

# I II SFB 882

From Heterogeneities to Inequalities

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**Why is justice regarded as so important?  
Theoretical considerations and  
an empirical test of a fundamental question**

**Stefan Liebig  
Carsten Sauer  
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## **DFG Research Center (SFB) “From Heterogeneities to Inequalities”**

Whether fat or thin, male or female, young or old – people are different. Alongside their physical features, they also differ in terms of nationality and ethnicity; in their cultural preferences, lifestyles, attitudes, orientations, and philosophies; in their competencies, qualifications, and traits; and in their professions. But how do such heterogeneities lead to social inequalities? What are the social mechanisms that underlie this process? These are the questions pursued by the DFG Research Center (Sonderforschungsbereich (SFB)) “From Heterogeneities to Inequalities” at Bielefeld University, which was approved by the German Research Foundation (DFG) as “SFB 882” on May 25, 2011.

In the social sciences, research on inequality is dispersed across different research fields such as education, the labor market, equality, migration, health, or gender. One goal of the SFB is to integrate these fields, searching for common mechanisms in the emergence of inequality that can be compiled into a typology. More than fifty senior and junior researchers and the Bielefeld University Library are involved in the SFB. Along with sociologists, it brings together scholars from the Bielefeld University faculties of Business Administration and Economics, Educational Science, Health Science, and Law, as well as from the German Institute for Economic Research (DIW) in Berlin and the University of Erlangen-Nuremberg. In addition to carrying out research, the SFB is concerned to nurture new academic talent, and therefore provides doctoral training in its own integrated Research Training Group. A data infrastructure project has also been launched to archive, prepare, and disseminate the data gathered.

## **Research Project A6 “The Legitimation of Inequalities – Structural Conditions of Justice Attitudes over the Life-span”**

This project investigates (a) the conditions under which inequalities are perceived as problems of justice and (b) how embedment in different social contexts influences the formation of attitudes to justice across the life course.

We assume that individuals evaluate inequalities in terms of whether they consider them just, and that they hold particular attitudes toward justice because, and as long as, these help them to attain their fundamental goals and to solve, especially, the problems that arise through cooperation with other people (cooperative relations). As a result, attitudes on justice are not viewed either as rigidly stable orientations across the life span or as “Sunday best beliefs” i.e. short-lived opinions that are adjusted continuously to fit situational interests. Instead, they are regarded as being shaped by the opportunities for learning and making comparisons in different phases of the life course and different social contexts.

The goal of the project is to use longitudinal survey data to explain why individuals have particular notions of justice. The key aspect is taken to be changes in the social context – particularly households, social networks, or workplaces – in which individuals are embedded across their life course. This is because social contexts offer opportunities to make social comparisons and engage in social learning, processes that are decisive in the formation of particular attitudes to justice. The project will test this empirically by setting up a special longitudinal panel in which the same individuals will be interviewed three times over an 11-year period.

The results of the project will permit conclusions to be drawn on the consequences of changes in a society's social and economic structure for its members' ideas about justice. The project therefore supplements the analysis of the mechanisms that produce inequality, which is the focus of SFB 882 as a whole, by looking at subjective evaluations, and it complements that focus by addressing the mechanisms of attitude formation.

### Research goals

- (1) Analysis of the conditions in which justice is used as a criterion for evaluating inequalities.
- (2) Explanation of attitudes toward justice as the outcome of comparison and learning processes mediated by the social context.
- (3) Longitudinal observation of the individual development of attitudes to justice over the life course.

### Research design

- (1) Continuation and expansion of the longitudinal survey of evaluations of justice conducted by the German Socio-Economic Panel Study (SOEP).
- (2) Commencement of an independent longitudinal panel with ties to the process-generated individual data of the German Institute for Employment Research (IAB) and information on companies and households (the plan is to carry out three survey waves over an 11-year period).

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His recent publication is: *Wages in Eastern Germany Still Considered More Unjust Than in the West*. *DIW Economic Bulletin* 4 (2014): 59–64 (with S. Liebig and J. Schupp).

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# **Why is justice regarded as so important? Theoretical considerations and an empirical test of a fundamental question**

Stefan Liebig, Carsten Sauer, and Sebastian Hülle

## **Abstract**

The paper investigates why justice is regarded as important in human groups and societies. Using the theory of social production functions (SPF) as a general model of action, the theoretical analysis focuses in a first step on the question of why individuals regard justice as valuable in social life. The theory of social production functions defines two fundamental human goals—physical and social well-being. The integration of justice concepts into a general model of human behavior demands to explain how justice enters an individual's social production functions. We predict a direct effect by just procedures that increases social well-being and an indirect effect by stability of auxiliary assumptions given by justice for the production of physical and social well-being. In a second step, the theoretical predictions are tested empirically. The analysis is based on a large dataset that contains 2,926 employees surveyed all over Germany. Using structural equation modeling, the empirical results support our hypotheses: Justice is more important for people who have deficits in physical and social well-being (H1). Moreover, these deficits are more important for justice in the public context than in the private context (H2). It can also be shown that people who work in cooperative situations in which they have to rely on others rate the importance of justice higher (H3). In conclusion, the importance of justice depends on the personal situation and the fulfillment of individual goals, and can be seen as functional on the individual level in ensuring an increase in benefits in cooperative interactions.

## **Keywords**

Justice attitudes, importance of justice, rationality of justice, theory of social production functions, subjective well-being

## Introduction

Justice is a fundamental force in nearly all contemporary societies. The core of the ubiquitous quest for justice is made up by the problem that most valued goods are scarce and that most of the amenities in life depend on individual or collective efforts. Under these conditions, the question arises in nearly all forms of social aggregation—in dyadic relationships or groups as well as in organizations and societies—as to whom should get what amount of valued goods and who has to bear which burdens and strains. Within philosophy, the quest for justice is treated as a matter of morality, or as John Rawls (1973) put it: “*Justice is the first virtue of social institutions, as truth is of systems of thought.*” However, defining justice as a virtue or a matter of morality does not provide an explanation as to why individuals in merely all modern societies and in all social aggregations are concerned with the question of who is entitled to what amount of goods and burdens. Philosophy formulates justice with a normative claim: Why justice should be prevailing is a question of moral and ethics. When we observe the importance of justice in human beings it could be that they on the one hand act according to the moral imperative or on the other hand that they have other motives why they perceive justice as important. The task of social and behavioral sciences is to explain the reasons for the importance of justice in people. The aim of this paper is, hence, to find a theoretically guided answer to the basic question of sociological justice research: why justice is regarded as a desirable state within societies and, more concretely, why justice is important for individuals. We assume that—following structural individualism—explanations of collective phenomena are only possible by explaining which rationality these phenomena have on the individual level. For that, we start with a general model of human behavior and ask why developing a sense of justice might be rational for humans. More specifically, the theory of social production functions (SPF) (Lindenberg, 1996; Lindenberg, 2013; Ormel et al., 1999) is used as a general model of action. SPF assumes that people strive for two fundamental goals—physical and social well-being. Based on this general framework, our theory of justice has the aim to explain why justice is rational, meaning how justice enters an individual's social production function. The basic idea is that justice has a direct and an indirect effect on individual social production functions, and it is therefore rational for an individual to see justice as a desirable state. The *direct effect* stems from procedural justice, which is a signal to people of whether or not they are recognized as equal members of a group or a society and whether their interests are taken seriously. If procedural justice is warranted, it directly increases social well-being. The *indirect effect* is connected to stability in auxiliary conditions ensured by rules of justice. The social existence of rules of justice affects the efficiency of social production functions for middle and long term inputs and reduces uncertainties and therewith feelings of loss aversion. Thus, the increasing predictability of an individual's own future outcomes of investments of any type leads to increases of physical and social well-being. If people have deficits in physical or social well-being, the need and therefore the importance of justice for individuals increases. This is the case because people who suffer deficits in these basic goals try to compensate by increasing their production and, therefore, are in need of stable and predictable conditions.

