



Original citation:

Racko, Girts. (2017) The values of economics. Journal of Business Ethics.
doi: 10.1007/s10551-017-3442-5

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The Values of Economics

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Received: 5 August 2016 / Accepted: 9 January 2017
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Abstract This study addresses a fundamental concern of research on economic ethics by examining the values of economics. While other studies have linked the study of economics to the adoption of rational economic behavior, this study goes one level deeper, investigating the values that underpin neoclassical economics and whether they are transmitted to students. We find that the study of economics is associated with an increase in hedonism and power values, a decrease self-direction value, and possibly a decrease in universalism value. We measure value change among economics students using a quasi-experimental research design in accordance with the methodology of research on academic socialization. We discuss the practical implications of the internalization of economic values.

Keywords Economics · Economics education · Homo economicus · Values

Introduction

Understanding the values of economics has been a fundamental concern of research on economic ethics (Hirschman 1977; Sen 1987; Nelson 2006). While prior studies have investigated the values of economics by measuring the impact of neoclassical economics education on the rational economic behavior of students (e.g., Frank et al. 1993; Lynnette and Davis 2004; Wang et al. 2011), this study

goes one level deeper. This study investigates the values of economics by assessing the impact of economics education, not on student behavior, but on changes in student values. Drawing on economic and sociological theories, we propose that the study of economics is likely to result in an increase in the priority of hedonism and power values and a decrease in the priority of universalism and self-direction values.

Previous studies have typically examined the impact of economics education on student behaviors by using a cross-sectional research design (e.g., Carter and Irons 1991; Frey and Meier 2005), which does not permit deriving inferences about attribute changes over time. We measure changes in the values of economics students over time and control the measurement of student value change for the confounding effects of students' socio-demographic and academic characteristics in accordance with the theoretical models of academic socialization (Weidman 1989; Pascarella and Terenzini 2005).

This paper is structured as follows. In the next section, we discuss the values of economics. We then outline the methods used in our study and present the results of the data analyses. We conclude by discussing the practical implications of our findings.

The Values of Economics

Human values are enduring normative beliefs that guide human actions, such as behaviors, attitudes, and mental processes (Rokeach 1973; Schwartz 1992). In an influential contribution to value conceptualization, Rokeach (1973) defined values as normative beliefs about how life ought to be. A value is a normative belief "that a specific mode of conduct or end-state of existence is personally or socially

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preferable to an opposite or converse mode of conduct or end-state of existence” (Rokeach 1973: 5). As normative beliefs about desirable modes of action, values cannot be reduced to a property of an object, such as its economic value or cost, or to a particular behavior, such as utility maximization in economic valuation studies. Values are normative beliefs that serve the interests of society and guide the selection, evaluation, and justification of human actions (Rokeach 1973; Schwartz 1992).

In contrast to attitudes, which tend to be context specific, values are relatively enduring and systematically guide human actions across distinct contexts (Rokeach 1973). The enduring, trans-contextual property of values means that they change gradually over longer periods of time (Bardi et al. 2009). For example, people tend to experience value change during their long-term involvement in new social and vocational experiences (Hitlin and Piliavin 2004; Inglehart and Welzel 2005). In institutions of higher education, students undergo value change by aligning their values with the normative priorities of an academic field of study (Pascarella and Terenzini 2005).

Neoclassical economists conceive of economics as an objective science that is devoid of human values (Friedman 1953; Samuelson 1963). Inspired by the positivist assumptions of natural science, economics is conceived as a science that provides generalizations based on empirical facts and deals with what “is” rather than what “ought to be” (Friedman 1953). As a positive science, economics studies “human behavior as a relationship between ends and scarce means” without regard for the value assumptions of the ends that are pursued (Robbins 1935: 15). Thus, an understanding of the values that underpin economics is irrelevant because the values do not affect the predictive power of the phenomena that economics intends to explain (Friedman 1953).

Nonetheless, economics is recognized as being embedded in the values of homo economicus (rational economic individual), who calculates and uses the most effective means available for the pursuit of a desired end (Hollis and Nell 1975). The whole universe of theoretical concepts in neoclassical economics is based on the assumption of the instrumentally rational behavior of homo economicus (Ferraro et al. 2005; Dierksmeier 2011). Economics thus not only develops generalizations about individual behavior, but also shapes the behavior of those individuals who apply its principles and are thereby guided by its values (Weber 1978; Racko 2011).

Research has linked the study of economics to an increase in instrumentally rational behavior. Economics education is associated with an increase in instrumentally rational behavior in hypothetical scenarios where participants have to report a billing mistake (Frank et al. 1993; Yezer et al. 1996), divide money among themselves (Carter

and Irons 1991), and contribute money to a university public fund (Frey and Meier 2005). Economics students are more likely than students of other disciplines to engage in free-riding behaviors (Marwell and Ames 1981) and to endorse the morality of greed as an extreme form of instrumentally rational behavior (Wang et al. 2011). Similarly, compared to students of other disciplines, business students tend to be more instrumentally rational regarding management ethics (Huehn 2014), more dishonest in their studies (Lynnette and Davis 2004), and more likely to experience an increase in the priority of self-interested behaviors, such as shareholder value maximization, during a study (Aspen Institute 2001). Students are particularly likely to adopt instrumentally rational behaviors and goals in academic programs where the curriculum is homogeneously structured by the values of homo economicus, such as programs that place a higher emphasis on the principles of game theory and industrial organization (Frank et al. 1993) and in which students are less exposed to classes in other social sciences and the humanities (Racko et al. 2016). While some studies have found that economics students are already more instrumentally rational than other students at the beginning of their academic programs (Carter and Irons 1991; Frey and Meier 2005), other studies suggest that an increase in instrumentally rational behavior during a course of study cannot be explained in terms of students’ self-selection into an economics program based on their pre-enrollment behavior (Frank et al. 1993; Wang et al. 2011).

