SOCIETAL DEVELOPMENT, SOCIAL STRATIFICATION AND POWER- AND ACHIEVEMENT-VALUES

Inglehart’s Scarcity Hypothesis and the Theory of the Social Production Functions in the Comparative Study of Values

Dennis Köthemann, Department of Sociology, School of Human and Social Sciences, University of Wuppertal, Germany

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1. Introduction

Power- and achievement-values can be a crucial factor in motivating people striving for a higher status and also in socially legitimating status differences (Parsons, 1952; Young, 1994). Furthermore, power- and achievement-values can play an important role for the stability of societies. Stabilising mechanisms derive from shared beliefs and institutionalised values that are transmitted by generations (Durkheim, 1933 [1893], 1974 [1898]; Parsons, 1937, 1952). Instabilities arise, if many people adhere to power and achievement but the societal opportunities keep a high share of people from reaching these goals. Then many people probably try to catch social positions provided with power over resources and show socially recognized achievement by illegal means to reach their strongly adhered goals power and achievement (Konty, 2005; Merton, 1938; Messner and Rosenfeld, 2007 [1994]). Thus, power- and achievement-values have highly social relevance. However, there is a lack of research on social factors determining the priority of the mentioned power- and achievement-values including both societal and individual determinants. The present article focuses on two main factors: societal development and social stratification. Both can be shown as important determinants influencing the priority of power- and achievement-values (Inglehart, 1997; Inglehart and Welzel, 2005; Köthemann, 2014).

This study contributes to the mentioned research in different manners: First, research on values often is not very careful in the distinction between different levels of analysis although the necessity has been outlined in several contributions to theoretical thinking in sociology (Coleman, 1990; Haller, 2002: 149-52). That is why this article comes from the position of methodological individualism (Coleman, 1990) - which seldom explicitly is applied in the comparative study of values – and highlights the different levels of analysis and their assumed interrelations. By taking the mentioned multilevel perspective it becomes obvious that there is no study examining societal
factors (between societies) and social structural factors (within societies) influencing power- and achievement-values simultaneously which is a gap that is filled by the present paper.

Second, by putting together the mechanisms proposed at both levels congruences and incongruences are made visible. The social production functions here are suggested as a framework that can integrate different levels of analyses and provide a congruent multilevel explanation.

Third, research has shown that values in different countries can differ in their meaning; implying they are not comparable any more (Davidov, 2010; Davidov et al., 2012). Another aspect refers to the comparability of values across levels (Fischer et al., 2010; Haller, 2002; Hofstede, 2001 [1980]). In other words, the question is, if power- and achievement-values are similar across the societal level and the individual level. To account for the mentioned comparability both across countries and across levels, this study applies the methodology of two-level confirmatory factor analysis, which seldom was used before (Hox, 2010; Muthén, 1989, 1994).

2. Power- and Achievement-Values

The first issue of this article is how power- and achievement-values are conceptualised. There are two very prominent and influential ideas in the social sciences: Inglehart’s theory of differences in the importance of values in modern societies (Inglehart, 1997; Inglehart and Welzel, 2005) and Schwartz’s Theory of Basic Humans Values (Schwartz, 1994, 2005). The strength of Inglehart’s theory can be seen in the elaboration of the relationship between values and external variables whereas the conception of values themselves is weak. In contrast, Schwartz has a very rich conception and measurement of values (Beckers et al., 2012; Datler et al., 2013). That is why in this study values are conceptualised based on Schwartz’s Theory of Basic
Human Values.¹ In terms of Schwartz’s concept, values basically are defined ‘as
desirable transsituational goals, varying in importance, that serve as guiding principles
in the life of a person or other social entity’ (Schwartz, 1994: 21). More specifically,
their crucial content aspects distinguish different types of values: the motivational goals
they express as, for instance, power- and achievement in the present article. In terms of
Schwartz’s theory, power-values refer to control over people and resources and
achievement-values refer to personal success through demonstrating competence
according to social standards. Power- and achievement-values are assumed to share a
large amount of their motivational components that at a more general level can be
characterised as social superiority and esteem (Schwartz, 1994, 2005). Although it
would be very interesting to analyse power- and achievement-values separately Davidov
and colleagues (2010: 178; 2008: 431) showed that with available survey data and the
limited number of indicators power- and achievement-value priorities cannot be
disentangled empirically. Given this empirical limitation the present study analyses
power- and achievement-values together in one factor justified by the fact that both
share social superiority and esteem as a common motivational component.

