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SIDE EFFECTS MAY INCLUDE SELFISHNESS? REFUTING THE HYPOTHESIS ON THE MORAL HARM OF ECONOMIC EDUCATION

Abstract. This paper revisits the widely debated claim that exposure to economic education undermines students' moral standards, a view most prominently articulated by Frank, Gilovich, and Regan (1993). Drawing on their hypothesis, we surveyed second-year undergraduate students ($N = 530$) enrolled in seven programmes across academic disciplines. Participants were asked to assess the likelihood of honest behaviour, both their own and others', in response to six scenarios involving a trade-off between ethical conduct and material self-interest, two of which were based on Frank et al.'s study. We hypothesised that economics students would estimate lower probabilities of honest behaviour than students from other disciplines, and that the perceived likelihood of honesty would decrease as exposure to economics increased. Neither hypothesis was supported. Despite having completed an intensive and mainstream-oriented introductory course on economics, economics students did not perceive dishonest behaviour as more likely than their peers. In one scenario, they even expressed greater trust in others' honesty than other students. The expected negative association between the intensity of economics instruction and more cynical and selfish ethical judgment did not emerge. Moreover, statistically significant but weak positive correlations were observed between these factors in three of the twelve cases analysed. These findings challenge the assumption that economic education promotes self-interest at the expense of ethical standards, suggesting the need to reassess the empirical foundations of this claim.

Keywords: economic education, indoctrination, *homo economicus*, honesty, self-interest.

1. Introduction

On the one hand, there is little doubt that moral foundations are established early in life, typically shaped during childhood and adolescence (cf. Durkheim, 1973; Kohlberg & Kramer, 1969; Piaget, 1932). On the other hand, concerns have been raised for several decades that university education, particularly economic education, may have a detrimental impact on students' ethical values. These concerns were most prominently articulated in a widely cited article by Robert Frank, Thomas Gilovich, and Dennis Regan (1993), in which the authors argued that “the self-interest model commonly used in economics alters the extent to which people behave in self-interested ways” (p. 159). In this influential study – cited over 2,500 times to date – Frank et al. suggested that exposure to economic reasoning could foster self-serving behaviour and weaken individuals' adherence to moral norms.

The claim that “economics makes you selfish” has since been the subject of extensive debate, not only within academic discourse (e.g. Etzioni, 2015; Mitroff, 2004), but also among public figures and opinion leaders (cf. Clifford, 2018; Grant, 2013; see Girardi et al., 2024 for more examples). It gained additional visibility through its appearance in *Doughnut Economics*, a bestselling critique of mainstream economic thought by Kate Raworth (2017).

This paper revisits the hypothesis advanced by Frank et al. (1993), employing a comparable research framework but with significant methodological enhancements. Like the original study, we conducted an honesty survey based on a series of ethical dilemmas, each involving a potential material benefit gained through the violation of social or moral norms. Two of the six dilemmas used in our study were directly borrowed from Frank et al. (1993). However, unlike the original research, which focused on a narrow group of students from only two academic disciplines, our sample comprises second-year students from seven undergraduate degree programmes spanning a broad array of fields, including the natural sciences, humanities, social sciences, and STEM. Each social sciences programme includes a mandatory economics course, though the number of instructional hours varies. The focus on second-year students was intended to ensure that all participants who had economics in their curricula not only attended but also completed at least one course in economics, thereby receiving sufficient exposure to the theoretical frameworks often associated with the promotion of self-interest as a normative behavioural model.

Drawing on existing literature (Frank et al., 1993; Frey & Meier, 2005; Wang et al., 2011), we formulated two hypotheses:

- H1: Economics students estimate a higher likelihood of dishonest behaviour than students from other disciplines.
- H2: The number of hours of economics instruction positively correlates with the perceived likelihood of acting dishonestly.

Our empirical findings do not support the hypotheses of a negative effect of economic education. Despite having completed an intensive, mainstream-oriented introductory course totalling 140 hours (23 ECTS credits), economics students did not perceive dishonest conduct as more probable than their peers from other disciplines in any of the six dilemmas. This also holds true for the two scenarios taken from Frank et al. (1993). Notably, in the case of one dilemma involving the use of office supplies for personal purposes, economics students, alongside students of management and mathematics, expressed greater trust in others' honesty than students of law or journalism.

Moreover, our analysis of the relationship between the intensity of economics instruction and ethical judgment revealed no negative correlation. On the contrary, Spearman correlation coefficients suggest a weak but positive relationship between the number of hours of economics education and the perceived likelihood of honest behaviour, statistically significant in three of the twelve cases. While this should not be interpreted as evidence of a causal effect, the findings clearly raise questions about the assumption that economics instruction undermines ethical standards.

The paper is structured as follows. We begin with a review of the literature on the influence of higher education on moral values, with particular attention to economics education. This is followed by a detailed description of our research design and empirical findings. The final sections present a discussion of these results, considering earlier studies, and conclude with key implications and directions for future research.

2. Literature review

Research on moral development has long recognised the significant role of education in shaping individuals' moral foundations (cf. Durkheim, 1973; Kohlberg & Kramer, 1969; Piaget, 1932). This influence is generally taken as a given. However, both the conviction that such a relationship exists and the bulk of empirical evidence supporting it pertain primarily to in-formal education during early childhood, and if formal education is considered,

it usually concerns the preschool and primary levels. In contrast, the potential influence of higher education, particularly university-level teaching, on students' moral foundations has received considerably less attention. While the literature on moral foundations development identifies a plethora of factors that affect its formation, higher education is rarely examined as a channel through which moral attitudes might be shaped or significantly altered.

When the potential influence of higher education on students' morality is considered, it tends to appear within two distinct strands of academic discourse. The first concerns the evaluation of ethics courses, particularly those designed to promote norms of professional conduct within specific disciplines (cf. Desplaces et al. 2007; Konow, 2017; Schwitzgebel et al., 2020; Waples et al., 2009). The second, more critical, and important for the present study, raises broader concerns about the possible negative moral implications of higher education itself, either across the university experience or within particular fields of study.

Among the various academic disciplines, economics and business studies have attracted the most sustained scrutiny regarding their potential morally harmful effects. These programmes have been criticised for promoting a worldview centred on profit maximisation, strategic reasoning, and the prioritisation of individual utility – a perspective some argue may encourage traits such as egoism, calculative thinking, and diminished concern for others (Bauman & Rose, 2011; Frank et al., 1993; Frey & Meier, 2005; Rubinstein, 2006). In addition to the learning effect, the differences between economists and others have been explained by the self-selection of more egoistic individuals into economics and business programmes.

