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The Effect of Academic Discipline on Policy Attitudes: The Case of Czech University Students

Arnošt Veselý[1], Petr Soukup[2]

Abstract

While the effect of academic discipline on political attitudes has long been acknowledged, much less is known on how disciplinary background affects policy attitudes. Linder and Peters (1992) argued that attitudes to policy instruments correspond with discipline: lawyers are assumed to tend to be partial to legalistic regulatory instruments, economists to favor economic tools such as loans or taxation. Nevertheless, relevant empirical evidence is almost non-existent. The paper attempts to bridge this gap by comparing policy instruments attitudes in different academic disciplines on a sample of Czech university students (N = 8820). We inquire whether students in different academic fields (with special emphasis on economics, law, education, political science, and mass media/journalism) differ in their political and policy views. In line with previous research, students pursuing economics and law (as well as education) are found to be more right-wing oriented than students of political science and mass media. Students also differ in terms of their overall acceptance of policy instruments, with those of political science being the most accepting of all types of instruments. However, we find little support for the correspondence thesis proposed by Linder and Peters.

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1. Introduction

The effect of education on political attitudes is a well-developed research topic (Bovens & Wille, 2017). A part of this research area concerns the effects of different educational backgrounds (academic disciplines) on political views. Numerous studies have reported sharp disciplinary differences in political outlook (Putnam, 1977). More than a half century ago, Emmerson (1968, s. 403) reported that "evidence from nineteen countries shows that, on the whole, students in the social sciences and the humanities are more likely to be politicized and leftist." Subsequently, Ladd and Lipset (1972) described in detail the spectrum of views across American faculties, from social scientists on the left to engineers and agronomists on the right. Since then, numerous studies have asked similar questions (Berggren et al., 2009; Fischer et al., 2017; Hanson et al., 2012).

The effect of academic discipline on *policy attitudes* is much less studied than the effects on political attitudes in general. Nevertheless, the idea that policy views might be influenced by educational background has long been acknowledged. For instance, field of education is one of the most frequently discussed determinants of technocratic beliefs among civil servants (Raudla et al., 2021). The interest in education is also demonstrated in research on the proportion of different professions in government (Rhoads, 1978) and in the fact that educational background is routinely studied in surveys of policy workers (Howlett, 2009).

The tension between an "economic" and a "political" orientation is well observable within public policy and public administration, e.g., in the critique of so-called "economism" (Wolff & Dirk, 2006). Long ago, Kingdon (1984, s. 137) noted that there is "a long-range trend toward more economists (and people receptive to their thinking) in government. Economists' language is everywhere: references to cost-effectiveness, tradeoffs, efficiency, cost allocation, and cross subsidy." Hirschman and Berman (2014) argued that economists have *different styles of reasoning* that shape how they approach problems and find solutions to them. But the effect of academic discipline is not limited to economics. Political science is also sometimes viewed to significantly affect students' perceptions and values. For instance, Elinor Ostrom

argued that many political scientists "… introduce a norm of cynicism and distrust without providing a vision of how citizens could do anything to challenge corruption, rent seeking, or poorly designed policies." Consequently, it has been argued that a certain type of education can make individuals more cynical (Harring & Jagers, 2018).

One of the most explicit claims on the effect of academic discipline on policy attitudes was proposed by Linder and Peters (1998), who argued that disciplinary background influences preferred policy instruments. The empirical support for such a claim, however, is almost non-existent. The aim of this paper is to bridge the gap by explicitly testing the effect of academic discipline on policy attitudes, with special emphasis on preferred policy instruments. The overall general research question is whether academic discipline has a significant effect upon political and policy attitudes. In so doing, we use data from a large-N dataset on Czech university students that was gathered deliberately for testing this hypothesis.

2. Literature review and theoretical background

Before literature review, it is necessary to define the core concepts, especially the term "policy attitudes." By policy attitudes, we mean attitudes of citizens on a wide range of public policies and policy proposals attempting to solve problems in diverse policy domains (e.g., health, education, energy, the environment). Policy attitudes are to be distinguished from a more general concept of "political attitudes." Political attitudes can be broadly defined as the opinions and values individuals hold about political issues, events, and personalities (Hutchings, 2008).

Distinction of attitudes from other related terms – such as opinion, ideology, values or beliefs is not easy because it partly overlaps with some of these terms. Concepts such as ideology, values and attitudes differ mostly in levels of abstraction (Maio et al., 2003). Ideology is often taken as the most abstract construct, subsuming values and attitudes and referring to "broad orientations toward justifying particular social formations" (Hitlin & Pinkston, 2013, s. 320). Values focus on abstract ideas such as freedom, equality etc. They represent orientations towards universal human aspects, and are theorized to be hierarchically ranked (Hitlin & Pinkston, 2013, s. 320).

Traditionally, attitudes are assumed to have three components: cognitive, affective, and behavioral (Breckler, 1984). The cognitive component concerns one's *beliefs*; the affective component involves *feelings*; and the behavioral component consists of ways of *acting* or intentions of acting. Although the three components tend to coalesce around a single evaluation, they need not converge in this way (Tourangeau & Galešić, 2008). People's feelings, beliefs and behaviors toward an attitude object are correlated, but distinct (Maio et al., 2003, s. 290). In recent years, conceptualization of attitudes started to privilege the feeling component over the other two (especially the

action component), as some studies demonstrated the primacy of this factor (Banaji & Heiphetz, 2010, s. 358). More often, however, attitudes are conceptualized as a dual construct (Wilson et al., 2000), i.e. attitudes are assumed to be based either on cognitions or on affects (Millar & Tesser, 1989).

