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ATTITUDES OF ECONOMICS AND SOCIOLOGY STUDENTS TOWARDS COOPERATION: A CROSS-CULTURAL STUDY

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ABSTRACT. The impact of university education on the learners' attitudes remains uncertain. Nevertheless, the Economics students' unwillingness to cooperate is frequently attributed to the content of economic courses, and the theories of profit maximization. This article contributes to the discussion on students' attitudes towards cooperation based on the survey of 341 Polish and Romanian students. Since these countries differ in terms of collectivism/individualism dimension, we focus on tracing the influence of cultures on cooperativeness. Specifically, we investigate three variables. First, the impact of culture on the willingness to cooperate, secondly, the influence of gender on collaboration, and finally, the differences in attitudes among the students of Sociology and Economics. We find significant differences between Polish and Romanian students' attitudes towards cooperation, we also observe higher level cooperation among females than males. We detect a drop in cooperation from the first year to the subsequent years of undergraduate studies in Economics.

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Z13

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Introduction

Economics and Business students are generally considered less cooperative than those pursuing other areas of study. Numerous studies have concluded that future economists are not as eager to take part in collective actions as the students of other social sciences, humanities, law or nursing (Marwell, Ames, 1981; Frank *et al.*, 1993; Seguino *et al.*, 1996; Cadsby, Maynes, 1998; James *et al.*, 2001). This reluctance is explained by two main hypotheses: the *preselection hypothesis* and the *indoctrination hypothesis*. According to the preselection theory, individuals who are less likely to engage in group activities and teamwork are more likely to elect Economics as their vocation. Such tendencies are rooted in their personalities, i.e., these people are different by nature. According to the indoctrination theory, economists' uncooperativeness is viewed as the outcome of taking courses in Economics that praises individualism and benefits stemming from pursuing personal interests (Marwell, Ames, 1981, pp. 309-310).

The methodology most commonly employed to investigate the willingness to engage in teamwork is laboratory experiments where participants are mostly playing trust games. Until recently, the researchers' game of choice was the *prisoner's dilemma*. The problem, however, is that nearly all textbooks in introductory microeconomics explain the game theory and the *prisoner's dilemma* to the difficulties in providing public goods (cf. for instance: Varian, 2010, pp. 522-565; Frank, 2008, pp. 211-236, 414-456; Mankiw, 2012, pp. 349-371; Pindyck, Rubinfeld, 2009, pp. 479-520). Thus, economists are taught the rules of the *prisoner's dilemma* – a game where to win, a player must use the strategy to "defect" rather than to "cooperate" (cf. Yezer *et al.*, 1996; Cadsby, Maynes, 1998, p. 184; Frey, Meier, 2003, p. 448; Klimczak, 2005). Therefore, drawing conclusions about the Economics students' cooperativeness from the decisions they make while playing these kinds of games may lack validity.

The aim of this paper is to isolate the attitudes towards cooperation from the content of economics courses. To this end, we have relied on a survey instrument that allows participants describe their previous teamwork experiences and express their opinions on various aspects of teamwork. We compare the attitudes of Sociology students with those of Economics students. We also make comparisons between men and women, and among Polish and Romanian students. Since Poland and Romania are regarded as markedly different in terms of their collectivist/individualist values, this gives us an opportunity to study the influence of cultures on the participants' approach to working together – an aspect that has been overlooked by most other studies testing the *indoctrination hypothesis*, i.e., the impact of economics education on students' cooperativeness.¹

Faravelli (2007) also compared economists and sociologists. Many other researchers have compared economists with the students of other disciplines (Marwell, Ames, 1981; Kahneman *et al.*, 1986; Carter, Irons, 1991; Frank *et al.*, 1993; Seguino *et al.*, 1996; Cadsby, Maynes, 1998; James *et al.*, 2001; Cipriani *et al.*, 2009; Wang *et al.*, 2011; Haucap, Müller, 2014; Goossens, Méon, 2015). The focus of most of the previous studies has been to test the *preselection hypothesis* and/or *indoctrination hypothesis*. We found that among the Economics students, the willingness to cooperate is declining from the first year of undergraduate studies to the subsequent second and third years. We noted significant differences in the attitude towards cooperation among Polish and Romanian students. Our data offers evidence confirming the assumption that females are more willing to cooperate than males. However, we failed to note any statistically significant differences between the opinions of students of Economics and Sociology.