The aim of the paper is not only to provide a theoretical explanation why justice is regarded as important but also to test the assumptions derived from the theoretical model empirically. For that we use data from a German employee survey (N = 2,926) and ask how individual deficits in physical and social well-being influence the stated subjective importance of justice in the public and private context.

The contributions of this paper to the sociological literature include providing a theory-driven explanation for “how justice came into the world” i.e., we give an answer for why humans regard justice as a desirable state in social interactions and in the society as a whole. In

contrast to approaches that use explanations that are not grounded in a general model of action, this study argues from a well-defined point of view. So far, such generic explanations of why justice is so important in societies and interactions including structural and individual levels with empirically testable predictions are missing.<sup>1</sup> The paper is one of the first attempts to formulate justice in a strictly sociological framework (see Liebig and Sauer, 2013; Liebig and Sauer, 2015). Moreover, the paper is the first attempt to empirically test the connections formulated theoretically.

In the following, the multi-level problem of sociological explanation is introduced, and its implications regarding the (empirical) justice research are formulated. Next, justice is defined as a social norm and value. To follow, we develop a theoretical explanation of how justice becomes relevant for individuals, assuming a general model of human behavior as formulated in the theory of social production functions. Hypotheses are derived from the theoretical arguments and afterwards empirically tested using structural equation modeling. Finally, our results are discussed in regard to prior empirical findings.

## Theory

### *Justice as a multi-level problem*

Sociological justice research has the goal to not only describe ideas of justice of how goods and burdens should be distributed within and between societies or other social aggregates but also to find theory-based explanations of how these justice attitudes emerge and why they differ between people or groups (see Liebig/Sauer 2013, 2015). Moreover, the explanations have to be validated or tested empirically. The explanations relate to three basic “why-problems” (Bunge, 2009: : 3): why do notions of justice in a social aggregate exist, why do they vary in time and space and why are other societal phenomena affected by collective or individual notions of justice? Answers to why-questions have the logical form “ $q$  is because of  $p$ ” whereby  $q$  is the *explanandum* (in our case, e.g., notions of justice in a social aggregate) and  $p$  denotes the reason for the existence of  $q$  (*explanans*). When sociological research tries to identify social determinants of  $q$ ,  $p$  refers to some structural contexts of social aggregates or processes within them. In other words:  $q$  is the outcome of certain social conditions ( $sc$ ), or more generally:  $q = f(sc)$ . Treating  $q$  as the outcome of  $sc$  implies the assumption of a causal relationship between the two components in the form of  $sc \rightarrow q$ . The study of consequences of justice is based on the same logic. In this case,  $q$  is some social phenomenon (*explanandum*) which is affected by notions of justice—e.g., the level of trust in a society (Tyler, 2001), political participation (Mühleck, 2009) or employee theft rate in firms (Greenberg, 1990)— $p$  are the determinants (*explanans*). Justice ( $j$ ) is then one of these factors affecting a certain outcome:  $q=f(p,j)$ .

If sociological justice research tries to identify and empirically proof these causal relations at a societal or macro level, it faces at least three methodological problems. The first is what is known as the “*small N*” *problem* (Kittel, 2006): Showing that structural conditions within a society determine some kinds of shared notions of justice requires data on the societal level which can provide for either a comparison of different societies or a depiction of how structural changes in a society also effect changes in shared justice conceptions over time. In both cases, the number of societies or observations is limited so that there would be—if any—very low strength to any statistical analysis. The second related problem is *over-determination* (Mayntz, 2002). Social phenomena are usually not only affected by one single determinant, but are the result of intertwined developments in a way that the affecting factors often cannot

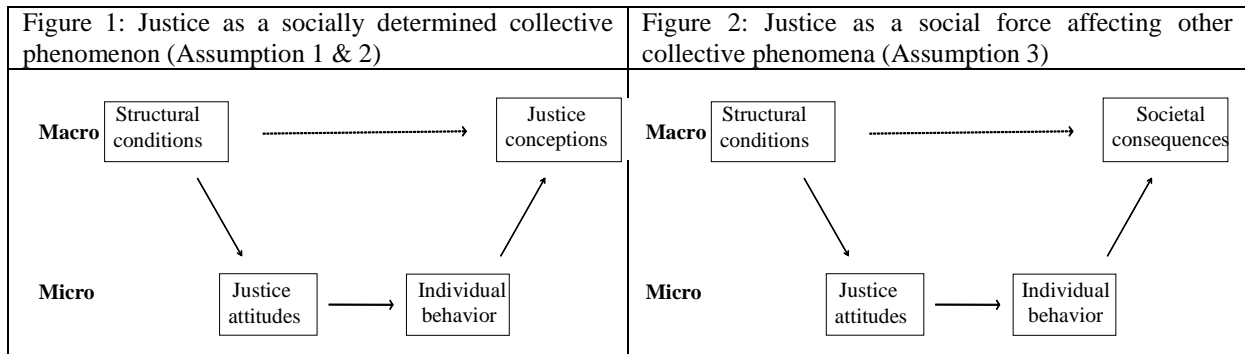
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<sup>1</sup> Lerner (1980), who focuses on the individual level and proposes investment security in transactions of any kind as a relevant motivation to ensure justice, provides one exception. Trivers (1985) arguments are very plausible from an evolutionary perspective; the arguments, however, are not empirically testable.



be singled out—a change in shared notions of justice can be the result of, e.g., a change in the composition of the population in a society (due to immigration or demographic changes), changing economic inequalities or the result of political decisions that may themselves be the outcome of shared notions of justice. The latter issue points to the third problem of identifying the *direction of causation*. If we observe a correlation between the structural conditions of a society and the pattern of shared justice attitudes, we do not know from that single correlation which of the two is affecting the other. The well-known example from Max Weber describes this very well. He stated that the protestant ethic was the driving force for the development of capitalism in western societies. James Coleman (1990) has shown that relying only on observations on the societal level makes it impossible to test the causality and its direction. Such tests are only possible by going down to the level of individuals and asking if and how economic behavior is affected by religious values.

One solution for avoiding these methodological drawbacks is to formulate sociological justice research as a multi-level problem, i.e., going “down” from the level of social aggregates to the level of individuals. The idea “that we must reduce all collective phenomena to the actions, interactions, aims, hopes, and thoughts, of individuals” (Popper, 1949: : 88) is rooted in the thinking of John Stuart Mill, became prominent in economics by Schumpeter (1908) and found its way into contemporary sociology by the work of James S. Coleman (1990). Contrary to the version of methodological individualism that dominates economic thinking, sociological “structural individualism” treats collective phenomena—e.g., social institutions, social relations and social structures—not only as the *explanandum* but also as the *explanans* (Wan, 2012). “Structural individualism” assumes that not only individual behavior and choices but also preferences depend on the past and present structural conditions that constitute the social situation of an individual. By attributing substantial explanatory importance to the social structures in which individuals are embedded (Granovetter, 1985), sociological research is able to release the assumption of economics that preferences are given and stable (Stigler and Becker, 1977) and can treat beliefs and attitudes as functions of the social situation. The central question for justice research is then how individuals acquire their justice attitudes. According to the second assumption, these attitudes are the result of the social conditions individuals are living in over their lifespans. These social conditions are made up of social structures (e.g., distribution of income in a society, institutional order, economic order, social relations), social norms and values, social processes and dynamics of these. On the other hand, “structural individualism” treats social structures and, more generally, all social phenomena as the result of aggregated individual behavior. Justice concerns of individuals may affect the political structures of a society (via collective voting behavior or political protest) or other structural characteristics of a society. Explaining the social determination of social phenomena requires then three steps: first, to show how individuals’ situations, their preferences, beliefs and attitudes (micro level) are affected by the social structure (macro level) (macro → micro); second, to identify which individual behavior results from that situation (micro → micro); and third, how the behavior of the members of a social aggregate constitutes a collective or social phenomenon (micro → macro). Figures 1 and 2 provide a schematic representation of the micro-macro problem.