The empirical investigations were sparked by the seminal study of Maxwell and Ames (1981), who used a public good game to show that economics graduates contributed significantly less to the common fund than others. Numerous subsequent game-theory-based experiments have echoed these findings, suggesting that economics students tend to behave in more self-interested ways compared to those from other disciplines (e.g. Carter & Irons, 1991; Gerlach, 2017; Wang et al., 2011).

However, the results of some experiments (Dzionek-Kozłowska & Neneman, 2022; Girardi et al., 2024) and findings from surveys, natural experiments, and field studies have been far more mixed (e.g. Dzionek-Kozłowska & Kobylecki, 2025; Dzionek-Kozłowska & Rehman, 2017; Hummel et al., 2018; Laband & Beil, 1999; Neubaum et al., 2009), indicating that any claims regarding the moral consequences of academic training, particularly in economics, should be treated with caution.

A separate strand of empirical research has employed survey-based methods using hypothetical ethical dilemmas to investigate potential differences between economics students and their peers. These studies typically present respondents with scenarios involving a conflict between personal gain and adherence to a moral or social norm. The underlying assumption is that if economic education exerts a morally corrosive influence, students exposed to it should show a greater willingness to prioritise self-interest than students in other fields – even at the cost of breaking a norm – and, by the same token, they expect others to do the same. Scenarios, which are presented to examine differences between economics and non-economics students which are typically drawn from organisational or workplace contexts, range from using company resources for personal purposes to concealing one's own mistakes or failing to report others' violations of company policy (O'Clock & Okleshen, 1993; Segal et al., 2011; Shepard & Hartenian, 1991). Respondents were either asked to indicate whether they would behave similarly in a given situation or to assess the acceptability of the behaviour, using binary choices or Likert-type scales. In most of these studies, comparisons between students of economics or business and students of other disciplines (e.g., sociology, engineering, or criminal justice) revealed no systematic differences or provided mixed evidence. In Segal et al.'s (2011) study, for instance, economics students were more accepting of harmful conduct than criminal justice students in seven out of 25 scenarios, while they appeared more ethically restrained in cases related to insider trading or the misrepresentation of harmful by-products. Shepard and Hartenian (1991) did not find statistically significant differences between business and sociology students, whereas O'Clock and Okleshen (1993) reported only one dimension that differentiated business undergraduates and engineers: the latter were more critical of the reluctance to engage in whistleblowing.

Other authors have gone a step further by asking respondents to assume the role of an entrepreneur facing morally difficult decisions, particularly in scenarios involving layoffs aimed at increasing profit margins. The most influential of these studies was conducted by Rubinstein (2006), who challenged participants with a set of different options varying in the trade-off between employment levels and company profits. Notably, the company remained profitable even when no layoffs were made, yet the highest profits could be achieved by dismissing about half the workforce. This study, along with two follow-ups by Cipriani et al. (2009) and Brosig et al. (2010), found that economics students were more likely to choose the profit-maximising option than students from other fields. However, in Cipriani et al.'s study, law students were even more inclined to choose profit maximisation than

economics students. All three studies also showed that the way the trade-off was presented (e.g., as a table versus as a formula) had a significant effect on respondents' choices. When presented as a mathematical function, students from all disciplines were significantly more likely to opt for profit maximisation, and the disciplinary differences largely disappeared.

An unconventional approach was adopted by Wang et al. (2011), who asked respondents to recall and describe real-life situations in which they might have acted greedily. Instead of evaluating standardised dilemmas, participants reflected on their own past decisions. The findings suggested that economics majors and students who had completed three or more economics courses reported more positive feelings about their greedy actions than those with less exposure to economics teaching. While the result initially appears to support the hypothesis of a morally distorting effect of economics education, the open-ended design of the study introduces interpretative difficulties. The recalled situations could have varied widely in severity, and it is difficult to compare relatively trivial examples of greediness, such as taking more than one promotional item from a stand, to serious violations like stealing or misusing confidential data during an internship.

In contrast to Wang et al.'s open-ended approach, a number of studies have employed clearly defined sacrificial moral dilemmas, most notably the Trolley Problem (Foot, 1967), to explore whether the impact of economics education extends beyond contexts directly related to financial or organisational decision-making. These sacrificial dilemmas require respondents to choose between options that prioritise different ethical principles, particularly deontological versus utilitarian reasoning. The motivation behind this strand of research was to examine whether economic training could reach deeper moral foundations. However, comparisons between economics students and their peers from other fields, including sociology (Dzionek-Kozłowska & Rehman, 2019; Dzionek-Kozłowska et al., 2024), law (Dzionek-Kozłowska & Kobylecki, 2025), and a wide range of disciplines (Dzionek-Kozłowska et al., 2025), offered no support for the indoctrination hypothesis: extended exposure to economics did not correlate with more utilitarian responses in the sacrificial ethical dilemmas. Interestingly, the last study revealed that the only groups displaying significantly more utilitarian responses were students of medicine and national security – study programmes whose alums may encounter real-world situations involving the sacrifice of one life to save several others. This suggests that differences in how students of various majors respond to ethical dilemmas may emerge in cases that they perceive as reflecting situations likely to arise in their future professional practice. This, in turn, might help explain the differences reported by

Rubinstein (2006) and subsequent studies in how economics students, compared to their peers, responded to the profit-versus-employment dilemma faced by a firm owner.

Seen from the perspective of studies employing the Trolley Problem, it may be surprising that Frank et al. (1993), who tested students' honesty using a similarly neutral "lost letter" scenario, reported significant differences between economics and astronomy students. While the first dilemma in their questionnaire, involving a business owner who receives one item more than ordered, is clearly situated within an economic context, which makes the observed differences more understandable, the "lost letter" scenario lacks this contextual framing. Discussing this paper, despite its popularity and impact on the general perception of the harmful effects of economic education, is problematic, as the study's research design raises several concerns. Participants completed the same questionnaire twice, at the beginning and end of the term, and the authors interpreted changes in responses as evidence of a decline in the honesty of economics students. Yet, the study does not provide information on the full distribution of response changes: we are not informed whether the remaining students kept their answers unchanged or perhaps even shifted toward more honest choices. Crucially, the study lacks basic methodological transparency, as no sample sizes are reported for individual groups, no details are given about how the response scale was constructed, and no statistical significance tests are reported, making it impossible to determine whether the observed differences were meaningful. Moreover, the questionnaires were coded using personal identifiers (such as middle names or mothers' maiden names) – a practice that seems particularly inappropriate for a survey on moral self-assessment.