3. Societal Development and Power- and Achievement-Values

While Inglehart’s concept of values is not used here, his ideas about the social
mechanisms shifting value priorities get further consideration. On this Inglehart and
Welzel (2005: 19) write: ‘Socioeconomic development starts from technological
innovations that increase labor productivity; it then brings occupational specialization,
rising educational levels, and rising income levels; it diversifies human interaction,

¹ For the societal level Schwartz’s Theory of Cultural Value Orientations (Schwartz, 2006) with a
different terminology could be applied. However, as ‘substantial structural similarity […] across
individual and country levels’ (Fischer et al., 2010: 145) is empirically confirmed, the present study uses
equal terminology for power- and achievement-values at both levels. In the empirical analyses in section
seven the assumption of ‘cross-level invariance’ (Zyphur et al., 2008: 127) is tested.
shifting the emphasis from authority relations toward bargaining relations; in the long run this brings cultural changes, such as changing gender roles, changing attitudes toward authority, changing sexual norms, declining fertility rates, broader political participation, and more critical and less easily led publics’. Societal development ‘affects people’s daily lives more massively and brings changes that are more immediately felt’ than any other phenomenon (Inglehart and Welzel, 2005: 22). In other words: Beside other aspects, societal development brings about differences in the importance of values, while the process is seen as probabilistic and the stages are seen as reversible (Inglehart and Welzel, 2005: 18-47, 2010: 552-55).

More specifically, Inglehart distinguishes the process of Modernisation from Postmodernisation.² Industrialisation is seen to be essential for Modernisation in that ‘economic growth becomes the dominant societal goal, and achievement motivation becomes the dominant individual-goal’ (Inglehart, 1997: 5). Since the 1970s the process of Postmodernisation which ‘deemphasizes all kinds of authority […] allowing much larger range for individual autonomy in the pursuit of individual subjective well-being’ (Inglehart, 1997: 74-75), began. Furthermore, during the process of Postmodernisation, achievement motivation should have faded in salience. Authority is assumed to highly correlate with hierarchical relationships and thereby with a high priority in power-values. In short, there is a strong tie between societal development and the diminishing priority of both power- and achievement-values.

Some remarks should be made here. First, the concept of Modernisation and Postmodernisation covers a wide range of characteristics from which hypotheses about the determinants of differences in the importance of values can only be derived at a very general level (Haller, 2002: 141). To be more specific, the present study uses the theory

² In Inglehart’s and Welzel’s revised theory of modernization the term postmodernization no longer is used. As there are more rich information about power- and achievement-related differences in the importance of values in the writings of Inglehart (1997), those ideas and therewith the usage of the term Postmodernisation is maintained here.
of social production functions, which is described in detail in section five. Second, two different terminologies were used. Modernisation and Postmodernisation can be seen as ideal-typically processes in industrial and post-industrial societies. Societal development, which will be the further used term in this article, is the general process covering different kinds of societies. Third, although Inglehart theoretically considers power- and achievement-values there is a lack of empirical results. Power values as they are conceptualized in the present study were not included in Inglehart’s work (Dobewall and Strack, 2014). Inglehart (1997: 82) measures achievement-motivation by an index of the importance of four items regarding thrift, determination, obedience, and religious faith (Inglehart, 1997: 390). So, Inglehart’s index does not have any substantive relation to achievement in terms of Schwartz’s definition referring to personal success through demonstrating competence according to social standards. Thus, Inglehart’s empirics unfortunately cannot be interpreted meaningfully here.

As one general explaining mechanism, Inglehart and Welzel (2005: 23) propose that ‘prevailing value orientations reflect prevailing existential conditions and their chances of survival.’ Inglehart (1997: 33) in his famous scarcity hypothesis further specifies: ‘An individual’s priorities reflect the socioeconomic environment: one places the greatest subjective value on those things that are in relatively short supply.’

First, the hypothesis clearly refers to the individual level as can been seen in the terms ‘individual’s priorities’. Theoretically, obviously a micro level mechanism is proposed. At the macro level Inglehart (1997: 158-324) argues with the marginal utility hypothesis saying that people do not strive for certain goals anymore, if they have already reached a sufficient amount of goods related to this goal. However, the relationship between the mechanisms at the micro and the macro level is not clear. This aspect will be given further consideration regarding power- and achievement-values in section five applying the social production functions.
Second, the scarcity hypothesis claims to explain the priority of all values, which refer to things that can be at short supply and therewith makes itself also applicable to power- and achievement-values.