Treating explanations related to the three why-problems as multi-level problems has the advantage of avoiding the three mentioned methodological and theoretical drawbacks. Going the macro-micro or micro-macro path allows for applying research designs to identify and proof causal effects with larger numbers and testing theories for sufficient explanations. Instead of studying the effects of structural changes on justice at the level of a very limited number of societies, we are now able to ask how changes in structural positions (e.g., due to occupational or regional mobility) influence justice attitudes or behaviors on the level of individuals using large population samples. Additionally, going down to the micro level also enables us to apply experimental methods for testing causal relationships.

Following a long tradition within science, a sufficient explanation is based on universal laws stating that the phenomenon to be explained is the causal consequence of a law operating under particular conditions (Hempel and Oppenheim, 1948). The problem of sociology is that within the social world, these kinds of universal laws have not yet been detected, and sociologists are very pessimistic that they will ever find them on the macro level. But going down to the micro level, causal theories of behavior and attitude formation that refer to universal laws can be applied and tested empirically. In this case, the theoretical primacy lies on the individual level. Accordingly, theories of how individuals adopt their attitudes, how they make decisions, why they show a certain behavior in a given situation, and what causal factors might be important in these processes constitute the core of sociological models within justice research. The three “why-problems” can then be answered by applying action-theoretical models—e.g., using various derivatives of the rational choice paradigm (Kroneberg and Kalter, 2012)—or psychological mechanisms that explain why individuals take up certain views of justice and why they show certain justice-motivated behavior.

But how does sociological differ from psychological justice research if both are concerned with individual attitudes and behavior? The difference is that the sociological approach asks how structural conditions affect an individual’s justice attitudes and vice versa. The explanatory problems are how structures translate into justice attitudes and how justice attitudes translate into social structures. In both cases, the sociological starting point is that the formation of justice attitudes, justice evaluations and reactions are not entirely individual processes, but embedded in social structures, relations and interactions (Hegtvedt and Johnson, 2000).

### *Justice as a social fact*

Sociological research on justice attitudes is mainly interested in the similarities of ideas of justice between individuals and the structural differences within and between societies. Our understanding is that justice attitudes (1) reflect rational individual interests, (2) are influenced by the social conditions individuals are embedded in, and (3) mirror normative beliefs resulting from different learning processes over the lifespan.

From this understanding, it is that justice is not only an individual but also a social phenomenon that makes it particularly interesting for sociological investigation. Justice is an

individual phenomenon in that people have idiosyncratic ideas about what is just and unjust, derive certain expectations of the behavior of others and show specific behavioral reactions to experienced (in)justice. Justice is also a social phenomenon as people, first, share ideas about what justice means and what rules to apply and how to respond to injustice; second, justice is discussed in different ways within social discourses, revealing specific notions of justice that may change over the historical course (Leisering, 2004); third, commonly shared knowledge about what rules apply in which specific contexts across societies or groups exists; and fourth, specific notions of justice are built within the construction plans of social institutions that guide the allocation and distribution of goods and burdens by those institutions (Sesselmeier, 1998).

Drawing on these points, justice can—in Durkheim’s sense—be understood as a *social fact*. Justice is connected to socially shared notions about a positively connoted status quo on the one hand and connected to socially shared rules about the allocation and distribution of goods and burdens on the other. Therefore, justice can be defined as a *social value*. Values are considered as conceptions of the desirable, as they describe a state worth pursuing (Van Deth and Scarbrough, 1995: , p. 28) and “relatively general expectation statements” (Opp, 1983: , 119). The value of justice is connected to the expectation that the allocation and distribution of goods and burdens is guided by the principle of equal treatment, the application of the rule of impartiality, and the observance of legitimate claims.

Social values are always linked to *social norms*. They aim to realize what is regarded as a desirable state and can be described as “relatively specific expectation statements” (Opp, 1983: , p. 119). Accordingly, one has to assign corresponding norms to the value of social justice. These norms are then “sanctions-enabled behavioral expectations” (Weede, 1992) of how to proceed in the allocation and distribution of goods and burdens.

The first challenge for a sociological justice analysis is to explain the existence of both social facts (justice as a value and norms of justice). The explanation cannot be reduced to the argument of the functionality of both phenomena for a society or a group (Hummell, 1988; Popper, 1945/1985) as it was carried out by supporters of the equity theory (Austin and Hatfield, 1980).

As described above, the multi-level model of sociological explanation can be applied to identify the reasons of the existence of both social facts on the micro level. Next, both social phenomena need to be assigned to the macro level. The questions are, then: first, under which conditions and for which allocation and distribution problems the value of justice is selected; second, which norms are applied; third, how these preferences depend on the conditions of the situation and the individual goals; and fourth, which consequences emerge at the macro level. The consequence for a sociological analysis of justice is, therefore, that individual reasons and motives must be accounted for. The key in explaining justice as a social fact is the proof of its individual instrumentality. It is therefore useful to apply a general theory of action that predicts *why* people make decisions and what goals they want to achieve. In a second step, it has to be answered *how* the value and the norms of justice are useful to realize individual goals.

### *The rationality of justice*

The underlying theory of action for the following analysis is the theory of social production functions (SPF, Lindenberg, 1986; Lindenberg, 1991). The theory is one of the current developments of the rational choice paradigm in the social sciences (Kroneberg and Kalter, 2012) and is characterized by theoretical parsimony, enhances the economic concept of utility, and proposes, based on production functions, a hierarchy of goals of human behavior. The basic idea of the theory is to regard individuals as active producers of their subjective well-being. They are not only consumers, but also producers of desired commodities or resources. This assumption allows for the depiction of the realization of individual goals as a

result of a social production function. This implies that individuals use certain means to achieve these goals. When choosing the means to achieve goals, people are not entirely free in their decisions but instead follow the common standards in a society.

Differently from classical economic approaches, the subjective utility (U) in this approach is not exclusively determined by physical resource endowments but is the result of a production function of two elements: (1) physical well-being (PW) and (2) social well-being (SW) (formally:  $U = f [PW, SW]$ ). Both elements describe the general goals to be realized or satisfied by the most efficient use of resources. The resources used are the elements of other production functions. Following Lindenberg, these are means or goals of second-order and include, in the case of physical well-being, comfort (C)<sup>2</sup> and stimulation (ST)<sup>3</sup> ( $PW = f [C, ST]$ ). The production of social well-being is based on status (S), positive affection (A) and behavioral confirmation (BC) ( $SW = f [S, A, BC]$ ) (Ormel et al., 1999; Lindenberg, 1996). To a certain extent, elements within a production function are substitutable. This applies to both the production of the general utility—reduced physical well-being can be substituted by a quantity of social well-being (but not completely), and vice versa—and for the first order goals: When, for example, it is no longer possible to produce social well-being from occupational status due to unemployment, a person can compensate for this loss by actions that provide him or her positive affection in personal relationships or behavioral confirmation by significant others. The greater the efficiency of a production factor for the achievement of goals is, the more likely this production factor is chosen. The second-order goals are thus also the result of specific production functions (status can be produced, for example, by profession). For each of these production functions it is assumed that people have an interest in efficient production conditions (ratio of input and output). For individuals, questions arise as to whether the goals are attainable, which factors of production are needed and whether the factors of production can provide a stable realization of the goals over time. For example, if long-term investments in education are necessary for professional status, there must be, at the beginning of the investment, a certain expectation security that this effort pays off in higher social status and recognition at the end. Thus, the realization of both general goals depends on constraints that may be either beneficial or obstructive. The conditions that ensure the efficient production of permanent physical and social well-being are reliable structure and order, security, stability and predictability (see, Lindenberg, 2013). Thus, individuals have an interest in the formation of these conditions.

Why should the individual regard justice as a desirable state and why should it have an interest in the validity of norms of justice? Our answer has two arguments: (1) The value of justice describes a state in which all interests are equally accounted for without disadvantages. Therefore, situations evaluated as just in comparison to situations evaluated as unjust produce higher social status for the persons involved. Justice is therefore desirable because individuals strive for social well-being to increase their overall utility. (2) The validity of justice norms ensures stable conditions for production functions and therefore provides investment security.