In the case of laboratory experiments, the behavior of respondents is not always indicative of their real-life behavior. Similarly, what participants state during a survey and what they might do may be two different things. The Hawthorne effects may come into play in a laboratory when students are aware they are being observed. Similarly, participants may respond to survey items according to what is expected from them in a given culture, or what the subjects may think the researcher wants to hear. Such risks are eminent in all social sciences' research, and the scrutiny of the expressed attitudes and opinions is a problem that lies far beyond the scope of this study.

To provide the necessary background for our investigation, in the first section of the article we outline the discussion on students' attitudes towards cooperation. Against such a background the theoretical foundations for our research are presented in the second section; the instrument we employed and the evidence we gathered are described in the subsequent,

¹ The comparison of the Economics and other majors' students from two different counties, Switzerland and West Berlin, was made by (Frey, Pommerehne and Gygi, 1993). However, their study was dedicated to the opinions on various allocation mechanisms, not cooperation.

third part. In this section, we also describe the Cooperation Index which is the indicator we have applied to facilitate comparisons of the respondents' attitudes towards cooperation. The results we obtained and our empirical findings are presented in the fourth part. These findings are discussed in the final section, which also includes our recommendations and suggestions for further research.

1. Debates on economics students' cooperativeness

Remarks on economics students' specificity were made as early as the formal university education in economic sciences became available (cf. e.g. Marshall, 1920 [1890], I.I.10, §3). However, the empirical research to identify and explain the differences between the economists and the other students began in the early 1980s with the work by Marwell and Ames (1981) that reported the results of 12 experiments testing the *free-rider hypothesis* using a game similar to the *prisoner's dilemma*. One of the authors main findings was that majority of the respondents did not behave according to the tested hypothesis except for a group of graduate students of Economics. From this, Marwell and Ames (1981) concluded that the economists were different. To explain the difference they formulated the preselection and indoctrination hypotheses, however the gathered data was too limited to let them test the hypotheses.

The follow-up studies based on the classical *prisoner's dilemma* game were conducted by Frank, Gilovich and Regan (1993), James, Soroka and Benjafield (2001), Hu and Liu (2003), Ahmed (2008), and Haucap and Müller (2014). Seguino, Steven and Lutz (1996) used the same game that was employed by Marwell and Ames (1981). Cadsby and Mayes (1998) used a trust game with a threshold.

The results of those studies were inconclusive. While Frank, Gilovich and Regan (1993) and Haucap and Müller (2014) found support for the *indoctrination hypothesis*, Seguino, Steven and Lutz (1996), Cadsby and Mayes (1998), and James, Soroka and Benjafield (2001) only reported that the economics students were less cooperative than their counterparts in the other disciplines. Ahmed (2008) found support neither for the *preselection hypothesis* nor the *indoctrination hypothesis*; Hu and Liu (2003), contrary to the other findings, reported that the economists were more willing to cooperate than their colleagues graduating in other programs. None of these researchers found support for the *preselection hypothesis*.²

Dissatisfied with assessing students' cooperativeness with games such as the *prisoner's dilemma*, Yezer, Goldfarb, and Poppen (1996) designed their investigations on the *lost letters* experiment. In this experiment, envelopes with the name and address of a recipient were left in classrooms where lectures in economics and other subjects took place. The unsealed envelope contained a small amount of money and a note stating that the enclosed sum was a partial payment of a loan. The finders' willingness to cooperation was assessed according to the rates of return of the envelopes. Yezer, Goldfarb, and Poppen (1996) reported that the cooperativeness (expressed by the rates of return) was higher among the economics students. Some may regard it as a semantic issue, yet, equating cooperativeness with a person's honesty (returning the money to its rightful owner), in our opinion, is debatable.

