3%	0.203	0.181	14%	24%	30%	8%	12%	12%
Bavaria	0.040	11.9%	0.1%	0.213	0.174	14%	20%	28%	10%	14%	14%
Berlin	0.050	12.5%	0.6%	0.222	0.204	16%	13%	32%	9%	16%	15%
Brandenburg	0.042	12.9%	0.5%	0.205	0.200	10%	10%	38%	7%	14%	21%
Bremen	0.027	5.5%	0.0%	0.190	0.107	20%	19%	33%	3%	19%	6%
Hamburg	0.026	5.2%	0.0%	0.173	0.210	11%	20%	34%	8%	19%	8%
Hesse	0.032	7.4%	0.0%	0.195	0.172	15%	20%	32%	8%	14%	11%
Mecklenburg-W.Pomerania	0.043	13.6%	0.1%	0.212	0.143	14%	7%	33%	7%	14%	24%
Lower Saxony	0.031	6.4%	0.2%	0.193	0.174	15%	18%	35%	6%	12%	14%
North Rhine-Westphalia	0.035	9.0%	0.2%	0.201	0.169	14%	23%	30%	7%	15%	11%
Rhineland-Palatinate	0.048	14.3%	0.0%	0.227	0.197	10%	24%	31%	5%	12%	19%
Saarland	0.052	16.8%	0.7%	0.229	0.235	13%	16%	33%	12%	8%	18%
Saxony	0.042	10.1%	0.4%	0.208	0.192	12%	10%	36%	10%	16%	16%
Saxony-Anhalt	0.045	8.9%	0.9%	0.206	0.240	11%	12%	35%	11%	15%	16%
Schleswig-Holstein	0.031	5.5%	0.5%	0.182	0.225	15%	21%	28%	9%	15%	12%
Thuringia	0.047	13.0%	0.2%	0.219	0.192	9%	8%	35%	8%	17%	22%
All	0.038	9.8%	0.2%	0.205	0.185	13%	19%	32%	8%	14%	14%

Tab 10 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2002 (equal weights)

Bundeslaender	GCSPI	Severity				Contribution of Dimensions					
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.039	12.0%	0.4%	0.208	0.179	12%	28%	26%	8%	14%	12%
Bavaria	0.035	11.5%	0.3%	0.202	0.166	14%	25%	24%	10%	14%	13%
Berlin	0.041	10.8%	0.1%	0.202	0.194	13%	12%	32%	12%	18%	14%
Brandenburg	0.042	13.3%	0.0%	0.206	0.167	13%	14%	33%	12%	14%	15%
Bremen	0.038	12.1%	0.0%	0.205	0.138	19%	20%	27%	5%	14%	15%
Hamburg	0.034	8.7%	0.8%	0.187	0.200	16%	20%	28%	12%	19%	6%
Hesse	0.041	13.7%	0.4%	0.212	0.173	14%	24%	26%	9%	13%	13%
Mecklenburg-W.Pomerania	0.044	11.8%	1.0%	0.206	0.202	15%	14%	29%	12%	16%	15%
Lower Saxony	0.035	11.1%	0.1%	0.201	0.165	15%	24%	29%	7%	14%	12%
North Rhine-Westphalia	0.037	10.9%	0.4%	0.203	0.181	13%	25%	26%	8%	15%	13%
Rhineland-Palatinate	0.038	13.0%	0.2%	0.207	0.175	15%	26%	26%	6%	14%	13%
Saarland	0.044	16.2%	0.0%	0.218	0.160	15%	25%	25%	7%	16%	12%
Saxony	0.046	13.6%	0.5%	0.209	0.175	12%	13%	33%	13%	14%	15%
Saxony-Anhalt	0.050	13.8%	0.7%	0.217	0.181	13%	14%	32%	13%	14%	15%
Schleswig-Holstein	0.032	10.1%	0.0%	0.191	0.184	10%	25%	32%	8%	13%	13%
Thuringia	0.042	12.5%	0.2%	0.203	0.184	13%	11%	30%	13%	18%	15%
All	0.039	11.9%	0.3%	0.205	0.177	13%	22%	28%	9%	15%	13%

Tab 11 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2004 (equal weights)