*Social well-being and justice.* A core finding of normative and empirical justice research is that justice issues do not arise in every allocation or distribution process but are bound to specific conditions (Mikula, 2002; Skitka, 2009; Vanberg, 2007). Justice is relevant only in situations in which individual or collective actors decide who should get how much of a good or carry a burden, meaning that outcomes depend on human decisions and not coincidence or other causes. Justice issues arise in social aggregates where injustice is associated with a disregard for individual interests and attacks a person's status as a member of an aggregate.

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<sup>2</sup> "...the degree to which a person is free of noxious stimuli (such as hunger pangs, thirst, pain, and so forth)" (Lindenberg 2013, 77).

<sup>3</sup> "...seeking excitement, arousal, satisfying curiosity" (Lindenberg 2013, p. 77).

Therefore, social acceptance is lower in situations where distributions are realized that are evaluated as unjust (Frey and Stutzer, 2005). From the perspective of SPF, this means that a second-order desire—behavioral confirmation—cannot or can only be conditionally realized.<sup>4</sup> The value of justice and the related norms are therefore relevant for the generation of social recognition within the realization of well-being.<sup>5</sup> Following the theory of social production functions, it is moreover the desire of individuals to receive social recognition for their own behavior.

Goods and burdens have not only a materialistic but also a status value (Berger et al., 1972). A surplus amount of a specific good is often associated with an increase in status, which is in turn a means of social recognition. This is particularly evident for wages and salaries. The individual's income is not only necessary to secure physical well-being or to buy goods for status distinction, the amount of one's income itself has the meaning of a status symbol, with which one can express individuality. At the same time, wage and salary differentials are also the result of differing social recognition for occupations, groups or individuals. The amount of individual income is therefore also an indicator for the individual to determine the own status and, in case of changes, to assess gains or losses in social recognition. Social comparison processes and the rules of justice are hereby important. Because justice rules determine which claims can be made when goods are allocated, the individual cannot only assess what he or she can legitimately expect, but can also evaluate the extent to which actual outcomes match the social standards. The shortfall of these social standards within respective reference groups, or between groups, is then a signal for a lack of social recognition. Rules of justice thus define legitimate interests and help to assess whether one's own efforts and expenses in the cooperative association are useful in producing sufficient social recognition.

*Justice and the conditions of the production functions.* One of the classic reasons for the desire for justice in the literature is that it provides investment security and reliability of expectations (Lerner, 1980). Following SPF, it becomes clear that the desire for security of expectations is not marginal. The desire relates directly to the boundary conditions of one's own production utility. Justice norms are directly related to the input-output ratio of the individual production functions, because they determine who gets what under which conditions and who has to bear burdens. They give detailed information about what one needs to do to fulfill physical or social well-being, because in different social contexts different rules of distribution are valid. At the same time, it is also possible to compare the quality of one's own production functions to those of others. Thus, norms of justice aim towards the conditions of utility production. Their existence and validity can be explained by the desire for expectation and investment security (Liebig and Schupp, 2008) and the wish to optimize one's own utility production in terms of an optimization of the input-output ratio.

#### *The importance of justice*

We now ask how “justice” enters into individual production functions. Our answer is twofold, since there is a direct and an indirect way. The direct connection relates to procedural justice and social well-being. A fair or just treatment of oneself is a sign for social recognition. Therefore, being treated by others in a just way directly affects social well-being. Indirectly, justice norms provide stable conditions for individual SPFs as they define who can expect which kinds of amounts of burdens or rewards. Thus, from a long-term perspective, justice allows for a maximization of the production function, meaning that high efficiency in the production of social and physical well-being is guaranteed.

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<sup>4</sup> “Feeling accepted and confirmed by the group (irrespective of one's status position and irrespective of affection in close relationships within the group) is a separate social need” (Lindenberg 2013, p. 79).

<sup>5</sup> Recent research on happiness and justice also shows a strong positive association between fairness perceptions and subjective well-being (Bjørnskov et al., 2013).

The importance of justice for individuals differs with their endowments in social and physical well-being. Deficits in regard to one of the two goals imply different attention to justice concerns. Deficits in physical or social well-being can occur due to low efficiency of an individual's SPF. If one makes high efforts but only gains low rewards, it decreases physical well-being (indirect justice-effect) and leads to feelings of low social recognition (direct justice-effect). Deficits in physical well-being can be health problems or low earnings (compared to efforts); a deficit in social well-being can occur due to low social status or missing behavioral confirmation.

### **Theoretical predictions**

The primary aim of our analysis is to explain the reasons for why justice is regarded as important. Taking the theory of social production functions and the argumentation above into account, we assume that deficits in physical and social well-being produce the need for justice. The direct effect of procedural justice on social well-being is that it is a signal for social recognition that produces social well-being. Moreover, justice ensures stability of auxiliary conditions and therefore future outcomes of investments. This feature of justice indirectly affects the individual social and physical well-being. People who suffer from deficits with regard to social or physical well-being are especially interested in justice, as they need it to regain balance in their social production functions (see Figure 3). Therefore, we state the *deficit hypothesis* as follows:

**H<sub>1</sub>:** *Deficits in physical and/or social well-being increase the perceived importance of justice (deficit hypothesis).*

If one tries to reduce deficits in one of the two goals, the existence of justice is especially important for institutions and organizations as they ensure that individual interests are taken seriously (direct effect of justice on social well-being) and for middle as well as long term stability and security (indirect effect of justice on physical well-being). Thus, the *efficiency hypothesis* can be formulated as:

**H<sub>2</sub>:** *Deficits in physical and/or social well-being have a stronger positive effect on the importance of justice in the public context than for justice in the private context (efficiency hypothesis).*

The tendency to maximize utility of the individual SPF leads to an assumption with respect to people who are embedded in cooperative groups or have to work with others on corporative outcomes. Justice should be more important for these people than for those working alone, as they need security to prevent exploitation by other group members. Therefore, the *signaling hypothesis* can be stated as:

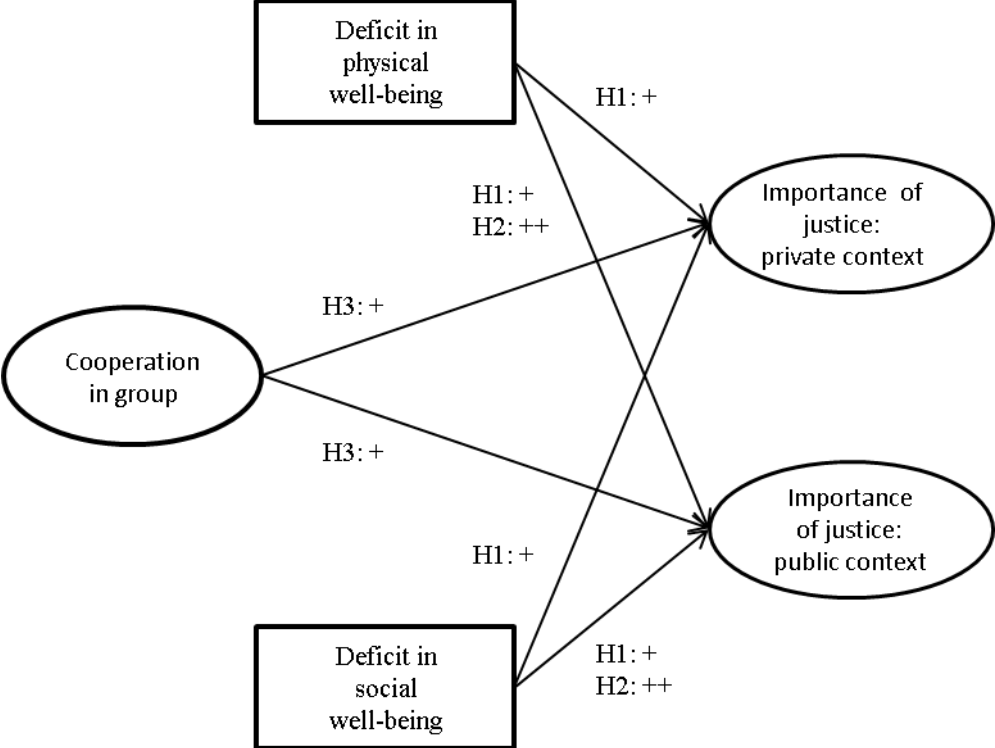
**H<sub>3</sub>:** *The more people are embedded in cooperative tasks, the more important justice is to them (signaling hypothesis).*

The assumed effects on the importance of justice are illustrated in Figure 3, which illustrates our explanatory model for the importance of justice. The arrows indicate the assumed causal connections and the signs indicate the directions of the hypotheses.