Third, a known weakness of Inglehart’s scarcity hypothesis is the reference to Maslow’s (1954) Need Hierarchy Theory with the synonymous usage of the terms values and needs (Thome, 1985: 30). In contrast to Inglehart in the present study a clear distinction between both terms is made with reference to Schwartz (1994: 21), arguing that values are conscious goals representing “responses to three universal requirements […]: needs of individuals as biological organisms, requisites of coordinated social interaction, and requirements for the smooth functioning and survival of groups.” Circumstances can differ within life cycles of individuals but also between different social strata or different societies. The adaptation to such life circumstances is assumed to influence the importance of values (Schwartz and Bardi, 1997: 387). Thus, specific circumstances of individual’s need satisfaction, and specific conditions of social interactions, under consideration of different social strata, that more concretely are specified for power- and achievement-values in section five, are focussed in the present study. In contrast to needs, values are not as deeply rooted within individuals so the importance of values is potentially changing. The importance of values is assumed to be influenced by circumstances during the whole life of individuals and societies. However, changes in crucial societal characteristics influencing citizen’s importance of values mostly do not occur suddenly such as a change in the level of societal development that takes years. At the individual level changing processes might behave usually similar slow as for instance aging or mobility between social strata. Inglehart’s (1997: 33-34) assumption in his socialisation hypothesis about the priority of values to be formed in pre-adult ages with only little changes in adulthood it is not followed here,
as there is empirical evidence raising doubts about the primacy of early ages (Sangster and Reynolds, 1996).

However, Inglehart’s scarcity hypothesis with the further annotations made, is used to deduce the first hypothesis regarding differences between societies:

H1: the higher the socioeconomic development of societies, the lower the citizen’s priority in power- and achievement values.

4. Social Stratification and Power- and Achievement-Values

Within societies power- and achievement-values comprise a general ‘frame of aspirational reference’ (Merton, 1938: 672). As we have seen, socioeconomic development is assumed to influence the constitution of this frame. An interesting question is, to what extent is this aspirational frame, and therewith the importance of power- and achievement-values, shared within populations, as a kind of ‘collective representation’ (Durkheim, 1974 [1898]) or ‘collective mental programming’ (Hofstede, 2001 [1980]). Fischer and Schwartz (2011) compare the consensus in the importance of values between teacher-student-surveys and the European Social Survey and show that consensus is higher in the former surveys. Given that teachers are a quite homogeneous group compared to the whole occupations within societies, these findings are very plausible. More specifically, the importance of power- and achievement-values shows only moderate consensus, meaning there is a kind of variation to be explained within societies.

As one main factor influencing the importance of values within societies, the social stratification position is known and thereby the occupational conditions are
especially emphasised. The experiences people make in their daily work are supposed to be central to the realm of life that this experience spills over to a conception of a general reality (Kohn and Schooler, 1983a: 6). For the value-types self-direction and conformity, Kohn and Schooler (1983b) empirically confirmed these ideas quite well. The present study assumes these mechanisms to be general, in that they also can be applied to power- and achievement-values. Higher social stratification positions are characterised by their occupational possibilities in exercising power (leading positions) and being socially recognised for achievements at work. These circumstances influence the way people tend to see their own world and capacities in ways that recognised achievements and power-provided positions are reachable and important and therewith power- and achievement-values are relatively important. The opposite can be assumed for people in lower social stratification positions.

In sum, the following for the individual level can be deduced:

H2: the higher the social stratification position, the more important are power- and achievement-values.

5. Social Production Functions as Incorporating Framework

The mechanism explaining the relationship between societal development and the importance of power- and achievement-values needs further consideration. It must be clarified how individual needs translate into the importance of power- and achievement-values of people within different societies. For this purpose the theory of the social

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3 Social stratification is conceived ‘as the hierarchical distribution of power, privilege, and prestige’ (Kohn and Schooler, 1983a: 6).

4 Such arguments raise the question if not only people with high priority in power- and achievement-values reach higher social stratification positions. As for the present study only cross sectional data are available it cannot test be tested for the importance of values or occupational possibilities of the respondents before the survey. However, Kohn and Schooler (1983b) show impressively with panel-data, how occupational conditions impact the importance of values substantially while controlling for a lot of different factors such as educational level, importance of values years before, etc.
production functions seems to be appropriate (Esser, 1999: 91-110; Lindenberg and Frey, 1993). In the following section, this theoretical framework will be applied to the comparative study of values.

5.1 The Theory of Social Production Functions and its Application

The theory of the social production functions sees relative price effects and the efficiency of goods as powerful tools in explaining regularities in the social sciences. Goods in a very general understanding of the theory can be properties, things, objects, social positions, jobs, etc. Before more can be said about how different prices and efficiency come about, referring back to Smith (1986 [1759]), social approval and physical well-being as needs are assumed. They are seen as universal goals, ‘that are identical to all human beings’ (Lindenberg and Frey, 1993: 195). However, it can be discussed if these two needs are exhaustive or if there are more general human needs. But proposing these two general needs researchers has a heuristic value avoiding theorising ad hoc (Lindenberg, 1996; Opp and Friedrichs, 1996). The efficiency of the goods in coping with the given existential conditions depends on what the social situation constitutions as the natural, material, institutional and cultural circumstances. Relative scarcities and relative prices of the goods are assumed to determine the adherence to specific goals. The preferences for specific goods can be derived from the technological conditions of their production and the material scarcities. In Marxian terms: Being constitutes consciousness (Esser, 1999: 99-107).