Yezer, Goldfarb, and Poppen (1996) replicated Frank et al.'s (1993) study, addressing some of its key limitations. They avoided identifying participants by name, employed a more transparent response format (asking students to indicate the likelihood of their and the other person's dishonest behaviour on a 0–100 scale), and included sizeable samples of economics, psychology, and biology students (two economics courses with 175 students each; psychology and biology, 130 students each). Unlike Frank et al.'s research, their findings showed no statistically significant differences between groups.¹ A further attempt to replicate the original study was made by Iida and Oda (2011) at Kyoto University, with a sample of 154 economics and 245 non-economics students. Although they found statistically significant differences in self-assessed dishonesty, with economics students more willing to admit they would behave dishonestly, their study also has limitations. The survey was administered after the students had participated

in a Prisoner's Dilemma game, potentially priming some of them toward strategic thinking, and the honesty survey questions involved only binary choices (e.g., "Would you...?" vs. "Would you not...?"), rather than allowing participants to express degrees of likelihood of honest behaviour. No significant differences emerged when participants evaluated the likely behaviour of third parties.

Our study intended to revisit the claims made by Frank et al. (1993), however, using a more diverse sample of students from a broad range of academic disciplines, because previous studies (Cipriani et al., 2009; Dzionek-Kozłowska et al., 2025; Rubinstein, 2006) have demonstrated that the choice of comparison group significantly affects the interpretation of observed differences. We sought to replicate the moral dilemmas presented by Frank et al. (1993). However, we found it important to introduce new scenarios that varied in moral weight, ranging from trivial to more serious consequences, to broaden the scope of our research.

3. Research design

3.1. The aim and hypotheses

Our study aimed to examine whether, similarly to the findings of Frank et al. (1993), there would be systematic differences between economics students and students of other disciplines in how they evaluated the likelihood of dishonest behaviour. Specifically, we tested whether the number of hours dedicated to economics courses would correlate with a greater tendency to perceive self-interested behaviour at the expense of honesty as more likely, both in relation to others and to oneself.

Following Frank et al. (1993), we asked respondents to assess each of the hypothetical scenarios from both their own and others' perspectives. However, given the methodological limitations of their study, we modified the original research design. Drawing on the approach of Yezer et al. (1996), we asked respondents how likely they thought it was that someone, including themselves, would act honestly in a given situation.

Due to the sensitive nature of the topic, i.e., honesty, we were particularly concerned with maintaining complete respondent anonymity. We deliberately refrained from collecting any identifying data, ensuring that participants could respond with full confidence in the confidentiality of their responses. This design choice was intended to increase the credibility of the results, in line with prior evidence that perceived privacy improves the accuracy of self-reports on sensitive issues (Krumpal, 2013; Tourangeau

& Yan, 2007). As a result, we did not collect data from the same participants before and after taking an economics course. Instead, our aim was to capture differences between students at the same stage of their academic education but with varying degrees of exposure to economics. The sample was therefore purposefully selected to include students representing a broad spectrum of academic disciplines, i.e., humanities, natural sciences, exact sciences, and social sciences. Within the social sciences, programmes were selected to vary by the number of hours devoted to economics in the first-year curriculum. Table 1 presents the programmes included in the study and the number of hours of economics courses to be completed during the first year of undergraduate studies. Due to variation in when economics courses were scheduled across programmes, we conducted the survey at the beginning of the second year of undergraduate studies. This ensured that all respondents had already completed their first-year economics classes.

Table 1

Economic courses in the programmes of study included in the research

Programme	No. of hours of Economics during the 1 st year of studies	The course	Semester of the 1 st year	ECTS points ^b
Economics	140 h	Microeconomics Macroeconomics 1	Fall Spring	14 9
Management	60 h	Economics	Fall	6
Law	45 h	Economics	Fall	5
Sociology	28 h	Economics	Spring	4
Biology ^a	–	–		–
Journalism	–	–		–
Mathematics	–	–		–

^a Biology students can take *Economics in Natural Sciences* as an elective course in the sixth semester of their studies.

^b The ECTS stands for the European Credit Transfer and Accumulation System, where one academic year corresponds to 60 ECTS points. One ECTS point corresponds to approximately 25–30 hours of student workload.

The survey was conducted in October 2022, during the first week of the 2022/2023 academic year, shortly after classes commenced. No financial incentives or extra credit were offered for participation.

All introductory economics classes, regardless of the programme in which they are offered, are taught by academic staff from the Department of Economics. These courses follow the standard undergraduate economics curriculum and are based on *Microeconomics* and *Macroeconomics* by Mankiw and Taylor (2020, 5th edition), which presents the mainstream

(neoclassical) approach. In the second year of the Economics programme, students take courses that expose them to alternative economic perspectives, such as Trends in Contemporary Economics, Environmental Economics, Behavioural Economics, Philosophy of Economics, and Business Ethics. While these courses broaden students' perspectives, they may also attenuate the specific type of influence we were interested in capturing, i.e., the impact of exposure to standard economic reasoning, which has been the focus of concerns about the moral effects of economic education raised by Frank et al. (1993) and subsequently echoed in the literature. Therefore, if economics education were to have a negative effect on moral judgment, we would expect it to emerge after the first year of study, when students were exposed to neoclassical education, not yet influenced by courses presenting the pluralist perspectives of contemporary economics that move beyond the *homo economicus* model, perfect rationality, equilibrium, and efficiency.

Based on earlier research, and in particular the study by Frank et al. (1993), we formulated the following hypotheses:

- H1: Economics students evaluate the likelihood of dishonest behaviour as higher than students of other disciplines
 - H1a: when evaluating the behaviour of others
 - H1b: when evaluating their own likely behaviour.
- H2: The number of hours of economics instruction is positively correlated with the perceived likelihood of dishonest behaviour
 - H2a: on the part of others
 - H2b: on the part of the respondent.

3.2. The instrument and sample

Our questionnaire consisted of 12 open-ended questions based on six scenarios involving ethical dilemmas in which the pursuit of individual benefit conflicted with honesty. The first two scenarios were adapted from Frank et al. (1993)². The third referred to free riding, a phenomenon often approximated by the Public Good Game, as used by Marwell and Ames (1981) and later researchers to explore behavioural differences between economics and non-economics students. In our case, however, the situation was embedded in a realistic, local context rather than presented as an abstract game. The fourth scenario related to the workplace environment (specifically, the use of office supplies for personal purposes), while the fifth and sixth scenarios were situated in the university context. The fourth and fifth scenarios referred to relatively minor issues, whereas the sixth, i.e., taking items from the campus Take&Pay honesty store without paying, could

have been perceived as theft. In addition, the survey included six demographic questions concerning gender, age, programme of study, employment status, place of residence, and economic education. An English translation of the whole instrument, along with the detailed instructions provided to respondents prior to the distribution of the questionnaire, is included in the Appendix.