Bundeslaender	GCSPI	Severity				Contribution of Dimensions					
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.039	11.5%	0.6%	0.209	0.182	14%	28%	24%	8%	14%	13%
Bavaria	0.041	14.2%	0.5%	0.219	0.168	13%	24%	27%	8%	15%	13%
Berlin	0.045	13.9%	0.0%	0.210	0.197	13%	11%	33%	11%	16%	17%
Brandenburg	0.048	13.9%	0.5%	0.212	0.198	14%	14%	30%	11%	15%	16%
Bremen	0.034	13.6%	0.0%	0.194	0.182	13%	22%	30%	8%	16%	11%
Hamburg	0.035	6.2%	0.9%	0.195	0.194	19%	17%	26%	9%	17%	12%
Hesse	0.040	13.7%	0.0%	0.214	0.173	14%	23%	26%	9%	15%	13%
Mecklenburg-W.Pomerania	0.036	8.8%	0.6%	0.188	0.195	12%	12%	36%	9%	15%	15%
Lower Saxony	0.032	9.8%	0.0%	0.194	0.168	16%	26%	26%	6%	14%	12%
North Rhine-Westphalia	0.040	12.8%	0.3%	0.213	0.174	16%	23%	27%	7%	14%	13%
Rhineland-Palatinate	0.038	12.1%	0.4%	0.209	0.169	14%	28%	25%	7%	12%	14%
Saarland	0.047	14.7%	1.1%	0.229	0.195	16%	24%	26%	10%	11%	13%
Saxony	0.043	14.6%	0.1%	0.208	0.164	12%	12%	34%	12%	13%	16%
Saxony-Anhalt	0.040	10.1%	0.5%	0.199	0.175	14%	15%	35%	11%	14%	11%
Schleswig-Holstein	0.032	9.3%	0.3%	0.201	0.159	12%	22%	32%	9%	14%	11%
Thuringia	0.045	12.3%	0.3%	0.213	0.159	10%	11%	34%	13%	16%	16%
All	0.040	12.4%	0.3%	0.209	0.176	14%	21%	28%	9%	14%	13%

Tab 12 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2006 (equal weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.037	12.4%	0.1%	0.203	0.164	13%	27%	28%	9%	12%	11%
Bavaria	0.040	12.3%	0.4%	0.217	0.181	13%	22%	28%	10%	13%	14%
Berlin	0.058	15.9%	1.5%	0.229	0.218	14%	12%	33%	8%	19%	14%
Brandenburg	0.047	16.4%	0.3%	0.212	0.201	14%	12%	35%	9%	10%	21%
Bremen	0.033	9.6%	0.0%	0.200	0.139	18%	28%	25%	6%	19%	5%
Hamburg	0.029	6.5%	0.5%	0.184	0.202	12%	16%	34%	11%	16%	9%
Hesse	0.039	12.6%	0.3%	0.213	0.163	13%	21%	31%	8%	16%	11%
Mecklenburg-W.Pomerania	0.037	13.1%	0.0%	0.195	0.159	13%	11%	37%	8%	16%	16%
Lower Saxony	0.034	11.3%	0.3%	0.206	0.165	14%	22%	31%	6%	12%	16%
North Rhine-Westphalia	0.037	11.0%	0.3%	0.204	0.168	14%	24%	28%	8%	15%	11%
Rhineland-Palatinate	0.042	15.3%	0.1%	0.222	0.142	13%	25%	29%	8%	10%	15%
Saarland	0.058	15.0%	2.9%	0.252	0.180	10%	19%	28%	15%	10%	18%
Saxony	0.047	13.3%	0.7%	0.216	0.185	12%	10%	32%	11%	17%	19%
Saxony-Anhalt	0.041	13.1%	0.0%	0.208	0.157	13%	10%	37%	10%	14%	16%
Schleswig-Holstein	0.035	12.8%	0.0%	0.208	0.140	16%	18%	30%	7%	15%	14%
Thuringia	0.050	17.6%	0.3%	0.224	0.174	11%	8%	33%	10%	16%	21%
All	0.040	12.6%	0.4%	0.211	0.173	13%	20%	30%	9%	14%	14%