After we have derived hypotheses from theories, the assumed relationships need to be tested empirically. Since our *explanandum* – the importance of justice – is a latent construct, which is measured via different variables, which are, in turn, influenced by other constructs,

structural equation modeling (SEM) is used in the analysis to account for the complexity in an adequate way (see, e.g., Acock, 2013; Bollen and Long, 1993; Kline, 2011).

Figure 3: Explanatory model for Importance of Justice



**Data and Measures**

*Data*

The dataset used for the analysis originates from a German employee survey that was conducted in 2012/2013 within a project on justice and inequality. The main goals of the project are to analyze the conditions under which inequalities are perceived as problems of justice and how embedment in different social contexts influences the formation of attitudes regarding justice across the life course. A main focus is to investigate how different social contexts—especially households, social networks, and organizations/workplaces—provide opportunities and constrains in the formation of individual justice attitudes.

Sampling is based on process-generated individual data of the German Institute for Employment Research (IAB). These official registry data contain all people who are employed in Germany and have a social security record. Based on the full dataset, a sample was drawn via stratified random sampling in the self-interviewing modes (paper and pencil (PAPI) and web-based interviews (CAWI)) and via clustered stratified random sampling in the interviewer administered interviews (computer assisted personal interviewing (CAPI)). The target population was restricted to employees between 19 to 59 years of age. The stratification variables for the sampling process included age of employees (three groups) and their tenure (short on and long). The youngest people (under 30) and those who are short on tenure (not more than one year in the same company) have been disproportionally oversampled. The reason for this oversampling is grounded in the long-term perspective of the project that wants to follow employees over a longer period to investigate how changing organizational contexts change attitudes towards justice and attached behavior. The reason for clustering the interviewer-administered interviews was to keep the costs for interviews in

balance. As interviewers would have had to drive long distances to get to different interview addresses if they would have been completely random, we first sampled regions (60 labor agency districts out of 250) and then within these sample points, employees were drawn by the same stratified sampling procedure as in the self-administered versions. Twenty-five percent of the respondents were interviewed by an interviewer; the other respondents had the opportunity to either fill in a paper questionnaire which they received by mail or to participate online in a web based survey via an email invitation with a personal link. The link for the web-survey was only valid once. Moreover, due to base information in the IAB sampling data on age and sex, it was possible to check if the target person themselves filled in the questionnaire or whether it was completed by somebody else. Aside from the different layouts of the questionnaires all survey modes contained the same questions in the same order. The full data set consists of 4,731 observations. For the analysis, we excluded those respondents with missing values; therefore, the following analysis is based on 2,926 observations.

### *Measures*

The latent construct to be explained is the *importance of justice* in different social contexts. The data set provides an item set which asks the respondents how important justice is for them in different areas of life. The four items are measured via a seven-point rating scale ranging from “not important at all” (1) to “very important” (7). These items are used to build the two variables in the SEM, namely the following latent constructs: *private context*, which is measured via two items concerning importance of justice in “your partnership and your family” and in “your circle of friends” (Cronbachs  $\alpha = 0.830$ ). The other social context considered is the *public context*, which is constructed by using two items with respect to the importance of justice at “your workplace” and in the “society” (Cronbachs  $\alpha = 0.808$ ).

The main explanatory variables (see Figure 3) are the deficits in the realization of the two universal goals, i.e., physical well-being (PW) and social well-being (SW). From the SPF, one can derive specific components influencing an individual’s physical and social well-being (see Ormel et al. 1999). The dataset contains two item sets, each describing the same eight different components of PW and SW (see Figure A1 and Figure A2 in Appendix for the two item batteries). Physical well-being consists of “the possibility to be physically or mentally active”, “the housing situation” and “the condition of health.” Social well-being is measured by the following items: “an occupation’s prestige in society”, “one’s achievements in life compared to those of others”, “social approval one receives from friends and acquaintances”, “social approval one receives at work” and “the affection one receives from their own partner and family”. The *importance* of PW and SW is ascertained with the first item set that asks the respondents the following: “The general well-being of a person is based on several things. How much do the following aspects determine your general well-being?” A seven-point rating scale ranging from “not at all” (1) to “very much” (7) is used. The second item set assesses the *realization* of PW and SW (“and how satisfied are you with these things in your life?”) by the measurement of satisfaction with the eight components. This item set uses an 11-point rating scale ranging from “completely dissatisfied” (0) to “completely satisfied” (10).

To allow comparability between the two item sets, all 16 items were standardized (mean = 0, standard deviation = 1). After standardization, the individual average importance and the individual average realization were calculated, each separately for PW and SW.

The resulting indices were used for two bivariate regressions (see below) to determine the deficits in PW and SW by retaining the residuals of PW and SW: A deficit is estimated with a bivariate regression and extracting the residuals. The average realization of the instrumental goal (i.e., physical or social well-being) explains the average importance of the respective instrumental goal, while the residuals represent the deficit in the realization of the instrumental goal. A positive residual indicates that the value for the importance of the



respective goal is higher than the value for the realization of this goal; therefore, a deficit exists and vice versa. The larger the residual, the bigger is the difference between importance and realization and, therefore, the bigger is the deficit. The bivariate regression equations are:

$$\begin{aligned} \text{PW:} & \quad \text{mean(Importance}_{\text{PW}}) = \alpha + \text{mean(Realization}_{\text{PW}}) + \varepsilon \\ \text{SW:} & \quad \text{mean(Importance}_{\text{SW}}) = \alpha + \text{mean(Realization}_{\text{SW}}) + \varepsilon \end{aligned}$$

The latent construct *Cooperation in a group* measures the degree of cooperative involvement with respect to the workplace and is measured via three items coming from an item set which assesses the respondent's everyday experience at work. The respondents were asked to rate how much the described statements apply to their work situation on a seven-point rating scale from "does not apply at all" (1) to "applies completely" (7). The three considered aspects are "help of colleagues", "collaboration with colleagues" and "being on one's own."

Additionally, other individual characteristics are included in the SEM that influence the measures described above. These variables are: age (in years), sex (1 = male), occupational status measured by the International Socio-Economic Index of Occupational Status (ISEI, Ganzeboom et al., 1992), logarithmic household income and years of education. The descriptive statistics of the variables included in the model are shown in Table 1.

Table 1: Summary statistics of used variables

Variables	mean	sd	min	max
<i>Importance of justice: private context</i>				
Importance of justice in relationship and family	6.674	0.776	1	7
Importance of justice in circle of friends	6.423	0.917	1	7
<i>Importance of justice: public context</i>				
Importance of justice at the workplace	6.467	0.851	1	7
Importance of justice in society	6.343	0.956	1	7
<i>SPF measures</i>				
Deficit in physical well-being	0.0334	0.698	-4.915	1.697
Deficit in social well-being	0.0031	0.664	-3.354	1.824
<i>Cooperation in group</i>				
Workplace: help of colleagues	5.754	1.559	1	7
Workplace: collaboration with colleagues	5.191	1.854	1	7
Workplace: being on one's own	3.755	2.041	1	7
<i>Socio-demographics</i>				
Age	37.46	11.05	14	85
Sex [male = 1]	0.503	-	0	1
Years of education	13.43	2.672	7	18
ISEI	47.16	15.48	16	88
Household income [ln]	7.980	0.547	4.615	11.47

Source: Own employee survey; N = 2,926.