Arguing within this framework, it is inferable, that the less developed a society, the less prosperous the people living within the society are in general. Because of the low prosperity, the efficiency of power and achievement to cope especially with the

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5 The level of social inequality also can play a role in this context. If there is high social inequality, a countries’ prosperity can be high but not all people within the society gain from it. Köthemann (2014) shows that social inequality does not substantially impact the relation of societal development and the priority of power- and achievement-values. Thus, social inequality is not focussed here.
basic need of physical well-being is assumed to be relatively high compared to more wealthy societies. At this point one can think of the educational- or the health care systems which in poorer societies often cannot provide sufficient infrastructure to cope with the situations in daily life (United Nations Development Programme, 2009). In this situation, money earned in gainful occupations (achievement) and a higher social position to provide social influence on important persons (power) can be very efficient in accessing good health care and a qualified education. Thus, the higher the efficiency of goods regarding power and achievement to cope with the conditions of daily life, the higher the importance of power- and achievement-values.

As the mentioned input and outcome variables are characteristic at the societal level referring to individual characteristics some words about the assumed interrelations. The conditions of life mentioned refer to whole societies and are a macro characteristic of the social situation people are living in. Individuals have to cope with their daily lives and the given conditions. Higher or lower societal socioeconomic development is assumed to be a fundamental condition to which people adapt their preferences and goals accordingly across societies. Thus, the fact that actors adapt their values in a similar manner (individual level) results in a different general level of the importance of values between societies (societal level).

However, there are also obvious differences in the importance between people within societies that might be focussed. Fundamental assumption is that the availability of social positions facilitating power and receiving social recognition for achievements differs across social strata within societies. For individuals in lower social stratification positions (e.g., farm workers or unskilled labours) it is difficult to obtain posts that exercise power or get high social recognition for achievements compared to people positioned in the higher social strata (Treiman, 1977). In the social production functions it is assumed if the availability of goods is low, these goods are expensive, people
change their minds and strive for different goods that are cheaper (Esser, 1999: 107; Lindenberg and Frey, 1993: 192). Thus, as for individuals in lower social stratification positions the availability of jobs equipped with power (leading positions) and highly socially recognized achievements is quite low. Therefore, they strive for jobs that are easier to obtain and probably quite low regarding the power- and achievement-characteristics mentioned. That is why on the one hand the importance of power and achievement in lower social stratification positions is comparatively low.

Furthermore, if these people do not strive for different jobs they work under occupational conditions that are poorly equipped regarding power and achievement. Thus, coming back to Kohn and Schooler these occupational conditions highly influence the way these people tend to see their own world and capacities. That is why on the other hand the importance of power and achievement in lower social stratification position is quite low. The opposite applies to people in higher social stratification positions.

5.2 Congruences and Incongruences

By putting together such different kinds of ideas, a focus on congruences and incongruences is necessary. First, the connection of the social production functions and Kohn’s and Schooler’s idea is considered. From the perspective of different levels of generality the theory of the social production functions clearly can be seen as a very general theory trying to explain a larger set of phenomena (Hedström and Udehn, 2009: 28), while Kohn’s and Schooler’s idea is a middle-range theory. The occupational conditions are a particular factor and the relative prices are very general factor.

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6 Middle-range theories ‘are theories that lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behaviour, social organization and social change.’ (Merton, 1968 [1949]: 39)
However, both ideas fit very well because both predict that the higher social stratification position the more important are power- and achievement-values.

However, incongruence in the prediction can be found by using Inglehart’s scarcity hypothesis. As the scarcity hypothesis is formulated as an individual level mechanism, it might also be applied to phenomena within societies and not only for differences between societies as already described. Arguing with the scarcity hypothesis, people in lower social stratification positions should see power- and achievement-values as more important (negative relation) because they are assumed to have scarce power resources and are far away from socially recognised achievements. If social stratification is positively related to power- and achievement-values - as suggested by Kohn’s and Schooler’s (1983b) theory and also by the application of the social production functions - the scarcity hypothesis is empirically rejected.

Congruence can be found in the assumptions about the relationship between needs and values. Within the framework of the social production functions, the basic needs of physical well-being and social approval are assumed. To satisfy both needs different goods have to be produced. Thereby, the efficiency of different goods and relative prices of goods are of utmost importance. High efficiency and low costs of goods should correspond with high importance of values in this field because these goods are very helpful and cheap in coping with the existential conditions while striving to satisfy basic needs. Hence, the social production functions are in line with Schwartz’s (1994: 21) idea of values as conscious goals representing needs. With Inglehart’s ideas about the scarcity hypothesis, it was not possible to distinguish between values and needs. That is why the scarcity hypothesis gets no further consideration in the application of the social production functions.