Prior studies have mostly investigated the normative impact of economics education by measuring changes in student behaviors without examining changes in the values that underpin economics. Instrumentally rational behavior is likely to be guided by the values of economics, but it may not be reducible to them alone (Hollis and Nell 1975; Ferraro et al. 2005; Weber 1978). While values are motivationally enduring beliefs that remain stable across distinct contexts and change gradually over longer periods of time, behaviors are more context specific and more dependent on external reinforcement (Rokeach 1973). For example, individuals may only engage in instrumentally rational behavior in social contexts where such behavior is incentivized, such as with extrinsic rewards. Also, the normative effect of the internalization of economic values may already be manifested at a stage at which individuals think in an instrumentally rational way rather than just at the stage at which calculative thinking predisposes individuals to engage in instrumentally rational behaviors. Moreover, previous studies have largely focused on the basic conceptual characteristics of rational economic behavior, such as the pursuit of self-interest or free-riding, and have rarely contemplated conceptual insights that consider the values of homo economicus at a higher level

of abstraction. We draw on the more abstract economic and sociological conceptualizations on the values of homo economicus to examine the impact of the study of economics on student values.

Hedonism

The values of economics emphasize the pursuit of hedonism (Drakopoulos 1991; Dierksmeier 2011). Jeremy Bentham assumed that people were motivated exclusively by the maximization of pleasure and minimization of pain (Bentham 1823). John Stuart Mill relied on Bentham to conceptualize pleasure maximization as a motivational foundation of a particular form of action, namely rational economic action of homo economicus, instead of all forms of action as Bentham proposed (Mill 1874/1967). Nineteenth-century marginalist economists incorporated Bentham's principles of hedonistic pursuit by conceptually linking the maximization of economic utility to the maximization of pleasure. For example, homo economicus was conceived as maximizing utility by increasing the ratio of pleasure to pain (Jevons 1871/1970), thus seeking the greatest possible satisfaction of the individual's wants (Walras 1874/1965) and pursuing a maximum of pleasurable ends using a minimal investment of means (Edgeworth 1881).

The subsequent formalization of economic theory based on the assumptions of positivism resulted in the gradual replacement of the concept of "hedonistic maximization" with the concepts of "utility" and "satisfaction" (Lewin 1996). Pareto (1971) and Fisher (1912) sought to exclude hedonism values from economic theory by using positivist methodology to study the satisfaction of wants and interests. Leading neoclassical economists of the twentieth century, such as Hicks and Samuelson, attempted to further purify economics from hedonism values by replacing the concepts of "utility" and "satisfaction" with the supposedly more value-neutral concepts of "preferences" and "observable behavior." Samuelson (1963: 91) observed that "there has been a shift in emphasis away from the physiological and psychological hedonistic, introspective aspects of utility. It is not merely that the modern economist replaces experienced sensation or satisfaction with anticipated sensation... But much more than this, many writers have ceased to believe in the existence of any introspective magnitude or quantity of a cardinal, numerical kind." However, despite the attempts to exclude hedonism values from economic theory, the maximization of pleasure in the form of satisfaction continued to be implicitly recognized as an inescapable assumption of rational economic behavior (Drakopoulos 1991; Hirata 2009). In neoclassical economics, rational consumers and producers are widely presumed to maximize their

satisfaction by purchasing goods and making a profit (Becker 1976). Therefore, our first research question (RQ) is as follows:

RQ1 Does the study of economics result in an increase in the value of hedonism?

Power

Economics is also underpinned by the pursuit of power. Because the behavior of the rational economic individual (homo economicus) is guided by use of the most effective means to a desired end, the efficiency of such behavior is logically contingent on the individual's ability to exercise power over the means necessary to attain that end (Racko 2011; Weber 1978). For example, a rational individual exercises power over means by selecting and mobilizing resources, such as people or knowledge, that enable this individual to attain a desired end, such as profit. Since the end for a rational economic individual is merely a means to further ends in the infinite chain of means–ends calculation, this individual seeks power as both a means and an end. For example, the surplus wealth that has been generated in prior business ventures can be used as a resource in the development of new ventures.

The concern of economics with maximization of the predictive power of its generalizations was recognized by John Stuart Mill and has also been recognized by contemporary economic and social theorists. According to Mill (1874/1967), economics seeks to increase the predictive power of generalizations about the means necessary for maximizing wealth. He notes that economics "considers mankind as occupied solely in acquiring and consuming wealth" and seeks to explain the causes of this effect "to obtain the *power* of either *controlling* or *predicting* the effect" [emphasis added] (Mill 1874/1967: 321). He also notes that the explanatory power of economic predictions is likely to increase with the use of these predictions in the explanation of human behavior. As the values of homo economicus become institutionalized by using economic generalizations to explain phenomena, human behavior in the phenomenal world becomes increasingly guided by economic values and thus more aligned with the predictions of neoclassical economics.

Because the generalizations of neoclassical economics not only explain but also shape phenomena in accordance with the values that underpin them, the explanatory power of generalizations increases with their utilization in the prediction of human behavior (Persky 1995; Thaler 2000). The higher the explanatory power of generalizations in terms of their fit to the empirical phenomena, the more phenomena can be predicted and controlled in accordance with those generalizations (Ferraro et al. 2005). Therefore,

the more individuals are guided by the values of economics, the more they can be predictably controlled by the allocation of economic incentives, such as performance-related pay, to which they are likely to be responsive (Kasser et al. 2007). We thus propose the following research question:

RQ2 Does the study of economics result in an increase in the value of power?

Universalism

Individuals who are guided by the values of homo economicus are likely to attribute low importance to the value of universalism, which emphasizes concern for social well-being and the preservation of nature. The assumption that the pursuit of self-interest occurs at the expense of pro-social concerns is widely recognized in economic theory (Ferraro et al. 2005). This assumption has been used to justify the self-interested maximization of wealth as the ultimate and only end of rational economic behavior (Hirschman 1977; Sen 1987). In neoclassical economics, instrumentally rational individuals are assumed to maximize wealth by selling products and services to willing buyers regardless of the costs that the other parties may incur (Samuelson 1963). Therefore, the unintended effect of instrumentally rational behavior, such as the emergence of a global financial crisis due to the unrestrained pursuit of profit in the banking industry, is conceived simply as an externality for the affected parties (Buchanan and Stubblebine 1962; Akerlof and Shiller 2009).

The maximization of self-interest undermines the concern for the common good. Fontrodona and Sison (2006) demonstrate that the opportunistic pursuit of self-interest by the shareholders and managers of a firm can weaken their moral concern regarding the formation of a community of relationships that preserves the intrinsic worth and dignity of its members. For example, self-interested managers may generate a moral hazard for shareholders when they shirk their tasks and transfer the costs of their actions onto shareholders.