We purposefully conducted the survey in a paper-and-pencil format to allow for administration in a controlled environment. This enabled the procedure to be explained in person and allowed respondents to ask clarifying questions if needed. This approach was also intended to increase response rates compared to online surveys, particularly in structured group settings such as classrooms or training sessions (Dillman et al., 2014; Edwards et al., 2009). Moreover, previous studies indicate that some participants may perceive paper-based surveys as more anonymous or trustworthy, which was an important consideration in our decision to address ethical questions using this format (Tourangeau & Yan, 2007).

The study was conducted at a public university in Poland. The questionnaires were distributed at the beginning of class. No personal data were collected, and participants were informed about the full anonymity of their responses. There was no time limit for completing the survey.

The final sample consisted of 530 respondents ($M_{\text{age}} = 20.1$, $SD_{\text{age}} = 3.0$). The only exclusion criterion was the failure to provide information about the respondent's major. The questionnaire was not excluded if other demographic data or probability estimates were missing for individual scenarios. However, this issue proved to be marginal: across 530 respondents and a total of 6,360 possible probability estimates, only eight entries were missing, and in just one case the response fell outside the 0–100 range.

Descriptions of the variables are provided in Table 2, following the demographic overview of the sample in Table 3.

Table 2

Description of variables

Sc.	Variable	Probability of honest behaviour (a number from 0 to 100) of:
#1	Tel.01	a business owner who received an extra item in their delivery from the supplier
	Tel.02	the respondent, acting as the business owner, who received an extra item in their delivery
#2	Wallet.01	a passer-by who found a wallet containing some cash
	Wallet.02	the respondent, acting as the passer-by, who found a wallet containing some cash

Sc.	Variable	Probability of honest behaviour (a number from 0 to 100) of:
#3	Ticket_01	a passenger using public transport, aware they cannot be caught fare dodging
	Ticket_02	the respondent, acting as the passenger, using public transport and aware they cannot be caught
#4	Paper_01	an employee who has access to office supplies for personal use
	Paper_02	the respondent, acting as the employee, who has access to office supplies for personal use
#5	Beverage_01	a person who notices unattended items left by the vending machine
	Beverage_02	the respondent, acting as the person who notices unattended items left by the vending machine
#6	T&P_01	students using the unattended store based on the honour system on campus
	T&P_02	the respondent, buying items at the unattended store based on the honour system on campus

Table 3

Demographics

Variable	N	%
Gender	530	100.0
Male	218	41.1
Female	294	55.5
Non-binary	15	2.8
Do not want to answer	3	0.6
Age	530	100.0
< 19	25	4.7
19–21	417	78.7
22–25	53	10.0
> 25	6	1.1
Do not want to answer	29	5.5
Major	530	100.0
Biology	84	15.8
Economics	100	18.9
Journalism	71	13.4
Law	134	25.3
Management	46	8.7
Mathematics	43	8.1
Sociology	22	4.2
Employment	530	100.0
Yes (permanent)	100	18.9
Yes (seasonal)	271	51.1
No	141	26.6
Do not want to answer	18	3.4

Variable	N	%
Place of residence	530	100.0
Rural areas	161	30.4
City up to 19,999 residents	38	7.2
City of 20,000 to 99,999 residents	92	17.4
City of 100,000 to 199,999 residents	11	2.1
City above 200,000 residents	227	42.8
Do not want to answer	1	0.2
Economic education	530	100.0
Yes	252	47.5
No	277	53.3
Do not want to answer	1	0.2

4. Results

To explore how students from different academic backgrounds evaluate honest behaviour in ethically challenging situations, we compared their probability estimates across six scenarios. Tables 4a and 4b present the mean estimated probabilities of honest behaviour reported by respondents from seven academic disciplines, along with the corresponding medians for each group. An analysis of these statistics reveals a pattern that stands in contrast to the findings of Frank et al. (1993) and Iida and Oda (2011). In our study, economics students confronted with ethical dilemmas did not prioritise self-interest at the expense of honesty more than students from other disciplines. On the contrary, the estimates they provided, both regarding others' likelihood of behaving honestly and their own declared honesty, were among the highest across the seven groups. In fact, economics students ranked first or second in as many as eight out of the 12 cases examined.

The next stage of the analysis involved examining whether statistically significant differences existed in the estimated probabilities of honest behaviour between groups of students from different academic disciplines. While ANOVA might be the natural choice for such comparisons, preliminary statistical tests indicated that the assumptions required for parametric analysis were not met. Specifically, none of the twelve analysed variables followed a normal distribution (as indicated by the Shapiro-Wilk test), and most showed unequal variances across groups (based on Levene's test). Consequently, we applied twelve non-parametric Kruskal-Wallis tests, followed, where appropriate, by median equality tests. In cases

Table 4a
Estimated Probability of Honest Behaviour by Others
(Means and Medians)

Discipline	M _{S1}	Mdn _{S1}	M _{S2}	Mdn _{S2}	M _{S3}	Mdn _{S3}	M _{S4}	Mdn _{S4}	M _{S5}	Mdn _{S5}	M _{S6}	Mdn _{S6}
Economics	51.6	50.0	51.4	50.0	36.0	30.0	40.3	32.5	54.5	55.0	75.4	80.0
Biology	46.5	47.5	46.4	50.0	32.6	30.0	30.2	25.0	42.4	35.0	69.6	72.5
Journalism	40.9	50.0	52.6	50.0	24.7	20.0	22.2	12.0	39.9	50.0	71.3	79.0
Law	44.4	50.0	51.2	50.0	31.2	22.5	23.8	20.0	48.0	50.0	73.9	80.0
Management	52.3	50.0	49.6	50.0	37.4	32.5	41.5	40.0	54.1	55.0	70.5	80.0
Mathematics	49.5	50.0	50.3	50.0	33.2	25.0	40.5	40.0	63.6	70.0	73.3	80.0
Sociology	38.1	40.0	45.1	50.0	35.5	27.5	29.6	30.0	41.2	35.0	72.4	75.0
Total	46.8	50.0	50.1	50.0	32.5	25.0	31.8	25.0	49.6	50.0	72.7	80.0

Table 4b
Self-Reported Probability of Own Honest Behaviour
(Means and Medians)