Tab 12 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2008 (equal weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.037	12.8%	0.1%	0.206	0.165	12%	26%	30%	7%	13%	12%
Bavaria	0.037	12.4%	0.2%	0.210	0.149	14%	22%	29%	9%	13%	12%
Berlin	0.048	14.0%	0.7%	0.215	0.209	13%	13%	35%	8%	15%	15%
Brandenburg	0.048	15.1%	0.5%	0.222	0.185	12%	12%	34%	7%	14%	21%
Bremen	0.030	4.8%	0.0%	0.192	0.126	12%	21%	35%	11%	18%	4%
Hamburg	0.035	8.3%	0.0%	0.189	0.217	12%	20%	30%	12%	18%	7%
Hesse	0.036	11.3%	0.0%	0.200	0.178	14%	21%	34%	7%	14%	10%
Mecklenburg-W.Pomerania	0.045	19.5%	0.1%	0.219	0.171	11%	10%	37%	7%	14%	21%
Lower Saxony	0.031	9.4%	0.1%	0.195	0.161	15%	22%	33%	6%	13%	11%
North Rhine-Westphalia	0.038	12.5%	0.2%	0.207	0.174	15%	22%	30%	7%	14%	12%
Rhineland-Palatinate	0.041	14.4%	0.2%	0.225	0.164	11%	26%	31%	6%	12%	14%
Saarland	0.048	10.0%	1.9%	0.229	0.254	13%	22%	25%	9%	15%	17%
Saxony	0.049	13.4%	1.0%	0.224	0.184	14%	9%	35%	10%	15%	17%
Saxony-Anhalt	0.051	16.7%	0.3%	0.218	0.222	12%	12%	34%	9%	14%	19%
Schleswig-Holstein	0.036	10.6%	0.6%	0.208	0.189	15%	19%	29%	7%	15%	16%
Thuringia	0.050	18.4%	0.3%	0.228	0.168	12%	8%	33%	9%	16%	22%
All	0.039	12.6%	0.2%	0.209	0.176	13%	20%	32%	8%	14%	14%

Tab 14 GCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2010 (equal weights)

Bundeslaender	GCSPI	Severity		Contribution of Dimensions							
		Middle	High	Intensity	Inequality	Health	Education	Employment Conditions	Living Conditions	Mobility	Income
Baden-Württemberg	0.038	11.6%	0.3%	0.207	0.177	14%	24%	29%	8%	12%	12%
Bavaria	0.041	13.6%	0.3%	0.216	0.169	14%	20%	28%	10%	14%	14%
Berlin	0.052	16.4%	0.6%	0.227	0.199	16%	13%	31%	9%	16%	14%
Brandenburg	0.043	14.5%	0.5%	0.208	0.191	11%	10%	37%	7%	15%	21%
Bremen	0.028	8.6%	0.0%	0.193	0.105	21%	18%	32%	3%	20%	6%
Hamburg	0.027	6.6%	0.0%	0.175	0.209	12%	19%	34%	8%	19%	8%
Hesse	0.033	9.0%	0.1%	0.199	0.170	16%	20%	32%	8%	15%	11%
Mecklenburg-W.Pomerania	0.045	16.1%	0.1%	0.217	0.138	15%	7%	32%	8%	15%	23%
Lower Saxony	0.031	7.7%	0.2%	0.196	0.169	15%	17%	35%	6%	12%	14%
North Rhine-Westphalia	0.036	11.4%	0.3%	0.204	0.165	15%	23%	30%	7%	15%	11%
Rhineland-Palatinate	0.049	16.0%	0.1%	0.230	0.193	10%	23%	30%	5%	13%	19%
Saarland	0.053	19.6%	0.7%	0.231	0.230	13%	16%	33%	12%	9%	18%
Saxony	0.043	11.9%	0.4%	0.212	0.186	13%	10%	35%	10%	16%	15%
Saxony-Anhalt	0.047	10.5%	0.9%	0.210	0.235	11%	12%	34%	11%	15%	16%
Schleswig-Holstein	0.032	6.9%	0.5%	0.185	0.218	16%	21%	28%	9%	16%	11%
Thuringia	0.048	15.7%	0.2%	0.222	0.185	10%	8%	34%	9%	17%	22%
All	0.039	11.8%	0.3%	0.208	0.180	14%	19%	31%	8%	15%	14%