We see a similar problem with interpretation of a study by Laband and Beil (1999) who used real-world evidence to compare honesty in paying the professional dues by the members of three specific societies: the American Economic Association, the American

² However, the preselection hypothesis was supported by some studies focused on examining the other differences between the economists and the other students (e.g. Carter, Irons, 1991; Frey, Pommerehne, Gygi, 1993; Frank, Schulze, 2000; Frey, Meier, 2003; Gandal *et al.*, 2005; Hole, 2013; Krick *et al.*, 2016).

Sociological Association, and the American Political Science Association. The annual dues for these societies are assessed on a member's highest academic degree. The professional economists were the most willing to reveal their actual academic degrees. This speaks volumes about the economists' honesty but is hardly related to cooperativeness.

The inconclusiveness of the empirical studies may be explained by a fundamental methodological problem related to testing hypotheses in all social sciences: the researcher's inability to control all the intervening variables in a social environment. In the case of studies on the relationship between education in Economics and its influence on students' cooperativeness, variables such as socio-economic background, the education levels of the subjects' parents, professional affiliations of the parents, values, religious beliefs, socialization, family dynamics, socio-political structure of a country, and culture are likely to have some influence.

Throughout the existing literature dedicated to the economics students' willingness to cooperate, we have noted the importance of gender as an influencing variable. Frank, Gilovich and Regan (1993), Seguino, Steven and Lutz (1996) and Hu and Liu (2003) found that females are more cooperative than males; Haucap and Müller (2014) reported the academic teaching has a greater impact on women than men.

Despite numerous empirical studies demonstrating an impact of culture on people's cooperativeness (e.g. Burlando, Hey, 1996; Hemesath, Pomponio, 1998; Ockenfels, Weinmann, 1999; Cadsby *et al.*, 2007; Castro, 2008), the influence of culture has mostly been ignored by the authors examining the puzzle of economics students' uncooperativeness. Clearly, more research is needed to track the influence of culture, gender, and gender socialization on cooperation.

2. Theoretical foundation for the study

The inconclusiveness and the validity of conclusions from the experiments based on game theory led us to opt for a survey that excluded any links to the content of the economics texts and game theory. We selected our respondents so that we could study the influences of culture and gender on collaboration. For the purpose of our study we focused on the aspect of culture with the strongest reference to cooperativeness, i.e. individualism and collectivism (cf. North, 1990, 2005; Greif, 1994, 2006; Huntington, 1996; Landes, 2000). According to Hofstede (1997, pp. 49-78), individualism and collectivism refer to the self-perception of individuals in a given society. In the individualistic cultures, people define themselves in the terms of "I"; in a collectivist society, the people perceive themselves through the prism of "We". In an individualistic culture the importance is placed on personal goals; in a collectivist culture, the emphasis is on group goals. It is reasonable to assume that the people raised in collectivist cultures would be more predisposed to cooperation than the individuals raised in the individualistic societies. We recruited our samples from two countries, Poland and Romania; the cultures of these nations are reported as different on the individualism/collectivism dimension (Hofstede *et al.*, 2010, p. 103).

The focus of our study was twofold. Firstly, to test the *indoctrination hypothesis* by comparing the responses of the students of Economics and Sociology, and by analyzing the responses of the students of Economics at the various levels of their education. Secondly, to examine the *culture hypothesis* by analyzing the attitudes towards collaboration among the participants from the two countries.

As to the first issue, we assumed that economic education exerts a certain influence on students' attitudes. Therefore, we expected to confirm the *indoctrination hypothesis*. We also hypothesized that the differences in participants' willingness to cooperate may be due to the cultural differences between Romania and Poland. We expected to find differences in

attitudes towards group work in the two countries. We also hypothesized that gender would have an impact on attitudes towards group work and collaboration.

We were unable to test the *preselection hypothesis* as we did not have an access to the respondents before they began their university studies.