Discipline	M _{S1}	Mdn _{S1}	M _{S2}	Mdn _{S2}	M _{S3}	Mdn _{S3}	M _{S4}	Mdn _{S4}	M _{S5}	Mdn _{S5}	M _{S6}	Mdn _{S6}
Economics	75.3	90.0	87.6	100.0	35.5	20.0	46.3	50.0	89.4	100.0	93.2	100.0
Biology	63.4	80.0	81.0	100.0	28.4	7.5	40.1	30.0	80.5	100.0	90.1	100.0
Journalism	62.6	70.0	85.2	100.0	21.5	0.0	27.2	20.0	81.1	100.0	90.7	100.0
Law	77.6	90.0	89.3	100.0	33.7	10.0	33.4	20.0	84.3	100.0	92.9	100.0
Management	72.9	85.0	86.9	100.0	43.3	25.0	49.4	50.0	89.6	100.0	95.9	100.0
Mathematics	71.7	80.0	85.9	95.0	33.4	10.0	49.2	50.0	95.8	100.0	95.5	100.0
Sociology	60.6	65.0	81.1	85.0	30.7	5.0	33.2	30.0	81.3	99.8	95.3	100.0
Total	71.0	80.0	86.1	100.0	32.2	10.0	39.6	40.0	86.2	100.0	92.9	100.0

where the overall median test indicated statistically significant differences among subgroups, we conducted additional pairwise two-sided median tests to identify which specific academic groups differed from one another (Table 5).

Statistically significant differences in median estimates of honest behaviour between academic disciplines were found in only five out of the twelve analysed cases. In these instances, the pairwise two-sided median tests identified the specific discipline pairs that differed most. Notably, the most frequent participants in these significantly different pairs were not economics but law and journalism students. For the remaining seven variables, the statistical tests did not reveal any significant differences between student groups. This suggests that in some situations described in

Table 5

Kruskal-Wallis and Median Test Results for Estimated Probabilities of Honest Behaviour

Variable	p-value (Kruskal-Wallis)	p-value (Median Test)	Significant Differences Between Groups ^a
Tel_01	.089	.623	–
Tel_02	< .001	.013	Law vs Biology Law vs Journalism
Wallet_01	.647	.711	–
Wallet_02	.071	1.000	–
Ticket_01	.124	.082	–
Ticket_02	.010	.065	Management vs Journalism
Paper_01	< .001	< .001	Economics vs Law Economics vs Journalism
			Management vs Law Management vs Journalism
			Mathematics vs Law Mathematics vs Journalism
Paper_02	< .001	< .001	Economics vs Journalism
			Management vs Journalism
Beverage_01	< .001	< .001	Mathematics vs Law Mathematics vs Journalism
			Mathematics vs Biology Mathematics vs Journalism
Beverage_02	.017	1.000	–
T&P_01	.547	.438	–
T&P_02	.546	1.000	–

^a In each pair, the group listed first provided higher probability estimates of honest behaviour. Where applicable, significant differences between student groups were identified using pairwise two-sided median tests.

the survey, prevailing norms regarding honesty and acceptable conduct may be shared across disciplines and thus remain independent of academic background and discipline-specific values and reasoning styles. However, where such differences did emerge, they may indicate that students' moral assessments are shaped, at least to some extent, by the type of education they receive, and, by extension, by values and the reasoning style characteristic of their discipline.

The differences were most evident in the scenario involving the potential use of office supplies for personal purposes (Scenario 4). Drawing on the data presented in Tables 4a, 4b, and 5, the seven academic disciplines

can be grouped into three distinct clusters. The first group consists of economics, mathematics, and management students, who estimated the likelihood of honest behaviour by strangers to be significantly higher than students from the other departments. These same students also reported higher self-perceived honesty, declaring a greater likelihood that they themselves would behave honestly in each situation. In contrast, the second group, i.e., law and journalism students, tended to assess the probability of others behaving honestly as noticeably lower. They were also more self-critical, providing the lowest self-assessments of honest conduct across the scenarios. The third group comprises students of biology and sociology, whose responses did not differ significantly from either of the other two groups. As such, their probability estimates, both for others' honesty and their own, fall somewhere between the patterns observed in the first and second groups.

In the remaining cases where significant differences in the estimated probability of honest behaviour did occur, they were found between students of biology, journalism, and law (in assessing their own honesty in Scenario #1); management and journalism (in assessing their own honesty in Scenario #3); and biology, journalism, and mathematics (in assessing others' honesty in Scenario #5). Importantly, there were no statistically significant differences involving economics students, and in particular, their assessments were not stricter than those made by students of other disciplines.

Taken together, the results do not support H1a or H1b. Economics students tended to assign higher, rather than lower, probabilities of honest behaviour, both in their evaluations of others and in their self-assessments.

As a first step in testing the validity of the second hypothesis, we returned to the grouping of academic disciplines based on the number and intensity of economics courses required during the first year of study (Table 1). To assess the existence of such a correlation, we used Spearman's rank correlation coefficients, which are presented in Table 6. The results clearly contradict Hypotheses H2a and H2b, which predicted a negative correlation between the intensity of economics education and the estimated likelihood of honest behaviour. Not only were none of the correlations negative, but several were statistically significant in the positive direction, indicating that greater exposure to economics was associated with higher assessments of honesty rather than lower ones. It should be noted, however, that the correlations are generally small, indicating that the strength of these associations is limited.

Additional econometric analyses were also conducted using data from the demographic section of the questionnaire as explanatory variables for the estimated probabilities of honest behaviour, both in relation to others

Table 6

Spearman's Correlation Coefficients between students' assessments of honesty and intensity of economic teaching during their first year of undergraduate studies

Scenario	N	r_s	p
Others' honesty			
Tel_01	530	.073	.094
Wallet_01	528	.024	.582
Ticket_01	529	.075	.084
Paper_01	529	.099	.022**
Beverage_01	528	.070	.109
T&P_01	530	.076	.081
Respondent's honesty			
Tel_02	528	.160	< .001***
Wallet_02	530	.068	.116
Ticket_02	530	.131	.003**
Paper_02	529	.063	.148
Beverage_02	529	.024	.576
T&P_02	530	.025	.565

and to the respondents themselves. Despite numerous estimations, no statistically significant relationships were found between honesty assessments and variables such as gender, age, field of study, hometown size, labour market status, or prior completion of any academic economics course.

5. Discussion

The results of our study stand in stark contrast to those obtained by Frank et al. (1993). Nor do they support the findings of Iida and Oda (2011), who reported that economics students view their own honesty more sceptically than students from other disciplines. In our case, economics students proved not more but less cynical in their assessments of the likelihood of both others and their own honest behaviour, compared to students from non-economics curricula. This pattern was evident not only in the two scenarios adapted from Frank et al.'s study but also across four additional situations included in our honesty survey. Unfortunately, due to the way the results were presented in Frank et al.'s paper, we are unable to assess

the extent of the divergence in average honesty estimates among economics students participating in the two studies.