Miller (1999: 1056) suggests that individuals who act in an instrumentally rational way de-emphasize concern for the well-being of others because the pursuit of ethical goals is irrational and only leads to “a waste of time and effort” and because of a fear that they may be taken advantage of. Individuals who internalize the principles of instrumentally rational behavior are more likely to believe “in the pervasiveness, appropriateness, and desirability of self-interested behavior, which, in turn, should lead to exhibiting more self-interested behavior” (Ferraro et al. 2005: 14). The results of bargaining-game experiments demonstrate that people are more likely to use instrumentally rational strategies of action when they expect others to act in the

same way (Molinsky et al. 2012). Individuals guided by instrumentally rational strategies adopt lower ethical work standards (Giacalone et al. 2008) and avoid the emotions of social empathy (Eisenberg 2000). Thus, we propose the following research question:

RQ3 Does the study of economics result in a decrease in the value of universalism?

Self-Direction

Individuals who have internalized economic values are also likely to attribute low importance to the value of self-direction. Weber (1978) highlights that the acquisition of the values of homo economicus results in the homogenization of individual actions according to the logic of means–ends calculation. Economic calculation systematically quantifies phenomena in terms of means and ends and weighs means in terms of their efficiency for attainment of a given end. It thus reduces an individual choice to the selection of means toward a rationally defined end. It conceives non-economic ends either as irrational obstacles or as means that can be exploited to achieve a rationally defined end. The internalization of the principles of economic calculation thus standardizes human actions by increasing their consistency, calculability, and predictability in accordance with the logic of instrumentally rational calculation.

Dierksmeier (2011) suggests that the values of homo economicus restrict individual freedom for utility maximization. He suggests that rational economic calculation limits individual autonomy by reducing individual action to a passive response to the necessities of pleasure maximization, by excluding the alternative forms of decision-making, and by restricting the conceptual understanding of human action to the determinism of causal predictions about rational economic behavior. It thus reduces human agency to the structures of thought that are embedded in the principles of homo economicus and the necessities of economic laws derived from these principles.

The homogenizing implications of rational economic action are also recognized in psychological research. Riesman et al. (1970) demonstrate that individuals guided by the values of homo economicus sacrifice their autonomy by maximizing their usefulness to contemporaries. According to the research based on self-determination theory, the adoption of the values of homo economicus, which emphasize the extrinsic orientation to activity as a means to an end, decreases intrinsic orientation to activity as an end in itself (Kasser et al. 2007). Because rational economic behavior is controlled by extrinsic rewards, such as reputation and wealth, it decreases the self-direction of individuals (Deci and Ryan 1987). Therefore, the following research question is offered:

RQ4 Does the study of economics result in a decrease in the value of self-direction?

Method

Assumptions of Research

To ensure consistency between the conceptual and methodological aspects of our study and to clarify the role of our findings in policy development, it is important to highlight our ontological and epistemological assumptions. Following Max Weber's methodology of social sciences, we assume, ontologically, that values exist as an ultimate reality (Weber 2011). Epistemologically, we reject the positivist notion of an "objective" study of the human world as an independent entity because any socio-scientific inquiry is inescapably "value-relevant" or guided by a priori values that determine the selection of a research topic. Weber asserts that social scientists are inescapably part of the "object" of their study and hence cannot access the social realm without value presuppositions that guide the selection and analysis of a research problem.

Because of the value-relevance of socio-scientific inquiry, Weber stresses the importance of establishing methodological checks that prevent uncontrolled intrusion of scientists' values in the assessment of empirical facts. Above all, he calls for "value-free" social research in which empirical facts are distinguished from the personal value judgments of scientists. According to Weber, we can empirically measure the values of a specific group of individuals in value-free terms without endorsing or opposing them. In the end, questions concerning the value portrait of people can be settled only by providing empirical evidence.

The value-fact distinction is also relevant in setting the appropriate conceptual boundaries between science and policy. Asserting that a meaningful understanding of human activity requires differentiation between means and ends, Weber (2011) notes that social science can decide only the means but not the ends of action. It can thus rationally decide what means are the most appropriate for attaining a given policy goal. It can also ascertain the consequences of application of specific means for goals that are not immediately compatible with the policy goal. However, it cannot, without drowning in the speculative non-scientific realm, inform policy makers about the desirability of the goal or rationally weigh desirable goals against each other. Therefore, in appraising the practical implications of our findings, we consider strategies that policy makers in universities can use to facilitate awareness of the values of economics without making value judgments about the desirability or undesirability of these values.

Procedure and Participants

To examine the impact of economics education on student values, we conducted a 1-year study of economics students and a comparison group of politics students from the University of Latvia, a leading higher education institution in Latvia. We surveyed first- and second-year undergraduate students at the beginning and end of the academic year. To increase the proportion of surveyed students, we administered the survey during the lectures or seminars with the highest attendance. The average time required for the students to complete the survey was 18–20 min. The over-time data were obtained for 217 students, including 127 economics students and 90 politics students. Over-time data were available for 71 and 75% of economics and politics students, respectively. Of the students, 60.4 and 39.6% were in the first and second year, respectively, of their undergraduate program. The average age of the students was 19.3 years old, and 82% of the students was female.

Methodology of Research of Academic Socialization

Previous studies of the normative impact of economics education have been limited by a number of methodological weaknesses. Most studies assess the socialization of economics students by using a cross-sectional research design and comparing the attributes of lower and higher level students at a single point in time (e.g., Carter and Irons 1991; Frey and Meier 2005). The use of a cross-sectional design to measure student socialization is based on the assumption that the socio-demographic characteristics of lower and upper level students are similar. However, historical changes in student admission policies or the applicant pool may lead to discrepancies in the characteristics of upper and lower level students. The use of a cross-sectional design also confounds measurement of the impact of academic study on student values with the measurement of value accentuation during the study, when values prioritized at the beginning of the study are then strengthened or accentuated during the study (Pascarella and Terenzini 2005). For example, value accentuation occurs when students who attribute high importance to a specific value at the beginning of the academic year experience an increase in the priority of that value during the academic year. Moreover, where prior studies have employed a longitudinal research design, they have either measured the mean attribute change of a whole student population (Yezer et al. 1996) or not controlled the measurement of attribute change for the confounding influences of students' socio-demographic and academic characteristics (Frank et al. 1993; Frey and Meier 2005).