3. Data and survey design. The Cooperation Index

The data for the study were collected at two public universities: The University of Lodz, Poland, and the Alexandru Ioan Cuza University of Iași, Romania. The present enrollment at these institutions is 37000 and 23000 respectively.

Our sample consisted of 341 participants. Of these, 186 were Polish nationals (54 percent of the sample) and 155 Romanians (46 percent of the sample). There were 70 percent women and 30 percent men in the sample. The Polish sample was composed of 61 men and 125 women. The Romanian group consisted of 42 men and 113 women. There were 223 students of Economics and 118 of Sociology.

The questionnaires were collected in three waves: in March 2016 and June 2017 from the Polish students and in June-July 2016 from the Romanian ones.

The paper-and-pencil instrument contained four types of items:

- (1) Four items designed to gather demographic data (gender, the program of studies, year of studies, and country of origin),
- (2) Five Likert-scale items to estimate the students' attitudes towards cooperation (the response on these items varied from Strongly Disagree as 1 to Strongly Agree as 9),
- (3) Two open-ended items asking about the students' previous experiences in teamwork,
- (4) One item with three choices asking about the completion of group assignments in the past.

The responses on the 9-point Likert-scale items were recoded and collapsed into three categories: Disagree (1, 2, 3), Neutral (4, 5, 6), and Agree (7, 8, 9). The Chi-square statistics were employed to determine the significance of any differences.

To estimate the students' attitude towards cooperation by a single indicator we relied on Cooperation Index (Dziona-Kozlowska, Rehman, 2017). To arrive at this estimate, we used four Likert-scale items from the instrument. Three of these are negative statements towards cooperation, and fourth is a positive statement. The negative statements are:

1. *If you want something done, do it yourself* (Do It Yourself);
2. *Group work is wasteful when it comes to really important issues* (Waste of Time);
3. *I work much better by myself* (Alone).

The positive statement towards group work reads:

I welcome the opportunity to work in groups (Like Group Work).

Table 1. Statements included in the *Cooperation Index*.

No.	Statement	Variable	Attitude towards cooperation
1.	<i>If you want something done, do it yourself</i>	DIY	Negative
2.	<i>Group work is wasteful when it comes to really important issues</i>	WT	Negative
3.	<i>I work much better by myself</i>	A	Negative
4.	<i>I welcome the opportunity to work in groups</i>	LGW	Positive

Source: Authors' elaboration.

The *Cooperation Index* (CI) is tabulated as:

$$CI = LGW - \frac{DIY + WT + A}{3}$$

Expressed numerically, the CI could vary from -8 to +8. An individual with a perfectly neutral attitude towards cooperation would have a CI = 0. The higher the CI, the more positive an individual's attitude towards cooperation. The average Cooperation Index for our sample was +0.85, suggesting that the students' attitude towards cooperation was relatively neutral.

The fifth Likert-scale item, the only one that was not included in the Cooperation Index, refers to students' opinions about the benefits of receiving training in group work. The statement reads: *Most group work will be ineffective unless people know how to work in groups.*

4. The results

4.1. Attitudes towards Teamwork

The responses reveal that students are aware of the problems related to working together. Answering the open-ended questions, both the economists and sociologists enumerated various difficulties. The most common problem listed by both groups was "unequal participation" or "lack of participation" by group members. The problem was indicated by nearly 50 percent of all the respondents. 40 percent of the economists and 53 percent of the sociologists saw this as the biggest issue in teamwork.

More than 10 percent of the participants (12.4 percent of the economists, 9.7 percent of the sociologists) admitted that teamwork caused stress and tension. Both groups also admitted that working together led to the deterioration of the relationship between the group members. Three percent of the economists and nearly 10 percent of the sociologists pointed it as a negative consequence of teamwork.

The most frequently reported negative outcome of working in groups was "uneven workload". This was expressed by more than 20 percent of respondents. Nearly 14 percent of the economists and almost 6 percent of the sociologists identified "procrastination" as a problem in group work. Since the less active members receive the same grade as the more active ones, the respondents felt that the assessment process for group projects was unfair. One in every 5 Sociology students and one in every 10 Economics students commented on the unfairness of such group evaluation.