In short: by using the social productions functions, it is possible to specify mechanisms at both the societal and the individual level that are derived from a
consistent theoretical framework. This framework makes it possible to integrate individualistic and collectivistic ideas and to describe how they are related (Opp, 2011).

6. Analysis Strategy

6.1 Measurements

This study is based on the fourth wave of the European Social Survey (ESS) that was conducted in the years 2008 and 2009 and includes information from 61,009 respondents in 31 countries. ‘The European Social Survey (ESS) is an academically-driven multi-country survey’ (The ESS Data Team, 2012: 9). Since 2002, data have been collected biannually. The fourth wave was chosen for the empirical analysis presented below, as the maximum number of countries is available and therefore a maximum range of countries can be investigated.\(^7\)

The importance of power- and achievement-values is measured by a short version of the Portrait Values Questionnaire developed by Schwartz (2007; Schwartz et al., 2001). The scale ‘includes brief verbal portraits of 21 different people, gender-matched to the respondent. Each portrait describes a person’s goals, aspirations or wishes that point implicitly to the importance of a single value’ (Schwartz, 2007: 177). More concretely, the following four items are conceptually assigned and empirically very well confirmed to measure the importance of power- and achievement-values (Schwartz et al., 2001): ‘It is important to him to be rich. He wants to have a lot of money and expensive things.’ (imprich); ‘It is important to him to show his abilities. He wants people to admire what he does.’ (ipshabt); ‘Being very successful is very important to him. He hopes people will recognize his achievements.’ (ipsuces); and ‘It is important to him to get respect from others. He wants people to do what he says.’ (iprspot) People should rate, how much the described person is like them. There is a six-

\(^7\) More details about the countries analysed are shown in the supplementary material.
point likert-scale ranging from ‘very much like me’ to ‘not like me at all’. ‘Respondents’ own values are inferred from their self-reported similarity to people who are described in terms of particular values’ (Schwartz, 2007: 177). To make the numbers intuitively plausible they were recoded from 1 ‘not like me at all’ to 6 ‘very much like me’ for the whole scale. As will be shown later for the societal level analysis, the individual responses are aggregated to means for each country.

There are different possibilities to measure the social stratification positions. Kohn and Schoenbach (1983: 155-56) suggest education, income and occupational status. In this study, the Erikson-Goldthorpe-Portocarero-Class-Schema (EGP) (Erikson et al., 1979) is applied; this basically uses the International Classification of Occupation (ISCO) with additional information on the specific work situations. The income-variable has 30 per cent missing values and is therefore not applicable. Education could be another measure and probably is highly correlated with the EGP. However, for 40 or 50 years old people, their education refers to certificates they got many years ago. Thus, the EGP is a more actual and a more precise indicator.

At the societal level, the present study uses the Human Development Index to measure societal development because it defines development in a relatively broad manner. It uses life expectancy after birth, and mean years of schooling together with the GDP per capita. These three dimensions are combined within the Human Development Index ranging from zero for extremely low to one for extremely high development (United Nations Development Programme, 2013). To capture the prevailing societal conditions before the measurement of the importance of values in the years 2008 and 2009 the data of the Human Development Index used refers to the year 2007.\footnote{The detailed descriptive distribution can be seen in the supplementary material.}
6.2 Methodology

In order to model the mentioned factors adequately, I will use a so-called Two-Level Confirmatory Factor Analysis (Two-Level CFA) with Covariates that belongs to the Multilevel Structural Equation approaches (Multilevel SEM). Two-Level CFAs allow for the testing of the comparability of the power- and achievement factor across countries and across levels (societal and individual), which are two important aspects of this study and cannot be analysed by conventional multilevel regression. It was Muthén (1989, 1994) who first worked with these kind of models. To date, especially in the area of international comparative research this kind of modelling is seldom used (Cheung and Au, 2005). Figure 1 visualises the basic idea using a path diagram as suggested by Muthén (1994: 386).