We overcome the methodological limitations of prior research by examining student value change over time in accordance with a conceptual model of student socialization derived from the theoretical models of academic socialization (Weidman 1989; Pascarella and Terenzini 2005). The model presented in Fig. 1 differentiates the effect of student enrollment in an academic program (economics vs. politics) on their values at Time 2 (arrow *b*), controlling for the effect of their values at Time 1 (arrow *c*), from the value accentuation effect that occurs when the values that are given higher or lower priority at the beginning of the academic year are strengthened or weakened during the academic year (arrow *a*). This model also enables us to control assessment of the impact of economics education on student value change for the confounding effects of students' socio-demographic characteristics (i.e., sex, age, father's education, mother's education, and residence in a capital city prior to the study) and the confounding effects of student study characteristics (i.e., time spent on study, class attendance, year of study, residence during study, friendship with study peers, and paid work during study). These characteristics are highlighted as potentially important confounding influences on student value change in the models of academic socialization (Pascarella and Terenzini 2005).

Measures

Human Values

We measured hedonism, power, universalism, and self-direction values using the Schwartz Value Survey (SVS) (Schwartz 1992). The SVS's ability to meaningfully predict goals, attitudes, and behaviors of different occupational and demographic groups has been validated in

different cultures (Schwartz 1992; Spini 2003; Bardi et al. 2009). The reliability of SVS has been confirmed using test–retest and split-sample analyses (Schwartz and Sagiv 1995). SVS is also unaffected by socially desirable response bias (Schwartz et al. 1997).

The defining goals of hedonism, power, universalism, and self-direction values are, respectively, “pleasure and sensuous gratification for oneself” (Schwartz 1992: 8), “social status and prestige, control or dominance over people and resources” (Schwartz 1992: 9), “understanding, appreciation, tolerance, and protection for the welfare of *all* people and for nature” (Schwartz 1992: 12), and “independent thought and action—choosing, creating, exploring” (Schwartz 1992: 6). Students completed a Latvian version of SVS translated by Austers (2002). This translation of SVS has good dimensional validity and reliability (Kalnina 2004; Racko 2011). Moreover, the dimensional validity of SVS has been confirmed in more than 60 societies around the world (Spini 2003; Schwartz and Boehnke 2004).

In the SVS, participants were asked to rate the importance of 57 values “as a guiding principle in my life” on a 9-point scale ranging from 7 (of supreme importance) to –1 (opposed to my values). Value items were presented in two lists containing 30 and 27 items, respectively. Before rating the value items in each list, participants were asked to indicate their most and least important values. As Schwartz (1992) suggested, we used centered value scores where the measurement of each value was centered based on the mean ratings for all 57 value items.

The scale reliabilities for the measures of hedonism, power, universalism, and self-direction values, which were comprised of 3, 4, 8, and 5 items, respectively, were .72, .71, .74, and .68 at Time 1 and .76, .73, .76, and .68 at Time 2. Considering that the scales included a relatively small

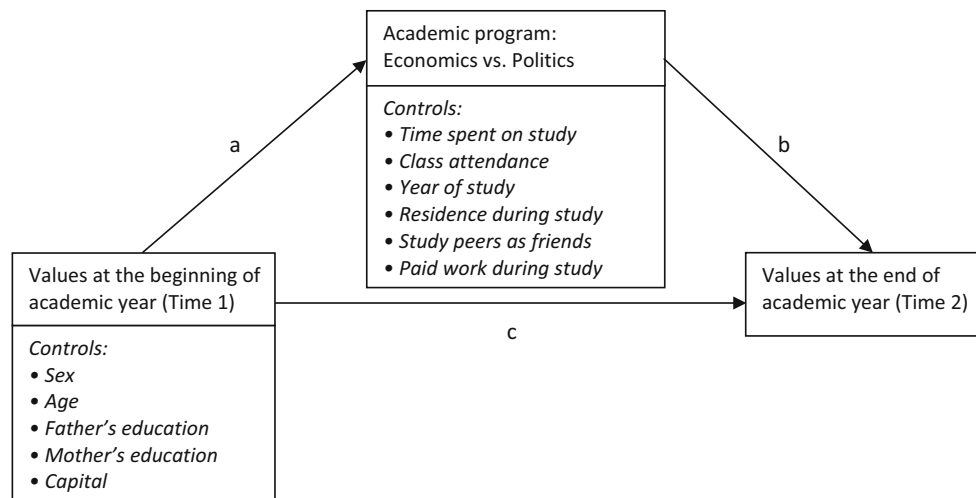


Fig. 1 Model of academic value socialization

number of items, these reliabilities indicated an adequate level of internal consistency for the scale items (Hair et al. 2010). Prior studies have identified similar reliabilities for the Schwartz value measures (Schwartz 1992; Bardi et al. 2009).

Controls

We controlled measurement of the effects of economics education on student value change for a set of socio-demographic and academic characteristics that were specified in the conceptual model of academic value socialization (Fig. 1). Gender was coded as 1 (female) or 0 (male). Age was assessed on a 5-point interval scale ranging from “18 or fewer years of age” (1) to “22 or more years of age” (5). Father’s and mother’s education was measured using a 5-point ordinal scale ranging from 1 (primary or secondary education) to 5 (advanced university degree). Residence in a capital city before studies was coded as 1 (resided in capital before studies) or 0 (did not reside in capital before studies). Time spent on study was measured in terms of the average number of hours per week spent on study. Class attendance was measured by the percentage of attendance of lectures and seminars on a 6-point scale ranging from “91–100%” (6) to “50% or less” (1). Year of study was coded as 0 (first year) or 1 (second year). Residence during study was coded as 0 (resides independently) or 1 (resides with other students). Friendship with study peers was measured as a proportion of friends among students using a 4-point ordinal scale ranging from “none” (0) to “all” (4). Finally, paid work during study was measured as the number of hours per week spent performing salaried work.

Results

Table 1 presents the means, standard deviations, and correlations of the study variables.