Despite these difficulties, nearly 92 percent of the respondents admitted that the group tasks were completed. 66 percent of the participants felt that projects could have been much better.

Analysis of the Likert-scale items revealed that the participants were aware of various problems triggered by teamwork, and they seemed to praise individualism; nearly half of the respondents agreed with the items: *If you want something done, do it yourself* and *I work much better by myself* (see Table 2). For both of these items, the mode was 9, i.e., Strongly Agree. Yet, almost two-thirds of the students expressed their willingness to work in groups (item 4). *Prima facie*, these findings seem to be contradictory. However, after a careful examination of the responses to the open-ended questions, we found that the key problem was the respondents' perceived lack of training in teamwork. More than 80 percent of the

participants agreed with the statement: *Most group work will be ineffective unless people know how to work in groups.*

Table 2. The results of students' evaluation of the Likert-scale items (descriptive statistics)

Item	Disagree	Neutral	Agree	Mean	Stan. dev.	Median	Mode (N)
<i>If you want something done, do it yourself</i>	67 (19.6%)	109 (32.0%)	165 (48.4%)	5.96	2.55	6	9 (75)
<i>I work much better by myself</i>	45 (13.2%)	136 (39.9%)	160 (46.9%)	6.09	2.31	6	9 (73)
<i>Group work is wasteful when it comes to really important issues</i>	119 (34.9%)	111 (32.6%)	111 (32.6%)	4.96	2.57	5	5 (52)
<i>I welcome the opportunity to work in groups</i>	50 (14.7%)	84 (24.6%)	207 (60.7%)	6.52	2.41	7	9 (92)
<i>Most group work will be ineffective unless people know how to work in groups</i>	63 (18.5%)	127 (37.4%)	150 (44.1%)	5.85	2.40	6	9 (61)

Source: from the authors' data.

The Chi-square analysis revealed that the females saw a greater value in training in teamwork than males. The results are presented in *Table 3* below.

Table 3. *Most group work will be ineffective unless people know how to work in groups*

	Disagreed	Neutral	Agreed	Total
Males	27 (27%)	33 (32%)	43 (41%)	103
Females	36 (15%)	94 (40%)	107 (45%)	237
Total	63 (19%)	127 (37%)	150 (44%)	340
$\chi^2 = 6.014$; p-value .04944; p < .05				

Source: from the authors' data.

Since the differences are significant at .05 level we may assume that the belief in the beneficial influence of teamwork training is higher among females than males.

4.2. Attitudes towards cooperation and the program of studies

Our data shows that a program of studies does not exert any noticeable influence on the students' attitudes towards cooperation. Chi-square test failed to reveal any statistically significant differences between the Economics and Sociology students. The average Cooperation Indices for the Economics and Sociology students are +0.93 and +0.71 respectively. The difference (0.22) is negligible (see *Table 4*).

Considering the Polish and the Romanian samples separately, there are greater differences in CI values for the economists and sociologists. In turn, separating genders shows no significant differences in the average CI values for the economists and sociologists. Although in both countries the average CI scores for the male students were lower than the average scores for the females (*Table 4*). This finding, which suggests a possible influence of

gender on the willingness to cooperate lending further support to the Chi-square analysis in *Table 3*.

The data enabled us to analyze the changes in opinions about working together occurring with the advancement of the Economics studies.³ A statistically significant difference in willingness to cooperate between the more and less advanced students of economics appeared in the responses to the Likert-scale items: *I welcome the opportunity to work in a group* (see *Table 5* below).

Table 4. The Cooperation Index for the economics and sociology students (N=341)

	Economics students (N=223)	Sociology students (N=118)	Difference between Economics and Sociology students
Sample average	+ 0.93	+ 0.71	0.22
Polish students	+0.19	+1.26	1.07
Romanian students	+1.75	+0.14	1.61
Males	+0.68	+0.14	0.54
Females	+1.07	+0.87	0.20

Source: from the authors' data.