## Results

The hypotheses were tested using Structural Equation Modeling (SEM). The general specification parameters of the model (RMSEA = .041; CFI = .970; TLI = .943) indicate a good fit (see, e.g., Hu and Bentler, 1999; Marsh et al., 2004). The key measures are the deficits of social and physical well-being on the importance of justice. Figure 4 shows the standardized path coefficients, and the full model specification is shown in Table A1 in the appendix.

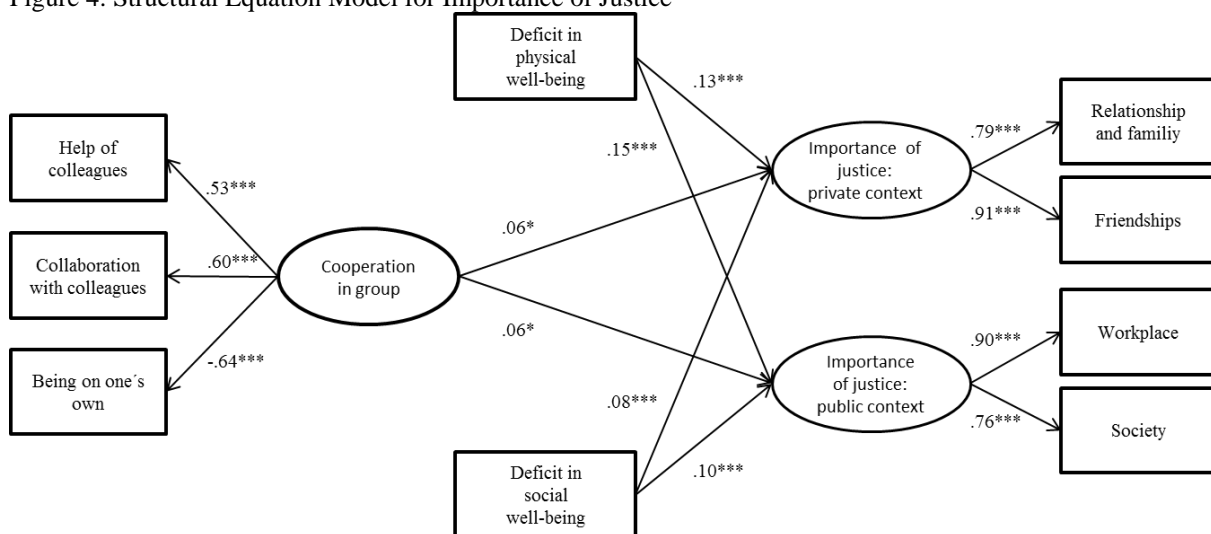
First, the importance of justice in the private context is positively influenced by the deficit in physical well-being ( $p < .001$ ) and social well-being ( $p < .001$ ) (see Figure 4). When the deficits of social well-being or physical well-being increase, justice in personal relationships becomes more important. Second, the importance of justice at the workplace and in the

society is also positively influenced by deficits in physical and social well-being. Increases in a deficit of social well-being increase the importance of justice in the public context significantly ( $p < .001$ ). The same is true for social well-being ( $p < .001$ ). These results confirm the deficit hypothesis that predicts a positive influence of deficits in physical and/or social well-being on importance of justice in both life contexts, e.g., the private and the public.

The second hypothesis (efficiency hypothesis) predicts that deficits in physical and social well-being have a stronger positive effect on the importance of justice in the public context than in the private context. The test for this differing intensity of the influence of physical well-being between these two contexts indicates significance ( $\text{Chi}^2 = 6.61$ ;  $p = .010$ ). It can also be shown that the influence of a deficit of social well-being is more pronounced for the importance of justice in the public context ( $\text{Chi}^2 = 4.62$ ;  $p = .032$ ). Hence, the efficiency hypothesis can also be confirmed.

Our third hypothesis (signaling hypothesis) predicts a positive effect of the cooperation in groups on the importance of justice. The analysis reveals that the latent construct cooperation in a group, which measures the intensity of cooperative involvement at the workplace, indeed has a positive effect on the importance of justice in private contexts ( $p = .013$ ) and also in public contexts ( $p = .028$ ), as expected. This result indicates that people who have to act in cooperative relationships have to focus more on justice concerns to ensure that others will not exploit them. Hence, the signaling hypothesis can be confirmed.

Figure 4: Structural Equation Model for Importance of Justice



Notes: Standardized coefficients;  $\text{Chi}^2 = 255.126$  df (43);  $\text{Chi}_{\text{base}}^2 = 7133.345$  df (81);  $p < 0.001$ ; RMSEA = .041; CFI = .970; TLI = .943; Control variables, variances and covariances not displayed, see Table A1 in Appendix for the full specified model; Calculations with Stata 13.1; Levels of significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Source: Own employee survey;  $N = 2,926$ .

## Conclusions

The paper investigated why justice is seen as a valuable state in social interactions and in society. Therefore, general sociological models of action and the theory of social production functions (SPF) (Kahneman et al., 1991; Tversky and Kahneman, 1991; Lindenberg, 1986; Lindenberg, 1991; Lindenberg, 1996; Ormel et al., 1999) were used to explain the rationality of justice on the individual level. SPF states that people strive for two fundamental goals—

physical and social well-being. We argued that the direct effect of justice for individual social production functions is the increase in social well-being that comes along with procedural justice. This is in line with other models that connect justice and well-being (Frey and Stutzer, 2005; Bjørnskov et al., 2013). The indirect effect of justice on individual social production functions is that it provides stability of auxiliary conditions and therefore leads to predictability of outcomes and efficiency of these functions. Moreover, it provides protection from exploitation by others in interactions as justice provides standards that ensure equal consideration of interests.

Based on this theoretical background, the study developed an explanatory model for the rationality of justice. We hypothesized that deficits in physical and social well-being increase the importance of justice in private and public contexts (deficit hypothesis), and we argued that the influences of these deficits would be stronger in public context (i.e. workplace and society) than in the private context, as the public context is more important for the efficient use of means to reach individual goals (efficiency hypothesis). The empirical analysis supported both hypotheses. It confirmed the assumption that deficits in the endowments with physical or social well-being influence the perceived importance of justice: increasing deficits of these endowments lead to an increased importance of justice. Our third hypothesis (signaling hypothesis) stated that the degree of involvement in a cooperative situation, i.e., being dependent on the work and cooperation of others, increases the importance of justice because it ensures that one is not exploited. The analysis also confirms this hypothesis: the more people are interconnected to others at their workplace and are dependent of cooperation to produce outcomes, the more they think that justice should be important. This makes sense, as justice and the reliance on justice norms again ensure predicable outcomes and protect people of exploitation from others. This is in line with results by Henrich et al. (2010) who find that people who rely on non-kin cooperation or cooperation with strangers have to ensure that justice is in place to ensure the fulfillment of their own goals besides the fulfillment of the cooperative goals.

This study gives new empirical insights on the role of justice as a vehicle for gaining balance between needs and their fulfillment. Justice can guarantee stability and predictability of outcomes—a crucial factor if one tries to improve the own situation, which is connected to an increasing effort and a use of resources. The study provided the explanatory path of how justice becomes an important category for people who are assumed to act as stated in SPF. Therefore, the paper contributes to the question of how justice becomes a crucial social force in human attitude formation processes and behavior in social situations. Moreover, the importance of justice in the public context was more strongly affected by the individual endowments regarding physical and social well-being than in the private context. This is in line with the theoretical predictions and is also supported by findings of earlier studies that do not treat the prosocial attitudes of humans as a psychological trait but as influenced by the institutions and interaction partners people deal with. Henrich et al. (2010) show that in cooperative interaction situations with strangers fairness or justice especially matters, as it is normally guaranteed by institutions and their rules. All in all, the paper provides a theoretical explanation grounded in a generic explanation of individual behavior (2013, 2015) and is the first test of this general model.