We proposed research questions focusing on whether economics education is likely to result in an increase in hedonism and power values as well as a decrease in universalism and self-direction values. In the first step of the data analyses, we examined the impact of economics education on student values by comparing the value changes of economics students with the value changes of a comparison group of politics students. Figures 2, 3, 4, and 5 provide the mean value scores of economics and politics students at the beginning of the academic year (Time 1) and at the end of the academic year (Time 2). The results of a paired-samples *t* test indicated that economics students attributed significantly higher importance to the values of hedonism ($t = -3.38$, $p < .001$) and power ($t = -3.70$, $p < .001$) and significantly lower importance to the value

of self-direction ($t = 3.40$, $p < .001$) at Time 2, when compared to Time 1. For politics students, there were no significant differences in the mean importance of the value of hedonism ($t = 1.46$, $p = .146$), power ($t = 1.44$, $p = .154$), or self-direction ($t = .53$, $p = .879$) between Times 1 and 2. The results of a two-way analysis of variance (ANOVA) with repeated measures for the interaction effect of study time and academic program indicated that the identified patterns of change in hedonism, power, and self-direction values among economics students were significantly different from those of politics students: hedonism [$F(1, 215) = 11.11$, $p = .001$], power [$F(1, 215) = 12.35$, $p = .001$], and self-direction [$F(1, 215) = 4.12$, $p = .04$]. However, neither economics nor politics students showed any changes in the mean importance of the universalism value between Time 1 and Time 2 ($t = 1.34$, $p = .183$; $t = -1.06$, $p = .291$). The identified pattern of stability in the universalism value over time among economics students was not significantly different from that of politics students [$F(1, 215) = 2.83$, $p = .09$].

In the second step of the data analyses, we used ordinary least squares (OLS) regression to examine the effects of economics education on values at Time 2 in the presence of controls for the effects of student background characteristics, including values at Time 1, as well as academic characteristics that are specified in the model of academic value socialization (arrows *b* and *c* in Fig. 1). The study of economics had a significant positive effect on the hedonism value ($\beta = .15$, $p = .039$) and power value ($\beta = .20$, $p = .003$), and a significant negative effect on the self-direction value ($\beta = -.15$, $p = .026$) at Time 2 (see Table 2). There was also a near significant trend for the negative effect of economics education on the universalism value at Time 2 ($\beta = -.14$, $p = .069$). Inspection of the standardized regression coefficients for these effects suggests that economics education had a relatively weak effect on student value change.

In accordance with the model of academic value socialization, we further explored the possibility that value change among economics students might result from the accentuation or strengthening of value differences at the beginning of the study period (arrow *a* in Fig. 1). The results of an ANOVA, however, indicated that economics and politics students did not differ on any of the values at Time 1: hedonism [$F(1, 216) = .01$, $p = .98$], power [$F(1, 216) = .28$, $p = .60$], universalism [$F(1, 216) = .97$, $p = .33$], and self-direction [$F(1, 216) = 1.01$, $p = .31$]. The results of a binary logistic regression indicated that, above and beyond the effects of students’ socio-demographic characteristics, hedonism, power, and universalism values at Time 1 did not predict their enrollment in the economics program ($p > .05$) (see Table 3). However, the self-direction value at Time 1 had a significant negative

Table 1 Means, standard deviations, and correlations of study variables

	M	SD	1	2	3	4	5	6	7	8	9
1. Hedonism Time 1 ^a	.33	1.06									
2. Hedonism Time 2 ^a	.47	1.10	.52***								
3. Power Time 1 ^a	−.99	1.26	.28***	.14*							
4. Power Time 2 ^a	−.84	1.21	.29***	.18**	.61***						
5. Universalism Time 1 ^a	−.36	.52	−.25***	−.17*	−.35***	−.42***					
6. Universalism Time 2 ^a	−.38	.75	−.22**	−.25***	−.23***	−.41***	.49***				
7. Self-direction Time 1 ^a	.65	.67	−.12	−.03	−.08	−.05	.01	.02			
8. Self-direction Time 2 ^a	.54	.70	−.16*	−.10	−.02	−.16*	.10	.01	.61***		
9. Sex ^b	.82	.38	−.02	.07	−.10	−.13	.01	.09	−.04	−.09	
10. Age	3.15	.82	.06	.01	.17*	.08	−.02	−.04	−.06	−.01	.07
11. Father's education ^c	2.85	1.30	.05	.00	.07	.06	−.06	.04	.01	−.08	.08
12. Mother's education ^c	3.14	1.32	−.06	−.11	.13	.08	−.03	.06	.03	−.09	−.03
13. Capital ^d	.42	.49	.08	.01	.07	.04	.00	.01	−.02	−.07	−.02
14. Time spent on study	8.44	8.23	−.01	−.14*	.05	.00	−.03	.04	.13	.17*	.08
15. Class attendance	5.12	1.13	−.13	−.13	.02	−.18**	.15*	.19*	.00	.08	.11
16. Year of study ^e	.40	.49	−.09	−.03	.09	−.08	.12	.05	−.06	.02	.04
17. Study peers as friends	1.92	.55	.11	.17*	.12	.05	.04	−.16	−.06	.01	.06
18. Paid work during study	10.42	14.98	.07	−.01	.09	.23***	−.14*	−.01	−.08	−.15*	.02
19. Economics program ^f	.59	.49	−.09	.12	−.07	.14*	.03	−.08	−.14*	−.25***	−.03
	10		11	12	13	14	15	16	17	18	
1. Hedonism Time 1											
2. Hedonism Time 2											
3. Power Time 1											
4. Power Time 2											
5. Universalism Time 1											
6. Universalism Time 2											
7. Self-direction Time 1											
8. Self-direction Time 2											
9. Sex											
10. Age											
11. Father's education	.02										
12. Mother's education	−.16	.33***									
13. Capital	.07	.21**	.06								
14. Time spent on study	.06	.00	−.06	−.10							
15. Class attendance	.03	−.08	−.03	−.07	.22***						
16. Year of study	.49***	.06	.05	.00	−.06	.19**					
17. Study peers as friends	.02	.07	.04	.01	−.05	.04	.14*				
18. Paid work during study	.25**	.12	.08	.12	−.09	−.27***	.10	−.02			
19. Economics program	−.14*	.06	.04	.20**	−.32***	−.27***	−.20**	−.06	−.06	−.06	

$N = 192\text{--}217$ (due to missing values in demographic variables)

* $p < .05$; ** $p < .01$; *** $p < .001$

^a Higher value score indicates greater importance; ^b 1 = female, 0 = male; ^c higher score = higher educational level; ^d 1 = resided in capital before studies, 0 = did not reside in capital; ^e 1 = second year, 0 = first year; ^f 1 = economics program, 0 = politics program

association with student enrollment in the economics program ($B = -.53$, Wald statistic = 4.85, $p < .05$). Thus, our findings suggest that the identified effects of economics

education on changes in hedonism, power, and universalism values cannot be explained in terms of the accentuation of initial differences in these values. However, compared to