The discrepancies between our results and those reported by Iida and Oda (2011) may seem minor. However, a closer look reveals that the two sets of findings are not directly comparable. The percentages reported in their study do not reflect the average estimated probability of honest behaviour, but rather the share of respondents who judged a given action to be honest. Furthermore, the differences observed in our data between students of various non-economics disciplines suggest that grouping all non-economics students into a single category, as Iida and Oda did, may lead to misleading conclusions. Whether differences between economics and non-economics students emerge or not depends heavily on the composition of the comparison group.

A more suitable point of reference for comparison is the research by Yezer et al. (1996). A summary of the comparable results for economics and biology students from both studies is presented in Table 7. While in all cases the American respondents estimated the probability of honest behaviour significantly lower than the Polish students (by approximately 15 to 20 percentage points), the key finding, from the perspective of both studies' objectives, is that neither revealed statistically significant differences between the estimates provided by students of the two disciplines.

Table 7
Results of Yezer et al. (1996) and the present study

Scenario	Yezer et al. (1996)		Present study	Yezer et al. (1996)	Present study
	Economics1 N = 175	Economics2 N = 175	Economics N = 100	Biology N = 130	Biology N = 84
Tel.01	32.1	27.3	51.6	30.9	46.5
Wallet_01	28.8	24.6	51.4	25.8	46.6
Tel.02	54.0	45.9	75.3	55.9	63.4
Wallet_02	67.4	61.3	87.6	70.5	81.0

One may naturally ask what accounts for the substantial differences between the assessments by students in Yezer et al.'s (1996) study and those in our own. It is difficult to determine the precise cause, but two likely explanations point to the thirty-year time gap and the cultural differences between the two countries. Some insight into one dimension of the lat-

ter – namely, differences in civic honesty between Poland and the United States – can be drawn from the well-known “lost wallets” field experiment by Cohn et al. (2019), in which the researchers examined return rates for more than 17,000 intentionally “lost” wallets across 40 countries. Poland ranked in the top quartile of countries with the highest actual return rates, while the United States fell into the third quartile. Interestingly, the actual return rates in Poland reported in Cohn et al.’s study, ranging from approximately 70% in the *Money* condition to 76% in the *BigMoney* condition, were more closely aligned with the Polish students’ self-assessments of their own honesty in the lost wallet scenario included in our study, rather than their estimates of others’ likelihood of acting honestly (86.1% and 50.1%, respectively). Although the findings from Cohn et al. (2019) offer valuable real-world evidence, they should be treated as only a preliminary indication rather than a definitive explanation of the observed differences.

A further potential explanation could be linked to the changes that have taken place in mainstream economics during the period separating the two studies. In recent years, one can indeed speak of a shift toward greater pluralism and a move away from the *homo economicus* model and the assumption of perfect rationality (Dow, 2008; Dzionek-Kozłowska, 2016; Fischer et al., 2018; Gräbner & Strunk, 2020). However, it is important to emphasise that, when designing our study, we intentionally targeted students who had completed their first year of studies, during which they attended economics courses that still present the foundations of the discipline in a neoclassical framework, based on the model of the rational economic agent, the notion of equilibrium, and the pursuit of efficiency. Courses reflecting the more pluralist face of economics are offered in later semesters. Therefore, recent shifts in mainstream economics do not appear to offer a convincing explanation for the differences we observed between earlier studies and our own.

The empirical data collected for our study confirm a well-documented pattern also reported by Yezer et al. (1996) and numerous other scholars that individuals tend to rate their own honesty higher than that of others (cf. Epley & Dunning, 2000; Zhang & Alicke, 2020). In this context, one somewhat puzzling result emerged in the third scenario (fare-dodging), where respondents from four out of the seven academic disciplines assessed their own likelihood of acting honestly more harshly than that of others. However, this anomaly seems more likely to reflect a local specificity – namely, a symbolic “red card” shown to the municipal public transport system – than to challenge the existence of the self-evaluation bias itself.

Returning to the main objective of our study, it is essential to acknowledge that, despite our efforts, our work is not without certain limitations. The most important of these stems from the method itself: by relying on a survey, we obtain only self-reported declarations and assessments rather than observations of actual behaviour. Asking about honesty is not the same as examining honest behaviour. It is possible that economics students would, in reality, behave less honestly than students from other fields. We cannot rule this out. However, no field experiment conducted to date has confirmed the existence of such a difference. On the contrary, in field experiments, economics students and graduates have actually “performed” better than other majors (cf. Laband & Beil, 1999; Yezer et al., 1996). Additionally, our results may still have been influenced by the specific selection of academic disciplines and scenarios included in the questionnaire. Future research could explore whether similar patterns emerge in other fields of study or in response to different types of ethically charged situations.

Finally, one additional finding deserves brief mention. In our sample, law and journalism students appeared notably more cynical in their assessments of others’ honesty compared to students from other disciplines. While this result should not be interpreted as evidence of the impact of academic education in these fields, it may reflect a particular cognitive orientation or mindset, perhaps one shaped by exposure to situations where dishonesty is more anticipated or visible. Whether such a tendency exists, and if so, whether it precedes or follows disciplinary socialisation, remains an open question. Nonetheless, the pattern observed here points to a potentially fruitful area for future investigation.

6. Conclusions

This study set out to re-examine the influential claim that economic education weakens students’ moral standards by promoting a self-oriented worldview. Drawing on a substantially larger and more diverse sample than the original study by Frank et al. (1993) and incorporating discipline-level variation in exposure to economics, we found no empirical support for this hypothesis. Economics students did not express lower expectations of honesty, neither their own nor others’, compared to their peers in other fields. In some instances, the pattern was even reversed. Similarly, no evidence emerged of a negative correlation between the intensity of economics instruction and ethical judgment. If anything, the observed associations were weakly positive.

These findings challenge the commonly held view that economics education fosters moral cynicism or encourages dishonest conduct. While caution is warranted in drawing causal inferences, our results suggest that the effects of disciplinary training may be more nuanced than previously assumed. Future research might build on this work by incorporating longitudinal designs, behavioural data, and cross-cultural comparisons. In particular, field experiments could offer valuable insights by capturing actual behaviour in real-world contexts, beyond self-reported assessments and hypothetical scenarios.

N O T E S

¹ For the record, it should be noted that two differences reached the 0.1 level, however, one of them ran counter to the hypothesis of greater dishonesty among economics students.

² The only difference was a replacement of the word “microcomputer” – the item used by Frank et al. (1993) in the first scenario – by a mobile phone, as the expression “micro-computer” has largely disappeared from usage.