## References

Acock AC. (2013) *Discovering structural equation modeling using Stata*, College Station: Stata Press.

- Austin W and Hatfield E. (1980) Equity Theory, Power, And Social Justice. In: Mikula G (ed) *Justice and Social Interaction*. New York: Academic Press, 25-61.
- Berger J, Zelditch Jr. M, Anderson B, et al. (1972) Structural Aspects of Distributive Justice: A Status-Value Formulation. In: Berger J, Zelditch M and Anderson B (eds) *Sociological Theories in Progress, Volume 2*. Boston: Houghton Mifflin, 119-246.
- Bjørnskov C, Dreher A, Fischer JAV, et al. (2013) Inequality and happiness: When perceived social mobility and economic reality do not match. *Journal of Economic Behavior & Organization* 91(0): 75-92.
- Bollen KA and Long JS. (1993) *Testing structural equation models*, Newbury Park: Sage.
- Bunge M. (2009) *Philosophy of science: from explanation to justification*, London: Transaction Publishers.
- Coleman JS. (1990) *Foundations of social theory*, Cambridge: Belknap.
- Frey BS and Stutzer A. (2005) Beyond outcomes: measuring procedural utility. *Oxford Economic Papers* 57(1): 90-111.
- Ganzeboom HBG, De Graaf PM and Treiman DJ. (1992) A Standard International Socio-Economic Index of Occupational Status. *Social Science Research* 21(1): 1-56.
- Granovetter M. (1985) Economic action and social structure: the problem of embeddedness. *American Journal of Sociology* 91(3): 481-510.
- Greenberg J. (1990) Employee theft as a reaction to underpayment inequity: The hidden cost of pay cuts. *Journal of Applied Psychology* 75(5): 561-568.
- Hegtvedt KA and Johnson C. (2000) Justice beyond the individual: A future with legitimation. *Social Psychology Quarterly* 63(4): 298-311.
- Hempel CG and Oppenheim P. (1948) Studies in the Logic of Explanation. *Philosophy of Science* 15(2): 135-175.
- Henrich J, Ensminger J, McElreath R, et al. (2010) Markets, Religion, Community Size, and the Evolution of Fairness and Punishment. *Science* 327(5972): 1480-1484.
- Hu L and Bentler PM. (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal* 6(1): 1-55.
- Hummell HJ. (1988) Moralische Institutionen und die Ordnung des Handelns in der Gesellschaft. In: Ebert K (ed) *Alltagswelt und Ethik. Beiträge zu einem sozial-ethischen Problemfeld*. Wuppertal: Hammer, 245-271.
- Kahneman D, Knetsch JL and Thaler RH. (1991) Anomalies: The endowment effect, loss aversion, and status quo bias. *Journal of Economic Perspectives* 5: 193-206.
- Kittel B. (2006) A crazy methodology? On the limits of macro-quantitative social science research. *International Sociology* 21(5): 647-677.
- Kline RB. (2011) *Principles and practice of structural equation modeling*, New York: Guilford Press.
- Kroneberg C and Kalter F. (2012) Rational Choice Theory and Empirical Research: Methodological and Theoretical Contributions in Europe. *Annual Review of Sociology* 38: 73-92.
- Leisering L. (2004) Paradigmen sozialer Gerechtigkeit. Normative Diskurse im Umbau des Sozialstaats. In: Liebig S, Lengfeld H and Mau S (eds) *Verteilungsprobleme und Gerechtigkeit in modernen Gesellschaften*. Frankfurt a. M.: Campus, 29-68.
- Lerner MJ. (1980) *The belief in a just world. A fundamental delusion*, New York: Plenum.
- Liebig S and Sauer C. (2013) Soziologische Gerechtigkeitsanalyse. Überlegungen zur theoretischen Fundierung eines Forschungsfeldes. *Analyse und Kritik* 35(2): 371-394.
- Liebig S and Sauer C. (2015) Sociology of justice. In: Sabbagh C and Schmitt M (eds) *Handbook of Social Justice Theory and Research*. New York: Springer.

- Liebig S and Schupp J. (2008) Leistungs- oder Bedarfsgerechtigkeit? Über einen normativen Zielkonflikt des Wohlfahrtsstaats und seiner Bedeutung für die Bewertung des eigenen Erwerbseinkommen. *Soziale Welt* 59(1): 7-30.
- Lindenberg S. (1986) Individual economic ignorance versus social production functions and precarious enlightenment. *Journal of Institutional and Theoretical Economics* 142: 20-26.
- Lindenberg S. (1991) Social approval, fertility and female labour market behaviour. In: Siegers J, De Jong-Gierveld J and Van Imhoff E (eds) *Female Labour Market Behaviour and Fertility: A rational Choice Approach*. Berlin/ New York: Springer, 32-58.
- Lindenberg S. (1996) Continuities in The Theory of Social Production Functions. In: Ganzeboom H and Lindenberg S (eds) *Verklarende Sociologie: Opstellen voor Reinhard Wippler*. Amsterdam: Thela Thesis, 169-184.
- Lindenberg S. (2013) Social rationality, self-regulation and well-being: The regulatory significance of needs, goals, and the self. In: Wittek R, Snijders TAB and Nee (eds) *Handbook of Rational Choice Social Research*. Stanford: Stanford University Press, 72-112.
- Marsh HW, Hau K-T and Wen Z. (2004) Search of Golden Rules: Comment on Hypothesis-Testing Approaches to Setting Cutoff Values for Fit Indexes and Dangers in Overgeneralizing Hu and Bentler's (1999) Findings. *Structural Equation Modeling: A Multidisciplinary Journal* 11(3): 320-341.
- Mayntz R. (2002) Zur Theoriefähigkeit makro-sozialer Analysen. In: Mayntz R (ed) *Akteure-Mechanismen-Modelle*. Frankfurt: Campus, 7-43.
- Mikula G. (2002) Gerecht und ungerecht: Eine Skizze der sozialpsychologischen Gerechtigkeitsforschung. In: Held M, Kubon-Gilke G and Sturn R (eds) *Normative und institutionelle Grundfragen der Ökonomik. Jahrbuch 1: Gerechtigkeit als Voraussetzung für effizientes Wirtschaften*. Marburg: Metropolis Verlag, 257-278.
- Mühleck K. (2009) *Gerechtigkeit und Wahlverhalten. Gerechtigkeitswahrnehmung und Gerechtigkeits Einstellungen als Motive politischen Handelns*, Baden-Baden: Nomos.
- Opp K-D. (1983) *Die Entstehung sozialer Normen. Ein Integrationsversuch soziologischer, sozialpsychologischer und ökonomischer Erklärungen*, Tübingen: Mohr Siebeck.
- Ormel J, Lindenberg S, Steverink N, et al. (1999) Subjective well being and social production functions. *Social Indicator Research* 46: 61-90.
- Popper KR. (1945/1985) The Autonomy of Sociology. In: Miller D (ed) *Popper Selections*. Princeton: Princeton University Press, 345-356.
- Popper KR. (1949) *The open society and its enemies*, London: Routledge & Kegan Paul.
- Schumpeter JA. (1908) *Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie*, Leipzig: Duncker & Humblot.
- Sesselmeier W. (1998) Negative Einkommenssteuer und soziale Gerechtigkeit. In: Blasche S and Döring D (eds) *Sozialpolitik und Gerechtigkeit*. Frankfurt a. M.: Campus, 356-383.
- Skitka L. (2009) Exploring the “lost and found” of justice theory and research. *Social Justice Research* 22: 98-116.
- Stigler GJ and Becker GS. (1977) De gustibus non est disputandum. *The American Economic Review* 67(2): 76-90.
- Trivers R. (1985) *Social Evolution*, Menlo Park: Benjamin/Cummings.
- Tversky A and Kahneman D. (1991) Loss aversion in riskless choice: A referent-dependent model. *Quarterly Journal of Economics* 106: 1039-1061.
- Tyler TR. (2001) Why do people rely on others? Social identity and social aspects of trust. In: Cook KS (ed) *Trust in Society*. New York: Sage, 285-306.