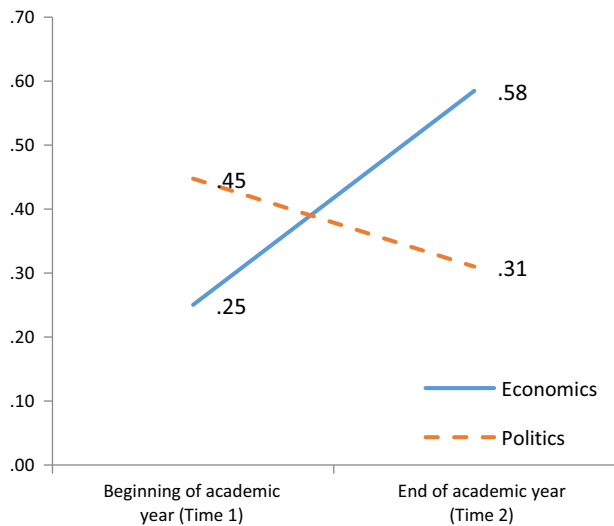


Fig. 2 Mean scores of hedonism value at the beginning (Time 1) and the end (Time 2) of academic year for economics and politics students

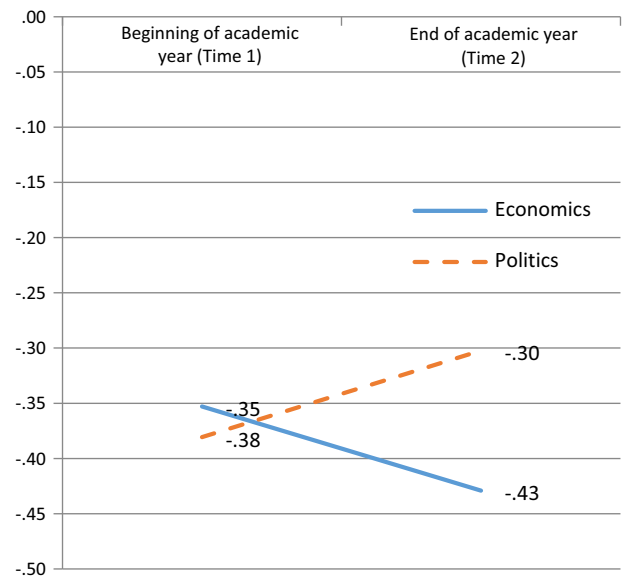


Fig. 4 Mean scores of universalism value at the beginning (Time 1) and the end (Time 2) of academic year for economics and politics students

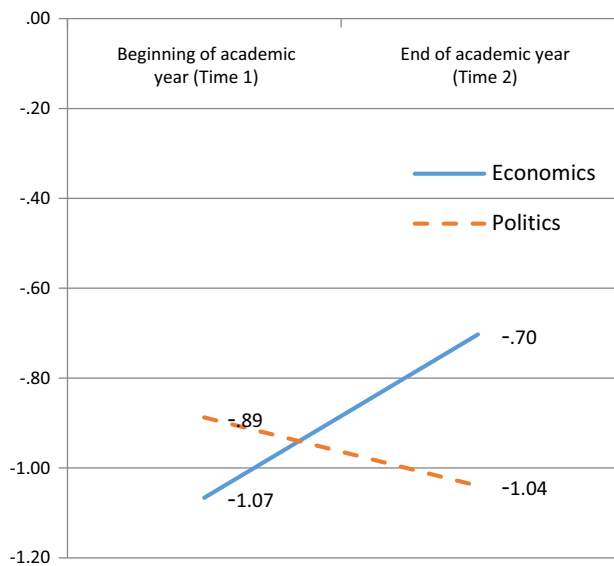


Fig. 3 Mean scores of power value at the beginning (Time 1) and the end (Time 2) of academic year for economics and politics students

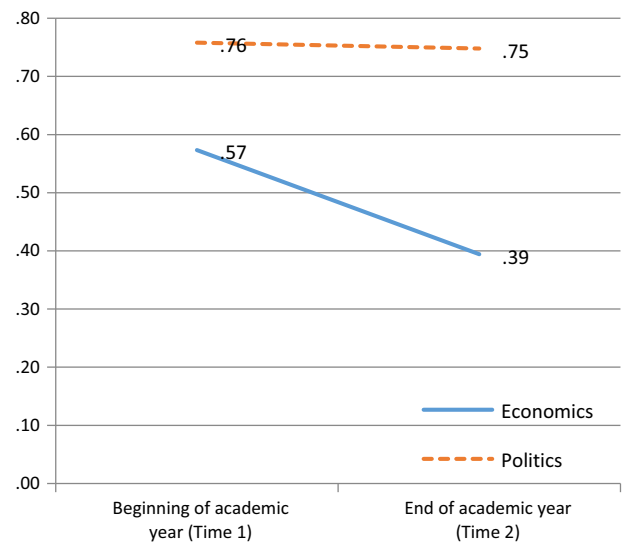


Fig. 5 Mean scores of self-direction value at the beginning (Time 1) and the end (Time 2) of academic year for economics and politics students

a group of politics students, economics students did place lower value on self-direction at the beginning of the academic year and subsequently experienced a decrease in the same value during the academic year.¹

¹ To increase the internal validity of our findings, we regressed the academic program (economics vs. politics) on Time 1 values together with students' socio-demographic and academic characteristics, including year of study. Consistent with the results of the initial regression analyses, where the study program was regressed on Time 1 values and students' socio-demographic characteristics, the findings of binary logistic regression indicated that self-direction value at Time 1 was negatively associated with student enrollment in the economics program ($B = -.54$, Wald statistic = 3.74, $p = .05$).