< Figure 1 about here >

The main distinction is made between the respondent level within countries and the country level between countries. At the within level the factor \( \eta_w \) is measured by the four indicators \( y_1 \) to \( y_4 \). Because usually the indicators do not perfectly measure the factor – as it would be assumed by computing a conventional index - there are the factor loadings with \( \lambda_{1w} \) to \( \lambda_{4w} \) to capture the correlations with the factor and the error-terms for each indicator \( \varepsilon_{y1} \) to \( \varepsilon_{y4} \) to capture the residuals. As we have to make sure equal meaning of power- and achievement-values across countries, the factor loadings are not allowed to vary across countries.\(^9\) In Figure 2 it can be seen by the bold arrows surrounding \( \eta_w \). In a different terminology it can be said that the slopes are fixed. Thus, at the individual level the factor loadings are restricted to be invariant across countries;

\(^9\) Equal factor loadings across countries and therewith measurement invariance of the indicators are also confirmed by means of multigroup confirmatory factor analysis as reported in more detail in the supplemental material.
this implies equal meaning of the factors across countries (Horn and McArdle, 1992: 123-25). In the present study context effects (societal development) are assumed. As multigroup confirmatory factor analysis reveals statistically significant variations in the intercepts by not supporting scalar invariance between the countries, random intercepts must be estimated.\textsuperscript{10} In Multilevel SEM random intercepts are between level latent variables, capturing the variation in the means (Hox and Roberts, 2011: 7). In Figure 1 they are denoted by $y_{1b}$ to $y_{4b}$. At the same time they are indicators of the between factor $\eta_b$.

Using the Full Information Maximum Likelihood Estimation (Arbuckle, 1996) the Two-Level CFA can specified as follows (Hox, 2013: 8):

$$y_{ij} = \mu_i + \Lambda_w \eta_i + \varepsilon_w$$

$$\mu_i = \mu + \Lambda_b \eta_i + \varepsilon_b$$

$\mu_i$ are the random intercepts that vary across countries. The first equation models the within variation and the second one models the between variation. By rearranging and substituting, the following equation is obtained:

$$y_{ij} = \mu + \Lambda_b \eta_i + \Lambda_w \eta_i + \varepsilon_b + \varepsilon_w$$

$\Lambda_b$ is the matrix of the factor loadings at the between level and $\Lambda_w$ is the matrix of the factor loadings at the within level. $\varepsilon_b$ and $\varepsilon_w$ are the vectors of the residual errors at the between and within level.

Another issue relates to the question of equal or different meaning of the power- and achievement factors $\eta_w$ and $\eta_b$. In the described Two-Level CFA the factor loadings

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\textsuperscript{10} Detailed results of the multigroup confirmatory factor analysis are documented in the supplemental material.
\( \lambda_{1w} \) to \( \lambda_{4w} \) and \( \lambda_{1b} \) to \( \lambda_{4b} \) must be substantial and statistically significant so that \( y_1 \) to \( y_4 \) are useful indicators for \( \eta_w \) and \( y_{1b} \) to \( y_{4b} \) for \( \eta_b \). If this condition is satisfied, both factors \( \eta_w \) and \( \eta_b \) represent the importance given to the indicator’s contents. However, without any further restriction the impact of \( \eta_w \) on \( y_1 \) to \( y_4 \) may differ from the impact of \( \eta_b \) on \( y_{1b} \) to \( y_{4b} \). Thus, \( \eta_w \) and \( \eta_b \) have their own composition regarding the relation with the four indicators. From a substantive point of view this difference could be supported by the assumption, ‘that the characteristics that discriminate among individuals and those that discriminate among societies are unlikely to be the same’ (Fischer et al., 2010: 139). However, the cautious reasoning of the assumption co-authored by Schwartz points to the absence of definite findings on this issue. A different view assumes differences in the characteristics that influence the importance of values at the individual and the country level but rejects that these differences result in varying compositions of the content of values. Technically, \( \eta_b \) should reflect the country aggregate of \( \eta_w \) so that ‘cross-level invariance’ (Zyphur et al., 2008: 127) must be specified (Stapleton et al., 2016: 496). This is done by setting the factor loadings equal across levels implying equal meaning of \( \eta_w \) and \( \eta_b \). In Figure 2 it is shown by the bold arrows at the within and the between level surrounding \( \eta_w \) and \( \eta_b \). Formally it means:

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\lambda_{1w} = \lambda_{1b}, \quad \lambda_{2w} = \lambda_{2b}, \quad \lambda_{3w} = \lambda_{3b}, \quad \lambda_{4w} = \lambda_{4b}
\]

If people differ in their importance of values \( \eta_w \) varies within societies. To explain this variation at the respondent level, covariates \( x_{ij} \) can be introduced. Furthermore, if the means of the importance of values differs between countries this variation can be explained by societal level covariates \( x_j \).

7. Results

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11 Analyses are conducted using Mplus 7.4.
One important question is if there are any differences in the importance of power- and achievement-values that can be traced back to societal factors. Both variances of the power- and achievement-factor at the individual level (.522) and the country level (.09) are statistically significant different from zero. The intraclass correlation is .147 so that 14.7 per cent of the variance of the power- and achievement factor can be traced back to societal level determinants. As zero is not included in the 95 percent confidence interval (.076 to .219), the intraclass correlation is statistically significant different from zero.