R E F E R E N C E S

- Bauman, Y., & Rose, E. (2011). Selection or indoctrination: Why do economics students donate less than the rest? *Journal of Economic Behavior & Organization*, 79(3), 318–327.
- Brosig, J., Heinrich, T., Riechmann, T., Schöb, R., & Weimann, J. (2010). Laying Off or Not? The Influence of Framing and Economics Education. *International Review of Economics Education*, 9(1), 44–55.
- Carter, J. R., & Irons, M. D. (1991). Are Economists Different, and If So, Why? *Journal of Economic Perspectives*, 5(2), 171–177.
- Cipriani, G. P., Lubian, D., & Zago, A. (2009). Natural born economists? *Journal of Economic Psychology*, 30(3), 455–468.
- Clifford, J. (2018, August 31). *Economics Makes You Selfish? – Econ in Real Life* [Video]. YouTube. <https://www.youtube.com/watch?v=WB-win10HeE>
- Cohn, A., Maréchal, M. A., Tannenbaum, D., & Zünd, C. L. (2019). Civic honesty around the globe. *Science*, 365(6448), 70–73.
- Desplaces, D. E., Melchar, D. E., Beauvais, L. L., & Bosco, S. M. (2007). The Impact of Business Education on Moral Judgement Competence: An Empirical Study, *Journal of Business Ethics*, 74, 73–87. <https://doi.org/10.1007/s10551-006-9221-3>

- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). John Wiley & Sons.
- Dow, S. (2008). Plurality in Orthodox and Heterodox Economics. *Journal of Philosophical Economics*, 1(2), 73–96.
- Durkheim, E. (1973). *Moral Education. A Study in the Theory and Application of the Sociology of Education*. The Free Press.
- Dzionek-Kozłowska, J. (2016). Homo oeconomicus w XXI wieku. Imperializm ekonomii a ekonomia behawioralna. In M. Gorazda, Ł. Hardt, T. Kwarciański, *Metaekonomia. Zagadnienia z filozofii ekonomii* (ss. 105–130). Copernicus Center Press.
- Dzionek-Kozłowska, J. (2018). *Model Homo Oeconomicus*. Geneza, ewolucja, wpływ na rzeczywistość gospodarczą. Lodz University Press.
- Dzionek-Kozłowska, J., Gryl, K., Kobylecki, A., Kuczevska, K., Owczarek, W., & Walas, O. (2025). Academic Background and Moral Decision-Making: Insights from the Trolley Problem. *UR Journal of Humanities and Social Sciences*, 34(2), 159–177. <https://doi.org/10.15584/johass.2025.2.8>
- Dzionek-Kozłowska, J., & Kobylecki, A. (2025). On the moral tracks: How economics and law students approach the trolley problem. *Studia Prawno-Ekonomiczne* (Studies in Law and Economics), 85(2), 97–117. <https://doi.org/10.26485/SPE/2025/135/1>
- Dzionek-Kozłowska, J., & Rehman, S. (2017). Attitudes of Economics and Sociology Students towards Cooperation. A Cross-Cultural Study. *Economics & Sociology*, 10(4), 124–136.
- Dzionek-Kozłowska, J., & Rehman, S. (2019). Career Choices and Moral Choices. Changing Tracks in the Trolley Problem. *Studies in Logic, Grammar and Rhetoric*, 59(1), 177–189.
- Dzionek-Kozłowska, J., & Neneman, J. (2022). Are economic majors “indoctrinated” by their education? Public good game quasi-experiment. *Economics & Sociology*, 15(2), 110–124.
- Edwards, P. J., Roberts, I., Clarke, M. J., DiGuseppi, C., Wentz, R., Kwan, I., Cooper, R., Felix, L. M., Pratap, S., & Abel, M. H. (2009). Methods to increase response to postal and electronic questionnaires. *Cochrane Database of Systematic Reviews*, 3. <https://doi.org/10.1002/14651858.MR000008.pub4>
- Epley, N., & Dunning, D. (2000). Feeling “Holier Than Thou”: Are Self-Serving Assessments Produced by Errors in Self- or Social Prediction? *Journal of Personality and Social Psychology*, 79(6), 861–875.
- Etzioni, A. (2015). The Moral Effects of Economic Teaching. *Sociological Forum*, 30(1), 228–233.

- Fischer, L., Hasell, J., Proctor, J. C., Ukakwe, D., Ward-Perkins, Z. & Watson, C. (eds.) (2018). *Rethinking Economics. An Introduction to Pluralist Economics*. Routledge.
- Foot, P. (1967). The Problem of Abortion and the Doctrine of the Double Effect. *Oxford Review*, 5, 5–15.
- Frank, R. H. (2016). *Microeconomics and behavior*. McGraw-Hill.
- Frank, R. H., Gilovich, T., & Regan, D. T. (1993). Does Studying Economics Inhibit Cooperation? *Journal of Economic Perspectives*, 7(2), 159–171.
- Frey, B., & Meier, S. (2003). Are Political Economists Selfish and Indoctrinated? Evidence from a Natural Experiment. *Economic Inquiry*, 41(3), 448–462.
- Gerlach, P. (2017). The games economists play: Why economics students behave more selfishly than other students. *PLOS ONE*, 12(9), e0183814. <https://dx.plos.org/10.1371/journal.pone.0183814>
- Girardi, D., Halliday, S. D., Mamunuru, S. M., & Bowles, S. (2024). Does studying economics make you selfish? *Southern Economic Journal*, 90(3), 792–814.
- Grant, A. (2013, October 22). Does Studying Economics Breed Greed? Even thinking about economics can make us less compassionate. *Psychology Today*. <https://www.psychologytoday.com/us/blog/give-and-take/201310/does-studying-economics-breed-greed>
- Gräbner, C. & Strunk, B. (2020) Pluralism in economics: its critiques and their lessons, *Journal of Economic Methodology*, 27(4), 311–329.
- Hummel, K., Pfaff, D., & Rost, K. (2018). Does Economics and Business Education Wash Away Moral Judgment Competence? *Journal of Business Ethics*, 150(2), 559–577.
- Iida, Y., & Oda, S. H. (2011). Does Economics Education Make Bad Citizens? The Effect of Economics Education in Japan. *Journal of Education for Business*, 86(4), 234–239.
- Kohlberg, L., & Kramer, R. (1969). Continuities and Discontinuities in Childhood and Adult Moral Development. *Human Development*, 12(2), 93–120.
- Konow, J. (2017). Does studying ethics affect moral views? An application to economic justice. *Journal of Economic Methodology*, 24(2), 190–203.
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, 47, 2025–2047. <https://doi.org/10.1007/s11135-011-9640-9>
- Laband, D. N., & Beil, R. O. (1999). Are economists more selfish than other ‘social’ scientists? *Public Choice*, 100, 85–101.
- Mankiw, N. G., & Taylor, M. P. (2023). *Makroekonomia* [Macroeconomics] (5th ed.). PWE. (Original work published 2020)