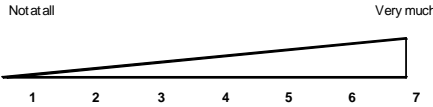
- Van Deth JW and Scarbrough E. (1995) The concept of values. In: Deth JWv and Scarbrough E (eds) *The Impact of Values*. Oxford: Oxford University Press, 21-47.
- Vanberg V. (2007) Marktwirtschaft und Gerechtigkeit – Idee und Kritik der sozialen Gerechtigkeit im Konzept der Sozialen Marktwirtschaft. In: Empter S and Vehrkamp RB (eds) *Soziale Gerechtigkeit – eine Bestandsaufnahme*. Gütersloh: Bertelsmann-Stiftung, 25-50.
- Wan PY. (2012) Analytical sociology: A Bungean appreciation. *Science and Education* 21: 1545–1565.
- Weede E. (1992) *Mensch und Gesellschaft. Soziologie aus der Perspektive des methodologischen Individualismus*, Tübingen: Mohr.

## Appendix

Figure A1: Social production functions (SPF): Question 1: *Value* of first-order instrumental goals

The general well-being of a person is based on several things.  
**How much** do the following things determine your general well-being?

Please check one box for each item using the following scale:  
 1 means "not at all",  
 7 means "very much".  
 If it somewhat determines / does not determine your well-being, use a number in between.



	1	2	3	4	5	6	7
A The possibility to be physically or mentally active?	-	-	-	-	-	-	-
B Your housing ?	-	-	-	-	-	-	-
C Your health ?	-	-	-	-	-	-	-
D The social reputation of your work ?	-	-	-	-	-	-	-
E Your achievements in life compared to those of others?	-	-	-	-	-	-	-
F The recognition you receive from your friends and acquaintances ?	-	-	-	-	-	-	-
G The recognition you receive at work ?	-	-	-	-	-	-	-
H The love you get from your partner and family?	-	-	-	-	-	-	-

Source: Own employee survey.

Figure A2: Social production functions (SPF): Question 2: *Realization* of first-order instrumental goals

And how **satisfied** are you with these things in your life ?

	How satisfied are you with	completely dissatisfied										completely satisfied		
		0	1	2	3	4	5	6	7	8	9	10		
A	Your possibility of being physically or mentally active ?	-	-	-	-	-	-	-	-	-	-	-	-	-
B	Your housing ?	-	-	-	-	-	-	-	-	-	-	-	-	-
C	Your health ?	-	-	-	-	-	-	-	-	-	-	-	-	-
D	The social reputation of your work ?	-	-	-	-	-	-	-	-	-	-	-	-	-
E	Your achievements in life compared to those of others?	-	-	-	-	-	-	-	-	-	-	-	-	-
F	The recognition you receive from your friends and acquaintances ?	-	-	-	-	-	-	-	-	-	-	-	-	-
G	The recognition you receive at work ?	-	-	-	-	-	-	-	-	-	-	-	-	-
H	The love you get from your partner and family?	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Own employee survey.

Table A1: Full Structural Equation Model for Importance of Justice

<b>Measurement Model</b>			
<b>Parameter Estimates</b>	<b>Unstan- dardized</b>	<b>SE</b>	<b>Stand- ardized</b>
Importance of justice: private context → Relationship and family	1.000	(.)	0.789
Importance of justice: private context → Circle of friends	1.365***	-0.038	0.911
Importance of justice: public context → Workplace	1.000	(.)	0.902
Importance of justice: public context → Society	0.942***	-0.031	0.756
Cooperation in group → Help of colleagues	1.000	(.)	0.530
Cooperation in group → Collaboration with colleagues	1.341***	-0.080	0.598
Cooperation in group → Being on one's own	-1.591***	-0.097	-0.645
<b>Variances</b>			
Deficit in physical well-being	0.467***	-0.012	0.958
Deficit in social well-being	0.432***	-0.011	0.981
Relationship and family	0.227***	-0.011	0.378
Circle of friends	0.143***	-0.017	0.170
Workplace	0.135***	-0.017	0.187
Society	0.391***	-0.018	0.428
Help of colleagues	1.747***	-0.062	0.719
Collaboration with colleagues	2.208***	-0.093	0.643
Being on one's own	2.435***	-0.121	0.585
Importance of Justice Private context	0.355***	-0.016	0.950
Importance of Justice Public context	0.538***	-0.024	0.914
Cooperation in group	0.674***	-0.060	0.987
Age	121.955***	-3.188	1.000
Household income [ln]	0.300***	-0.008	1.000
Sex [male = 1]	0.250***	-0.007	1.000
Years of education	7.942***	-0.208	1.000
ISEI	239.437***	-6.260	1.000
<b>Covariances</b>			
Deficit in physical well-being * Deficit in social well-being	0.129***	-0.009	0.288
Circle of friends * Society	0.054***	-0.010	0.226
Importance of Justice Private context * Importance of Justice Public context	0.280***	-0.012	0.640
Age * Household income [ln]	0.782***	-0.113	0.129
Age * Sex [male = 1]	-0.014	-0.102	-0.003
Age * Years of education	-1.389*	-0.576	-0.045
Age * ISEI	-6.916*	-3.162	-0.040
Household income [ln] * Sex [male = 1]	0.011*	-0.005	0.039
Household income [ln] * Years of education	0.410***	-0.030	0.266
Household income [ln] * ISEI	2.367***	-0.163	0.280
Sex [male = 1] * Years of education	-0.012	-0.026	-0.009
Sex [male = 1] * ISEI	0.070	-0.143	0.009
Years of education * ISEI	28.216***	-0.960	0.647



Table A1: Full Structural Equation Model for Importance of Justice (*continued*)

<b>Structural Model</b>			
<b>Parameter Estimates</b>	<b>Unstan- dardized</b>	<b>SE</b>	<b>Stand- ardized</b>
<i>Deficit in physical well-being</i>			
Age	0.005***	-0.001	0.079
Household income [ln]	0.042	-0.025	0.033
Sex [male = 1]	-0.143***	-0.025	-0.103
Years of education	0.020***	-0.006	0.080
ISEI	0.004***	-0.001	0.081
<i>Deficit in social well-being</i>			
Age	-0.005***	-0.001	-0.091
Household income [ln]	0.067**	-0.024	0.055
Sex [male = 1]	-0.107***	-0.024	-0.081
Years of education	-0.013*	-0.006	-0.055
ISEI	-0.001	-0.001	-0.026
<i>Importance of justice: private context</i>			
Deficit in physical well-being	0.117***	-0.018	0.134
Deficit in social well-being	0.071***	-0.019	0.077
Cooperation in group	0.046*	-0.019	0.063
Age	0.000	-0.001	0.002
Household income [ln]	-0.029	-0.023	-0.026
Sex [male = 1]	-0.041	-0.024	-0.034
Years of education	-0.030***	-0.006	-0.136
ISEI	0.000	-0.001	0.005
<i>Importance of justice: public context</i>			
Deficit in physical well-being	0.169***	-0.023	0.153
Deficit in social well-being	0.115***	-0.024	0.099
Cooperation in group	0.051*	-0.023	0.055
Age	0.003*	-0.001	0.043
Household income [ln]	-0.080**	-0.029	-0.057
Sex [male = 1]	-0.170***	-0.030	-0.111
Years of education	-0.033***	-0.007	-0.121
ISEI	-0.002	-0.001	-0.036
<i>Cooperation in group</i>			
Years of education	0.040***	-0.009	0.136
ISEI	-0.002	-0.002	-0.042

Notes: Model fit:  $\chi^2 = 255.126$  df (43);  $\chi^2_{\text{base}} = 7133.345$  df (81);  $p < 0.001$ ; RMSEA = .041; CFI = .970; TLI = .943; Calculations with Stata 13.1; Levels of significance: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Source:

Source: Own employee survey; N = 2,926.

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