The analysis starts with a basic Two-Level CFA including a test for cross-level invariance. In a last step the covariates to explain the variance of the factors at both levels are introduced into the model.

The first model in Figure 2 is a Two-Level CFA for power- and achievement-values with some restrictions: to set the factor metric, the first factor loadings are fixed to one. This implies that factors are scaled similar to the indicators for the importance of wealth (imprich, imprich). As already mentioned in the last section, factor loadings at the individual level are restricted to be equal across countries, implying equal meaning of the factor across countries. All factor loadings are substantial while the loadings for the items of the importance of success (ipsuces) and to show abilities (ipshabt) are higher than the items about the importance to be rich (imprich) and to get respect (iprsprt). Furthermore, to test cross-level invariance so that $\eta_b$ reflects the country aggregate of $\eta_w$ factor loadings are restricted to be equal across levels. The $\chi^2$-difference-test for the model with cross-level-restrictions compared to the model without cross-level-restrictions points to a non-significant difference in model fit so that the present model with cross-level-equivalence can be accepted. Following Hu and Bentler (1999) the data fit indices point to a good fit between the model and the

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12 The model without cross-level-equivalence-restrictions can be found in the supplemental material.
13 For the $\chi^2$-difference-test the Satorra-Bentler scaling correction is taken into account because models are run with robust maximum likelihood estimations.
Thus, the model is accepted, cross-level invariance is confirmed and the power and achievement factors at both levels have the same meaning.

In a next step, as shown in Figure 1, covariates to explain the variance of the factors are introduced. As a path diagram would get complicated and confusing, Table 1 is used for a detailed description. Societal development as measured by the Human Development Index, is negatively related to power- and achievement-values as assumed in hypothesis 1.

The social stratification position is introduced by EGP-class-schema dummy variables with farm workers and unskilled labours as the reference class. As social stratification is seen as ‘the hierarchical distribution of power, privilege, and prestige’ (Kohn and Schooler, 1983a: 6), along a scale the service classes are assumed to be in relatively high positions whereas unskilled and farm-workers are in relatively low positions.

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14 Suggested cut-off values: CFI closed to .95, RMSEA closed to .06, SRMR closed to .08. Although the overall fit measures are good, the SRMR for the between level is slightly above the suggested criterion. However, a large number of countries, preferably greater than 50, is needed to correctly detect issues of cross-level equality (Fischer et al., 2010). As the present analyses only can use 31 countries the slightly higher SRMR at the between level is accepted.

15 By having only 31 countries the MLR lacks power (Meuleman and Billiet, 2009). However, analyses with ML estimation leads to slightly higher standard errors but the coefficient for the Human Development Index still is significant. Following Hox’s (2010: 33) suggestions, all slopes of the exogenous variables were fixed as there is no strong theoretical or empirical justifications to estimate random slopes. The model without cross-level invariance yields a lower coefficient (-4.377) that statistically does not differ meaningfully form the coefficient in table 1, proved by overlapping confidence intervals. Thus, the cross-level invariance restriction does not change the results meaningfully.

16 Just for clarification: The higher service class includes higher grade professionals, administrators and officials, managers in large industrial establishments and large proprietors. The lower service class includes lower-grade-professionals, administrators and officials, higher-grade technicians, managers in small industrial establishments, and supervisors of non-manual employees. The routine class includes non-manual employees in administration and commerce, sales personnel, and other rank-and-file service workers. The petty bourgeoisie includes small proprietors and artisans, etc., with and without employees (Erikson and Goldthorpe, 1992: 39-40).
As the B coefficients can be interpreted as mean differences between the reference group and the other respective class, a significant B-score of .293 for the higher service class means that the importance of power- and achievement-values in this class is, on average, .293 points higher than among unskilled and farm-workers. Routine non-manual employees differ by .075 points and therefore show the lowest mean difference. Thus, hypothesis 2 can be confirmed because the higher service class stands for a high social stratification position and sees power- and achievement values as significantly more important compared to farm-workers and unskilled labours. For all the other classes analysed, hypothesis 2 fits. Furthermore, this finding matched the results found by Kohn and Schooler (1983a). As important control variables gender and age are included, which both have statistically significant negative effects for the importance of power- and achievement-values. For a better orientation theoretical assumptions and empirical results are summarized in table 2.