Tab 15 SCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2002

Bundeslaender	SCSPI	Severity		Contribution of Dimensions					
		Middle	High	Intensity	Inequality	Health	Employment Conditions	Living Conditions	Income
Baden-Württemberg	0.028	5.7%	0.9%	0.345	0.090	22%	29%	13%	35%
Bavaria	0.033	4.0%	2.3%	0.366	0.130	21%	27%	21%	31%
Berlin	0.055	8.5%	3.1%	0.386	0.132	20%	28%	15%	37%
Brandenburg	0.052	9.2%	2.1%	0.346	0.104	15%	26%	19%	40%
Bremen	0.038	4.0%	3.3%	0.368	0.125	21%	29%	15%	36%
Hamburg	0.050	10.3%	2.6%	0.388	0.090	24%	29%	15%	32%
Hesse	0.038	4.3%	2.5%	0.363	0.150	21%	29%	19%	31%
Mecklenburg-W.Pomerania	0.039	5.1%	2.3%	0.347	0.126	18%	31%	10%	41%
Lower Saxony	0.046	7.9%	2.4%	0.371	0.112	25%	29%	11%	36%
North Rhine-Westphalia	0.028	3.0%	1.7%	0.339	0.137	23%	30%	16%	32%
Rhineland-Palatinate	0.023	3.1%	1.5%	0.344	0.111	30%	23%	13%	34%
Saarland	0.024	2.3%	1.0%	0.326	0.163	20%	36%	15%	29%
Saxony	0.038	8.8%	0.9%	0.351	0.082	11%	29%	14%	46%
Saxony-Anhalt	0.041	7.0%	2.1%	0.349	0.099	19%	23%	15%	43%
Schleswig-Holstein	0.038	5.0%	3.3%	0.404	0.116	26%	32%	14%	28%
Thuringia	0.052	9.7%	2.7%	0.377	0.104	17%	36%	8%	38%
All	0.035	5.4%	2.0%	0.358	0.119	21%	29%	15%	35%

Tab 16 SCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2004

Bundeslaender	SCSPI	Severity				Contribution of Dimensions			
		Middle	High	Intensity	Inequality	Health	Employment Conditions	Living Conditions	Income
Baden-Württemberg	0.040	4.8%	2.5%	0.356	0.136	26%	25%	15%	35%
Bavaria	0.044	5.3%	3.3%	0.378	0.135	25%	25%	15%	35%
Berlin	0.048	9.9%	2.6%	0.387	0.091	22%	28%	6%	43%
Brandenburg	0.059	10.0%	3.3%	0.358	0.102	19%	29%	3%	48%
Bremen	0.040	6.1%	3.3%	0.410	0.105	17%	35%	2%	46%
Hamburg	0.047	1.7%	5.0%	0.345	0.147	20%	24%	21%	36%
Hesse	0.033	6.3%	1.2%	0.338	0.089	19%	35%	9%	37%
Mecklenburg-W.Pomerania	0.045	10.5%	0.8%	0.341	0.076	15%	26%	5%	54%
Lower Saxony	0.042	7.0%	2.3%	0.363	0.108	25%	30%	9%	36%
North Rhine-Westphalia	0.036	4.1%	2.2%	0.351	0.143	25%	26%	16%	33%
Rhineland-Palatinate	0.024	3.4%	0.8%	0.310	0.094	24%	32%	9%	35%
Saarland	0.016	3.0%	0.2%	0.306	0.065	31%	23%	2%	44%
Saxony	0.060	8.0%	4.2%	0.392	0.135	25%	29%	8%	38%
Saxony-Anhalt	0.065	9.2%	4.1%	0.402	0.137	22%	22%	14%	42%
Schleswig-Holstein	0.034	4.0%	2.7%	0.366	0.122	24%	29%	9%	38%
Thuringia	0.052	8.6%	2.4%	0.344	0.105	15%	35%	10%	41%
All	0.041	5.7%	2.5%	0.360	0.125	23%	28%	12%	37%

Tab 17 SCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2006

Bundeslaender	SCSPI	Severity				Contribution of Dimensions			
		Middle	High	Intensity	Inequality	Health	Employment Conditions	Living Conditions	Income
Baden-Württemberg	0.036	5.0%	1.7%	0.344	0.128	23%	26%	14%	37%
Bavaria	0.041	5.6%	2.5%	0.355	0.123	23%	26%	15%	36%
Berlin	0.070	7.9%	6.0%	0.403	0.134	25%	30%	10%	35%
Brandenburg	0.045	10.4%	0.9%	0.342	0.077	20%	22%	12%	46%
Bremen	0.049	8.9%	4.0%	0.455	0.081	32%	38%	0%	30%
Hamburg	0.032	1.2%	3.3%	0.390	0.180	17%	23%	21%	39%
Hesse	0.042	6.0%	2.3%	0.355	0.128	21%	33%	14%	32%
Mecklenburg-W.Pomerania	0.041	7.7%	1.5%	0.341	0.094	20%	15%	12%	52%
Lower Saxony	0.048	8.8%	2.7%	0.379	0.103	24%	31%	12%	33%
North Rhine-Westphalia	0.032	4.2%	1.7%	0.343	0.120	23%	29%	14%	34%
Rhineland-Palatinate	0.057	6.3%	5.6%	0.442	0.121	20%	28%	18%	35%
Saarland	0.039	5.6%	2.0%	0.333	0.102	25%	35%	4%	36%
Saxony	0.041	5.2%	2.9%	0.360	0.121	17%	29%	10%	44%
Saxony-Anhalt	0.035	4.6%	1.1%	0.300	0.078	20%	26%	6%	48%
Schleswig-Holstein	0.032	4.3%	1.5%	0.330	0.117	22%	28%	13%	37%
Thuringia	0.062	9.0%	3.9%	0.380	0.127	17%	28%	12%	42%
All	0.041	5.8%	2.5%	0.358	0.122	22%	28%	13%	36%