Table 5. The evaluation of the Economics' students responses to the statement: I welcome the opportunity to work in a group (N=223)

Year of studies	Disagreed	Neutral	Agreed	Total
1 st (% of the 1 st year students)	3 (7%)	15 (34%)	26 (59%)	44
2 nd (% of the 2 nd year students)	5 (14%)	11 (30%)	20 (56%)	36
3 rd (% of the 3 rd year students)	18 (18%)	27 (27%)	55 (55%)	100
Graduate students (% of the graduate students)	2 (5%)	7 (16%)	34 (79%)	43
Total (% of the sample)	28	60	135	223

$$\chi^2 = 11.641; \text{p-value} .07047; \text{p} < .10$$

Source: from the authors' data.

There is a positive correlation between the years of study and a favorable attitude towards teamwork; however, such a trend is observable for the undergraduate students only. This difference, significant at .05 suggests that among the Economics students, there is deterioration in willingness to work in groups from the first year of their undergraduate studies to the third. We also noted that the graduate students had a more positive attitude towards cooperation than the undergraduate students. Such a relationship is also confirmed by the results of the average CI scores of the Economics students (see *Table 6*). This may be attributed to more exposure to teamwork, or it may simply be a result of maturity (cf. Frank *et al.*, 1993; Hu, Liu, 2003). It may also be attributed to the fact that to pursue the graduate studies in Economics one need not have studied Economics at the undergraduate level. The graduate students of Economics come from a variety of social sciences. That means that we do not have a continuity of Economics' education when these two levels of studies are considered.

³ We only had 19 third-year Sociology students. Due to the sample size, we excluded this portion of the sample from the analysis.

Table 6. The Cooperation Index for the Economics and Sociology students (N=341)

Economics students		Sociology students	
N	Average CI values	N	Average CI values
1 st year	44	+1.58	34
2 nd year	36	+0.58	30
3 rd year	100	+0.34	19
Graduates	43	+1.94	35

Source: from the authors' data.

4.3. Culture and Students' Attitudes towards Cooperation

According to Hofstede, Hofstede and Minkov (2010, pp. 96-97), Polish culture is assessed as more individualistic than the Romanian one; Poland's score in individualism is 60 while Romanian culture is assessed at 30 points on a 100-point scale. We hypothesized that the Romanian students might express a more positive attitude towards cooperation than their Polish colleagues.

Indeed, the collected evidence lends support to our initial expectations. We found statistically significant difference between the Romanian and the Polish Economics students in regard to their declarations on a willingness to collaborate (the results are presented in *Table 7*).

Table 7. The evaluation of the statement: *I welcome the opportunity to work in a group* by the students of economics from Poland and Romania (N=223)

	Disagreed	Neutral	Agreed	Total
Polish students (% of the Polish students)	19 (16%)	43 (37%)	55 (47%)	117
Romanian students (% of the Romanian students)	9 (8%)	17 (16%)	80 (76%)	106
Total (% of the sample)	28 (13%)	60 (27%)	135 (60%)	223
$\chi^2 = 18.971$; p-value .000076; p < .001				

Source: from the authors' data.

More than three-fourths of the Romanian students declared their willingness to work together, while less than half of the Polish students did so. Based on the Chi-square tabulation, the difference is significant at .001 level, which indicates that the Romanian students' willingness to cooperation is higher than their Polish counterparts.

This difference was also confirmed by the scores of the Cooperation Index. The average value of this indicator for the Polish students was +0.53 while in the case of the Romanian students it reached +1.24. Analyzing the data for gender, we noted that Romanian men and women obtained higher CI values than the Polish men and women. The results are presented in *Table 8*.

Table 8. The Cooperation Index for the Polish and Romanian students (N=341)

	Polish students (N=186)	Romanian students (N=155)	Difference
Sample average	+0.53	+1.24	0.71
Males (N=103)	-0.09	+1.46	1.55
Females (N=238)	+0.83	+1.16	0.33

Source: from the authors' data.