Discussion

We examined the effects of the study of economics on changes in student values. Using a quasi-experimental research design, we compared the value changes of economics students with a comparison group of politics students. Drawing on the theoretical models of academic socialization, we controlled the analyses of the impact of economics education on student value change for the effects of students' socio-demographic and academic

Table 2 Hierarchical regression analyses predicting values at Time 2

	Hedonism		Power		Universalism		Self-direction	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Hedonism Time 1 ^a	.53 (.06)***	.56 (.06)***	–	–	–	–	–	–
Power Time 1 ^a	–	–	.60 (.06)***	.61 (.06)***	–	–	–	–
Universalism Time 1 ^a	–	–	–	–	.50 (.09)***	.52 (.09)***	–	–
Self-direction Time 1 ^a	–	–	–	–	–	–	.61 (.06)***	.57 (.06)***
Sex ^b	.06 (.18)	.07 (.18)	–.05 (.19)	–.04 (.18)	.06 (.12)	.05 (.12)	–.07 (.11)	–.09 (.11)
Age	–.02 (.08)	–.02 (.10)	–.03 (.09)	.02 (.10)	–.02 (.06)	–.05 (.07)	.00 (.05)	–.02 (.06)
Father's education ^c	.03 (.07)	.02 (.06)	.03 (.06)	.01 (.06)	.07 (.04)	.07 (.04)	–.07 (.04)	–.07 (.04)
Mother's education ^c	–.09 (.07)	–.10 (.06)	–.03 (.06)	–.03 (.06)	.07 (.04)	.07 (.04)	–.08 (.03)	–.08 (.03)
Capital ^d	–.04 (.14)	–.10 (.06)	–.01 (.15)	–.07 (.14)	–.02 (.10)	.02 (.10)	–.03 (.09)	.01 (.09)
Time spent on study		–.10 (.14)		.03 (.01)		–.04 (.00)		.08 (.00)
Class attendance		–.04 (.01)		–.08 (.07)		.11 (.05)		.01 (.04)
Year of study ^e		.11 (.07)		–.11 (.17)		–.05 (.12)		.05 (.10)
Study peers as friends		.10 (.17)		.00 (.13)		–.17 (.09)**		.00 (.08)
Paid work during study		–.07 (.13)		.20 (.00)**		.08 (.00)		–.11 (.00)
Economics program ^f		.15 (.06)*		.20 (.16)**		–.14 (.11) [#]		–.15 (.10)*
R ²	.30	.38	.38	.47	.26	.32	.40	.45
F	13.00***	8.84***	16.09***	12.55***	10.58***	6.71***	19.73***	11.62***
ΔR ²	.28	.34	.34	.43	.24	.27	.38	.41

N = 192–217 (due to missing values in demographic variables)

[#] $p = .069$; * $p < .05$; ** $p < .01$; *** $p < .001$

^a Higher value score indicates greater importance; ^b 1 = female, 0 = male; ^c higher score = higher educational level; ^d 1 = resided in capital before studies, 0 = did not reside in capital; ^e 1 = second year, 0 = first year; ^f 1 = economics program, 0 = politics program

Table 3 Binary logistic regression analysis predicting enrollment in economics program

	Wald statistic (SE in parentheses)
Hedonism T1	2.78 (.16)
Power T1	.26 (.14)
Universalism T1	.05 (.32)
Self-direction T1	4.85 (.24)*
Sex ^a	.01 (.41)
Age	4.05 (.20)*
Father's education ^b	.25 (.13)
Mother's education ^b	.00 (.13)
Capital ^c	7.53 (.33)**
Cox and Snell R ²	.10
Nagelkerke R ²	.14

N = 192–217 (due to missing values in demographic variables)

* $p < .05$; ** $p < .01$; *** $p < .001$

^a 1 = female, 0 = male; ^b higher score = higher educational level;

^c 1 = resided in capital before studies, 0 = did not reside in capital

characteristics. Above and beyond the effects of control variables, economics education was associated with an increase in the importance of hedonism and power values

and a decrease in the importance of self-direction value. There was also a near significant tendency for economics students to experience a decrease of universalism value. Below, we consider theoretical and practical implications of our findings.

Theoretical Implications

Prior studies have typically linked the internalization of economic values with the pursuit of instrumentally rational behavior in general and have rarely considered theoretical insights into the values that underpin this form of behavior (e.g., Frank et al. 1993; Yezer et al. 1996; Wang et al. 2011). This study contributes to the understanding of the values of economics by examining the impact of economics education on student value change.

Consistent with the findings of prior studies that link economics education to an increase in instrumentally rational behaviors (Frank et al. 1993; Wang et al. 2011), we find the study of economics to be associated with an increase in the value of power. We suggest that the internalization of the values of homo economicus during neo-classical economics education strengthens power goals by emphasizing the importance of control over the means

necessary to attain a given end (Ferraro et al. 2005; Racko 2011).

We also find the study of economics to be associated with an increase in the value of hedonism and a decrease in the value of self-direction. We suggest that internalization of the values of homo economicus may predispose individuals to maximize their utility by maximizing their satisfaction (Drakopoulos 1991; Lewin 1996) and to homogenize their actions in accordance with the calculative logic of rational economic thinking (Dierksmeier 2011).

Furthermore, we differentiate measurement of the impact of economics education on student value change from the measurement of value accentuation during the study, where the latter is associated with the strengthening or weakening of values that are more or less prioritized at the beginning of the study period. Consistent with the results of prior studies on the normative impact of economics education (Frank et al. 1993; Wang et al. 2011), we find that value change during the study of economics is, in general, not associated with the strengthening or weakening of values at the beginning of the study period. Specifically, we find no significant differences in power, hedonism, or universalism values between economics and politics students at the beginning of the study. However, our findings suggest that economics students experienced the accentuation of initial differences in self-direction values. These students attributed lower importance to self-direction at the beginning of their academic study and experienced a decrease in the priority of this value during the study period.

Practical Implications

In industrially advanced societies, economic values have increasingly dominated policy development in private and public sectors and have been critical for increasing the material well-being and generosity of people. Using nationally representative survey data for the 81 societies representing 85% of the world's population, Inglehart and Welzel (2005) report that in economically developed societies with higher levels of material wealth and affluence, people are likely to be more concerned with the well-being of others. They suggest that people in affluent societies tend to be more pro-social because they are less constrained by the material necessities of survival. However, the values of homo economicus have also been used to legitimize the unrestrained pursuit of self-interest without regard for others' well-being (Ghoshal 2005; Ferraro et al. 2005; Huehn 2008). Since values that individuals internalize during academic study are likely to guide their vocational decisions after graduation (Pascarella and Terenzini 2005), it is important to consider the ethical

implications of the transmission of these values. Below, we outline a number of strategies that policy makers in universities can use to help students act ethically by raising their awareness of the values that underpin economics.

Policy makers may facilitate awareness of the values of economics by highlighting the normative assumptions of positive economics in classes focusing on the methodology and philosophy of economics. Neoclassical economics is traditionally taught as a positive science that examines the social world as an objective entity independent of value assumptions about it. It develops predictions based on empirical facts without making value judgments about the desirability or undesirability of these facts (Friedman 1953). The prevailing view is that neoclassical economics excludes ethical and moral phenomena from the development of its predictions. However, because economics selectively abstracts its predictions based on those aspects of behavior that are guided by the values of homo economicus, it not only predicts phenomena but also shapes them in accordance with its values (Hollis and Nell 1975; Dierksmeier 2011).