Tab 18 SCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2008

Bundeslaender	SCSPI	Severity				Contribution of Dimensions			
		Middle	High	Intensity	Inequality	Health	Employment Conditions	Living Conditions	Income
Baden-Württemberg	0.033	5.6%	1.6%	0.344	0.098	21%	29%	8%	42%
Bavaria	0.042	6.8%	2.5%	0.373	0.113	24%	27%	14%	35%
Berlin	0.055	7.9%	3.2%	0.377	0.135	25%	26%	12%	37%
Brandenburg	0.041	8.9%	1.4%	0.357	0.085	19%	21%	12%	49%
Bremen	0.017	2.3%	0.0%	0.278	0.041	17%	55%	0%	28%
Hamburg	0.030	5.3%	1.9%	0.386	0.099	18%	35%	11%	35%
Hesse	0.039	6.4%	2.0%	0.347	0.101	23%	28%	13%	36%
Mecklenburg-W.Pomerania	0.030	4.4%	0.9%	0.306	0.079	17%	25%	1%	57%
Lower Saxony	0.037	5.6%	2.2%	0.370	0.121	23%	28%	14%	34%
North Rhine-Westphalia	0.034	4.4%	2.1%	0.355	0.128	26%	26%	15%	32%
Rhineland-Palatinate	0.029	5.0%	1.3%	0.382	0.126	22%	26%	19%	34%
Saarland	0.028	5.2%	0.9%	0.329	0.085	21%	20%	12%	46%
Saxony	0.041	8.4%	1.5%	0.359	0.092	17%	30%	8%	45%
Saxony-Anhalt	0.057	11.6%	2.6%	0.400	0.106	18%	29%	7%	46%
Schleswig-Holstein	0.030	5.8%	1.1%	0.345	0.090	25%	28%	3%	45%
Thuringia	0.054	7.2%	3.0%	0.363	0.141	19%	28%	11%	42%
All	0.038	6.1%	2.0%	0.359	0.114	23%	28%	12%	38%

Tab 19 SCSPI, Poverty Severity and Factor Decompositions for the Bundeslaender 2010

Bundeslaender	SCSPI	Severity				Contribution of Dimensions			
		Middle	High	Intensity	Inequality	Health	Employment Conditions	Living Conditions	Income
Baden-Württemberg	0.043	7.9%	2.0%	0.364	0.106	23%	28%	14%	36%
Bavaria	0.043	6.8%	2.6%	0.367	0.112	18%	30%	17%	35%
Berlin	0.068	7.3%	5.6%	0.428	0.149	25%	25%	18%	32%
Brandenburg	0.073	12.1%	5.4%	0.419	0.103	28%	22%	16%	34%
Bremen	0.021	1.9%	0.0%	0.268	0.029	33%	29%	2%	35%
Hamburg	0.030	6.6%	0.1%	0.310	0.061	14%	30%	11%	44%
Hesse	0.036	4.3%	2.6%	0.365	0.127	23%	30%	16%	31%
Mecklenburg-W.Pomerania	0.050	3.2%	5.2%	0.373	0.141	27%	29%	5%	39%
Lower Saxony	0.038	8.7%	0.9%	0.358	0.091	23%	24%	15%	38%
North Rhine-Westphalia	0.037	5.9%	2.2%	0.381	0.117	24%	28%	17%	30%
Rhineland-Palatinate	0.028	4.4%	1.7%	0.371	0.117	29%	29%	18%	24%
Saarland	0.047	10.6%	1.8%	0.371	0.084	10%	20%	22%	48%
Saxony	0.045	5.6%	2.1%	0.341	0.141	22%	23%	12%	43%
Saxony-Anhalt	0.053	4.3%	4.2%	0.376	0.166	29%	25%	13%	33%
Schleswig-Holstein	0.044	1.1%	4.4%	0.393	0.206	26%	30%	15%	30%
Thuringia	0.036	6.7%	0.4%	0.312	0.082	13%	32%	10%	46%
All	0.042	6.4%	2.5%	0.369	0.121	23%	27%	15%	35%