Although our overall sample of 341 participants permits us to test hypotheses concerning indoctrination, cultural differences, and gender socialization, we realize that the samples of Romanian students of Sociology have clearly put limitations on our ability to run rigorous statistical tests. We would also like to replicate the study with samples of the beginning students of Economics and Sociology to test the self-selection hypothesis. More data on students from different countries would be needed to fine-tune the Collaboration Index. Conducting similar studies, comparing different disciplines of study and different cultures, would provide empirical evidence needed to increase our understanding of different cultures and differences, if any, among the individuals' choices in career paths. While the university students are an easily-access population for the university faculty, we recommend that similar studies outside the walls of the academy would greatly enhance our understanding of similarities and differences.

Conclusions and Recommendations

Contrary to some previous research, the analysis of our data reveals no statistically significant differences between the Economics and Sociology students' attitudes towards cooperation. Comparison of the beginning and the more advanced students of Economics show a worsening of opinions about teamwork during the undergraduate economic studies. However, we also observe a similar shift among the first and the second-year students of Sociology. Thus, the drop in willingness to cooperate among the undergraduate economics students does not support the *indoctrination hypothesis*.

The challenge of finding convincing, unequivocal evidence demonstrating the negative impact of economic education on the students' opinions about working together may cast more doubts on the general impact of academic teaching on students' values and attitudes. How far, if at all, can a university education mold students' attitudes? The question is vital since there is a common belief that formal academic education develops various positive attitudes and values. Social awareness, openness, curiosity, and reflection, are repeatedly enumerated as outcomes stemming from a university education. Apparently, such declarations are based on the tacit assumption that university education can influence students' attitudes. Yet, on the other hand, developmental psychologists refute the possibility of influencing the attitudes and values of the adult minds (Erikson, 1950; see also: Costa, McCrae, 1997; Hummel *et al.*, 2016).

Longitudinal studies may be the answer to the inconclusiveness of the empirical research on the economists and their (un)willingness to cooperate. Such an endeavor would require following a group of students from the beginning of their studies to their graduation, or even beyond. Such an approach is yet to be taken by the researchers.

An additional problem with finding a convincing empirical evidence supporting the *indoctrination hypothesis* stems from the two opposite tendencies reported in the literature: the first is the alleged indoctrination by economic theories having a negative influence on

students' cooperativeness, and the second, pointed by, among others, Frank, Gilovich and Regan (1993), Hu and Liu (2003), and also revealed in our study, claiming an increase in cooperativeness with age and maturity. If the second effect is stronger, finding support for the strong version of the *indoctrination hypothesis*, i.e. declining cooperativeness in the course of economics' studies, become highly implausible (a weak version of the *indoctrination hypothesis* would be a relatively slower pace of increasing cooperativeness).

The impact of cultures on shaping values, attitudes, and behaviors is well-established. Our comparison of samples from two countries lends support to the hypothesis that culture is an important factor in shaping peoples' worldviews and perceptions of others. The higher level of willingness to work together among the Romanian sample may be linked to their collectivistic culture, and the greater level of hesitation among the Polish respondents may be a reflection of the individualistic values typical of their society.

The differences noted among males and females may be attributed to the socialization of girls and boys. The parents, in all cultures, tend to treat children of different genders differently, not only in dressing them in different colors but also in encouraging them to play different types of games. The boys are encouraged to participate in competitive (win-lose) games; the girls are encouraged to share their toys, collaborate, and play together (Albert, Porter, 1988; Martin *et al.*, 1995; Witt, 1997; Van Volk, 2003). As a result, women from many cultures are more willing to work in groups and collaborate.

Despite the sample-size limitation of our study, our findings demonstrate that culture and gender play a significant part in shaping the students' attitudes towards cooperation. Since the need for people from different cultures to cooperate is an ever-growing necessity in the era of globalization, there is a greater need for cross-cultural studies to fully recognize and describe the impact of economic studies on people's willingness to work together. To this end, our effort may be viewed as a modest pilot study.

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