- Mankiw, N. G., & Taylor, M. P. (2023). *Mikroekonomia* [Microeconomics] (5th ed.). PWE. (Original work published 2020)
- Marwell, G., & Ames, R. E. (1981). Economists free ride, does anyone else?: Experiments on the provision of public goods, IV. *Journal of Public Economics*, 15(3), 295–310.
- Mitroff, I. I. (2004). An Open Letter to the Deans and the Faculties of American Business Schools. *Journal of Business Ethics*, 54, 185–189.
- O’Clock, P., & Okleshen, M. (1993). A comparison of ethical perceptions of business and engineering majors. *Journal of Business Ethics*, 12(9), 677–687.
- Piaget, J. (1932). *The Moral Judgement of the Child*. Routledge & Kegan Paul.
- Raworth, K. (2017). *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. Random House.
- Rubinstein, A. (2006). A Sceptic’s Comment on the Study of Economics. *The Economic Journal*, 116(510), C1–C9. <https://doi.org/10.1111/j.1468-0297.2006.01071.x>
- Schwitzgebel, E., Cokelet, B., & Singer, P. (2020). Do ethics classes influence student behavior? Case study: Teaching the ethics of eating meat. *Cognition*, 203, 104397. <https://doi.org/10.1016/j.cognition.2020.104397>
- Segal, L., Gideon, L., & Haberfeld, M. R. (2011). Comparing the Ethical Attitudes of Business and Criminal Justice Students. *Social Science Quarterly*, 92(4), 1021–1043.
- Shepard, J. M., & Hartenian, L. S. (1991). Egoistic and ethical orientations of university students toward work-related decisions. *Journal of Business Ethics*, 10(4), 303–310.
- Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, 133(5), 859–883.
- Wang, L., Malhotra, D., & Keith, M. J. (2011). Economics Education and Greed. *Academy of Management Learning & Education*, 10(4), 643–660.
- Waples, E. P., Antes, A. L., Murphy, S. T., Connelly, S., & Mumford, M. D. (2009). A meta-analytic investigation of business ethics instruction. *Journal of Business Ethics*, 87, 133–151.
- Yezer, A. M., Goldfarb, R. S., & Poppen, P. J. (1996). Does studying economics discourage cooperation? Watch what we do, not what we say or how we play. *Journal of Economic Perspectives*, 10(1), 177–186.
- Zhang, Y., & Alicke, M. (2020). My True Self is Better Than Yours: Comparative Bias in True Self Judgements. *Personality and Social Psychology Bulletin*, 47(2), 216–231. (Original work published 2021)

Appendix

Instructions to be read to respondents before distributing the questionnaires:

In a moment, you will receive a short, one-page survey presenting six brief situations that you may find familiar from everyday life. For each situation, you will be asked two questions:

(1) How likely is it that a person would follow the described course of action?

(2) How likely is it that you would follow this course of action?

Please express your answers as percentages, where '0' means you believe it is completely improbable that the action would be taken and '100' means you are certain the action would be taken. The higher the value, the greater you consider the likelihood of the given situation.

The survey is completely anonymous. We do not collect any personal data, and we kindly ask you not to include any identifying information on the questionnaire. Please note that there are no right or wrong answers. This is not a test of knowledge. We are only interested in your personal assessment of the presented scenarios.

At the end of the survey, you will be asked to provide some basic demographic information by ticking the appropriate boxes.

Thank you very much for your time and participation.

Assessment of the probability of behaviours in social life

Situation 1

A business owner ordered nine mobile phones from a supplier but was mistakenly sent ten. Rate the probability that the business owner will inform the supplier about the mistake:%

Rate the probability that if you were the business owner, you would inform the supplier about the mistake:%

Situation 2

A passerby found a wallet on the street with the amount of PLN 300 and an ID document with an address.

Rate the probability that the finder will return the wallet with the money to the address indicated in the document:%

Rate the probability that if you were in the finder's shoes, you would return the wallet with the money to the address indicated in the document:%

Situation 3

The Trade Union of Public Transport Ticket Inspectors announced that it is going on strike today from 8:00 a.m. to 8:00 p.m., and therefore, none of the ticket inspectors will work during these hours today.

Estimate the percentage of people who always validate tickets, but **will not do it** today:%

Assuming you use public transport, estimate the probability that you **would not validate** your ticket today:%

Situation 4

The company regularly purchases a certain amount of office supplies used by its employees to perform their professional duties.

Rate the probability that employees use office supplies for personal needs:%

Rate the probability that if you were the employees of this company, you would use office supplies for your private needs:%

Situation 5

The person delivering to the vending machine in your department accidentally left a four-pack of your favourite drink next to it.

Rate the probability that the drinks will be taken away before the delivery person returns to the department:%

Rate the probability that you would take away the leftover drinks:%

Situation 6

Let's assume that your department has a self-service kiosk with basic stationery materials for students. Students can take goods from the shelves and then pay for them by putting the exact amounts into the box or using QR code payments.

Evaluate the extent to which (in percentage) the value of payments made by buyers covers the value of goods taken from the shelves:%

Rate the probability that you would take one of the goods without paying:%

DEMOGRAPHICS

Gender:

- ☐ FEMALE
- ☐ MALE
- ☐ NON-BINARY

Age: years

Programme of study:

- ☐ BIOLOGY
- ☐ ECONOMICS
- ☐ JOURNALISM
- ☐ LAW
- ☐ MANAGEMENT
- ☐ MATHEMATICS
- ☐ SOCIOLOGY

Have you been employed in the past year?

- ☐ NO
- ☐ YES, BUT SEASONALLY/OCCASIONALLY
- ☐ YES, I HAVE A PERMANENT JOB

Place of residence:

- ☐ VILLAGE
- ☐ CITY UP TO 19,999 RESIDENTS
- ☐ CITY OF 20,000 TO 99,999 RESIDENTS
- ☐ CITY OF 100,000 TO 199,999 RESIDENTS
- ☐ CITY ABOVE 200,000 RESIDENTS

Economics education:

Did you complete a course in economics (microeconomics, macroeconomics, basic economics, etc.) at any earlier stage in your education?

- ☐ YES
- ☐ NO

Thank you very much for participating in the survey!