Policy makers can increase student understanding of the normative and ethical implications of economics by clarifying the motivations that underpin, or are opposed to, the values of homo economicus. An awareness of motivational compatibilities and conflicts between the values that underpin instrumentally rational and non-rational modes of action can enable students to make an ethical choice among distinct ends of action, as well as raise their awareness of means that can facilitate or constrain the attainment of selected ends. Our findings suggest that the study of economics is likely to result in an increase in the priority of hedonism and power values and a decrease in the priority of self-direction value. While the study of economics may enable individuals to be more effective in the acquisition and utilization of resources, it is likely to constrain their ability to make ethical choices between distinct ends by reducing their actions to calculation of the means necessary to attain an instrumentally rational end (Ferraro et al. 2005).

Clarification of economic values can also help students make ethical choices about the use of the insights of economics in policy development. It can help students understand the internal logic and final axioms of value premises that underpin the insights of neoclassical economics and determine the intended and unintended consequences of the use of these insights in the development of corporate and public policies. For example, while the deregulation of financial markets may increase the competitiveness of economies, it can generate negative externalities in the form of a financial crisis or decreased protection of workers' rights. For example, it is now widely recognized that the global financial crisis of 2007–2008

was largely fueled by the deregulation of financial markets that enabled corporate leaders to behave opportunistically in the pursuit of their self-interest without considering the ethical consequences of their actions (Akerlof and Shiller 2009).

Policy makers may also raise students' awareness of the ethical implications of the pursuit of economic values by encouraging their enrollment in social science classes that examine economic processes from diverse theoretical perspectives. Students can be encouraged to participate in classes that draw on the insights of the political economy perspective, where economics processes are considered in conjunction with the political, social, and cultural processes in society. Economics students can develop a more reflexive and critical understanding of the political and social implications of the use of economic theories by attending classes in political theory, sociology, or philosophy in political science departments or other social science departments that expose students to diverse conceptual perspectives (Giacalone and Thompson 2006). The exposure of economics students to diverse theoretical, ontological, and epistemological perspectives is likely to facilitate their willingness and ability to reflect on the values that underpin the insights of neoclassical economics, therefore, to act ethically in the pursuit of these insights.

Limitations and Directions for Future Research

The internal validity of our findings may be affected by a number of limitations associated with the research design. Consistent with the methodology used in prior research on the normative impact of economics education (Frank et al. 1993; Yezer et al. 1996; Lynnette and Davis 2004; Frey and Meier 2005; Wang et al. 2011), we compare the normative socialization of economics students with the normative socialization of a comparison group of non-economics students. In this way, we aim to develop a generic understanding of the impact of economics education on student values. However, we do not exclude the possibility that the internalization of the values of homo economicus during economics education can be influenced by the normative homogenization or diversification of an academic curriculum. For example, economics students may be less likely to internalize economic values in academic departments that offer classes in other social sciences and the humanities (Giacalone and Thompson 2006) and that prioritize the recruitment of teaching staff with interdisciplinary training in social sciences (Moosmayer 2012). Economics students may also be less likely to internalize the values of homo economicus in academic departments that de-emphasize the use of econometric methods (Racko et al. 2016; Colander 2001) and the principles of game theory (Frank et al. 1993).

We also cannot rule out the possibility that value change in economics students may have been influenced by a distinctive school of economic thought, such as, for example, the Austrian School or the Stockholm School. It is plausible that the theoretical or methodological research perspective associated with a particular school of economic thought of the economics department in which students were enrolled influenced their value change above and beyond the general effects of economics education. Future research can investigate the moderating effect of the school of economic thought on the internalization of economic values.

Use of the methodology of research on academic socialization (Weidman 1989; Pascarella and Terenzini 2005) enables us to overcome the limitations of prior research on the normative impact of economics education. However, we measure value changes only for first- and second-year students. Future research can develop a more exhaustive understanding of value socialization in economics education by measuring value changes during an entire academic program. Moreover, although we control the analyses of student value changes for the confounding effects of students' socio-demographic and academic characteristics, which are theoretically recognized as important antecedents of value change during academic study (Pascarella and Terenzini 2005), a number of potentially important control variables may have been excluded. Future research can control the analyses of the impact of economics education on student values for the confounding influences of student residence during study, engagement in extracurricular activities, and interaction with academic staff.

We also cannot rule out the possibility that value change during the study of economics may be influenced by a few opinion leaders from the student body. However, the results of multivariate data analyses indicate that economics students experienced a distinct pattern of value change above and beyond the effects of their year of enrollment in an undergraduate program or their friendships with study peers. Future research can examine value socialization in a number of economics programs and control data analyses for student interaction with opinion leaders.

Future research can also fruitfully investigate the perceptions of academic policy makers and teaching staff regarding the normative impact of economics education. For example, it would be interesting to examine their perceptions of the role of values in positive economics, the desirability or undesirability of the internalization of these values during economics education, and the normative homogenization or diversification of academic curricula in accordance with these values. This would be helpful for economics and management programs seeking to facilitate student awareness of the normative assumptions that underpin economics.

Research can also examine the impact of value socialization during economics education on the vocational preferences and choices of graduates. For example, new research can examine the impact of value change during economics education on the employment of graduates in organizations and occupations that prioritize the pursuit of ethical business practices, such as protection of the well-being of workers, ethical personnel management, and charity fundraising.

Conclusion

This study examined the values of economics by investigating the impact of economics education on student values. To facilitate an understanding of the fundamental value assumptions of economics, we used insights of the economic and sociological theories of the values of homo economicus. Understanding the values of economics is important, given that these values play a significant role in the design of corporate policies. Economic values provide normative guidelines for the mobilization of resources, the management of employees, and the role of organizations in society. While economic values dominate the development of corporate policies in Western societies, their influence is spreading worldwide. When economic values guide the design of corporate policies, they shape the actions of individuals who apply them and are affected by them. As economic values are institutionalized in the world of work, they transform human actions and interactions in accordance with their principles. In illuminating the generic values of economics, this study aimed to facilitate purposeful and responsible selection among competing value priorities to increase awareness of the ethical consequences of this selection for individuals, organizations, and society.

Compliance with Ethical Standards

Ethical Approval All research procedures in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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