8. Summary and Discussion

Bringing together the results from the societal and the individual level it can be said that the higher the societal development, the lower the priority in power- and achievement-values, and the higher the social stratification position, the more important are power and achievement-values. Thus, analysing hypothesis 1 and hypothesis 2 simultaneously leads to an empirical confirmation of both. Cross-level structural equivalence is also confirmed meaning that power- and achievement-values at the societal and the individual level have the same meaning.
Inglehart’s and Welzel’s idea of the importance of the existential conditions works well with the findings of this article. Inglehart’s scarcity hypothesis, saying people value those things most that are in relatively short supply, must be rejected because in contrast to its assumptions the empirical results here show: the higher the social stratification position the higher the importance of power- and achievement-values. Kohn’s and Schooler’s theory of the prominence of the occupational conditions fits the data.

The theory of social production functions is introduced to clarify the opposing relations of societal development and social stratification to the importance of power- and achievement-values - that at first glance could seem contradictory. Within this framework at the societal level it is argued with the efficiency of power and achievement in coping with existential conditions. In societal situations of lower societal development, goods regarding power and achievement should be very efficient in coping with daily life requirements. High efficiency corresponds with power- and achievement-values being more important. Different social stratification positions bring about different costs to arrive in positions exercising power over people and resources and achieving social recognition. In higher positions it could be quite easy but in lower positions it could be quite costly that people consequently are striving for different goals and the importance of power- and achievement values should be relatively low. Therewith we have just one framework explaining both societal and individual level mechanisms. As the data show, the findings are in line with these argumentations and the framework can be confirmed empirically.

Some limitations have to be mentioned here. First, the importance of occupational conditions for the importance of power- and achievement-values was derived from Kohn’s and Schooler’s research. Although they assumed that occupational conditions are crucial for the importance of values in general, their empirical focus was
on the value-types self-direction and conformity. The relationship of occupational conditions and power- and achievement-values seems underexplored and requires further studies to empirically strengthen the assumption – made in this paper – of occupational conditions influencing the importance of values independent of the value-type. To better disentangle cause and effect it would be very useful to have panel data for this purpose. Second, it would be interesting to have a closer look at determinants of the importance of power- and achievement-values separately. Are there any differences between power- and achievement-values? In this study it was not possible to assess this because of data limitations regarding the limited number of indicators for power- and achievement-values each. Third, Schwartz’s Theory of Human Values implies a system of values in which the relative importance of each value type to the other value types counts. However, in CFA it is only possible to use raw scores implying the absolute and not the relative importance of the value types. Including the individuals mean score for all value types can control for this fact (Schwartz, 2009). In the supplemental material it can be seen that results do not change substantially. Fourth, theoretical assumptions and empirical analyses explain both heterogeneity between countries by societal development and heterogeneity within countries by using EGP and the other individual level variables. However, one could further have a closer look if the micro model fits better for some countries compared to others similar to what Magun et al. (2016) did.

All in all, diametrically opposed relations of societal development and social stratification on the importance of power- and achievement-values were empirically confirmed and explained by the social production functions. Future investigation has to show if the social production functions can also be applied to other value-types.

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### TABLE 1: Two-Level CFA with Covariates to Explain Power- and Achievement-Values

<table>
<thead>
<tr>
<th>Societal Development</th>
<th>B</th>
<th>SE</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Development Index</td>
<td>-2.692</td>
<td>0.666</td>
<td>0.000</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Social Stratification</th>
<th>B</th>
<th>SE</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Ref. Unsk. &amp; Farm-Workers)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service (High)</td>
<td>.293</td>
<td>.034</td>
<td>.000</td>
</tr>
<tr>
<td>Service (Low)</td>
<td>.189</td>
<td>.034</td>
<td>.000</td>
</tr>
<tr>
<td>Petty Bourgeoisie</td>
<td>.255</td>
<td>.040</td>
<td>.000</td>
</tr>
<tr>
<td>Routine</td>
<td>.075</td>
<td>.025</td>
<td>.002</td>
</tr>
<tr>
<td>Workers (High Skilled)</td>
<td>.089</td>
<td>.019</td>
<td>.000</td>
</tr>
<tr>
<td>Farmers</td>
<td>.105</td>
<td>.034</td>
<td>.002</td>
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<table>
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<tr>
<th>Control</th>
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<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Ref. Men)</td>
<td>-.153</td>
<td>.014</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>-.013</td>
<td>.001</td>
<td>.000</td>
</tr>
</tbody>
</table>

ESS 2008                             N$_b$ 31     N$_w$ 50806   Chi$^2$ 947.183 df 34 p .000
CFI .95   RMSEA .023 SRMR$_b$ .106 SRMR$_w$ .020   MLR-Estimation
FIGURE 3

between: country level

within: respondent level

ESS 2008 Nb=31 Nw=59744 Chi²= 3.298 df=7 p=0.856 CFI=1.000 RMSEA=0.000 SRMRb=0.103 SRMRw=0.001, all factor loadings p<0.001, Standardizations in Brackets, MLR-Estimation