General political attitudes, including political ideology (Jacoby, 1991) and values (Feldman, 2003), have been traditionally viewed as causally prior to more concrete policy attitudes. Nevertheless, policy attitudes are not fully determined by general political views, and individuals have stable attitudes toward policy instruments that are relatively independent of their perspectives on given policy problems and policy goals (Veselý, 2021). Thirty years ago, Linder and Peters (1989), in their highly cited article, argued that instrument choice is strongly influenced by perceptions of individual decisionmakers. This perception arises from several sources, but one of the most important elements in developing a strong dedication to a particular instrument is the formal education of the policy maker. Lawyers are assumed to tend to prefer instruments grounded in the legal process, such as regulations or contracts, while economists are believed to tend towards market-based instruments, such as tax incentives: "Everything else being equal, we would expect individuals trained as lawyers, for example, to first think of using legal instruments (administered contracts, procedural guidelines, etc.) with which they are most familiar rather than other types of instruments" (Gormley, 1986). Likewise, economists tend to think first of tax and expenditure instruments, or other incentive-dependent instruments such as franchises. This tendency may be reinforced by organizational memberships, as some organizations come to be dominated by one profession or another." (Linder & Peters, 1989, s. 53).

This argument, which we will label as the "correspondence thesis", was reiterated by Linder and Peters several times (Linder & Peters, 1998, 1989, 1992; Peters, 2015). Its essence is that people tend to favor a policy instrument type in line with their educational background. While Peters explicitly mentions lawyers (regulatory tools) and economists (economic tools), if the thesis is correct, information tools should be mostly preferred by people with a background in education or other disciplines working with information or education. The relevant empirical evidence on the "correspondence thesis" is very limited and rather ambiguous. Harring, Davies and Lundholm (2017) realized a two-wave longitudinal survey of Swedish university students regarding their attitudes to market solutions to environmental problems. They found that students of economics after one semester are more likely to think of economic instruments/incentives (taxes and subsidies) as good and efficient policy instruments, and they are less likely to find other instruments (regulation and information) good and efficient. However, when the correspondence thesis was explicitly empirically tested by Veselý and Petrúšek (2021) on Czech public officials, no empirical support for it was found.

Nevertheless, plausibility of the correspondence thesis is indirectly backed by several strands of related scholarly literature documenting the differences of

educational background on political views. The first strand of literature concerns the culture of academic disciplines (Kreber, 2009; Leavis, 2013; Snow, 2012) and the observation that particular disciplines have different research practices and ideals that influence participation in public debate. This can be traced back to Snow's (2012) famous distinction of two cultures and his argument that our society is characterized by a cultural split between the arts or humanities on one hand and the sciences on the other. These differences may lead to different views of the world that can affect the ways policy problems are approached and understood. In this respect, Guimond and Palmer (1990), for instance, found that within a six-month interval, students' causal explanations of poverty and unemployment changed significantly as a function of their field of study (social science, commerce, and engineering).

Second, there is a body of scholarship on bureaucratic and political elites that includes education background as a key explanatory factor (Aberbach et al., 1990; Piatak et al., 2020; Putnam, 1977). Putnam (1977), for instance, argued that the type of training that individuals underwent made little difference in their substantive views but a good deal of difference in their views about the decision-making process. More particularly, a technocratic outlook on decision-making was more often found among natural scientists and rarely among social scientists. Aberbach et al. (1990, s. 16) confirmed Putnam's hypothesis and found that "training in natural science and particularly in agriculture predisposes towards more technocratic attitudes – especially the former in the German and the latter in the US context. As expected, social scientists regardless of their affiliation are non-technocratic; to a lesser extent it holds for economists. Somewhat surprisingly, the classical German training of the executive elite in law did not produce unusually high technocratism." Similarly, to technocratic views, there is some literature on the effect of educational discipline on how decisionmakers view their roles and conduct their work. Piatak et al. (2020), for instance, found that government professionals with an educational background in public administration or political science are more likely to see their role in terms of policymaking, compared to those with other degrees.

Third, there is an extensive body of scholarship on socio-political orientations of higher education students and academics (Bonica et al., 2016; Denzler & Wolter, 2018; Elchardus & Spruyt, 2009; Fischer et al., 2015, 2017; Klein et al., 2005; Lipset, 1982; Mariani & Hewitt, 2008; Nakhaie & Adam, 2008). Various authors have empirically documented systematic relationships between academic disciplines and socio-political attitudes (Fischer et al., 2015). In general, social science and liberal arts professors tend to be left- or liberal-leaning, natural scientists middle-of-the-road, and business and engineering professors conservative or leaning to the right (Elchardus & Spruyt, 2009). Nevertheless, the situations in the U.S. and Europe seem to be different, as U.S. faculty and students exhibit predominantly liberal orientations and favor the Democratic Party (Mariani & Hewitt, 2008), which is not necessarily the case of Europe.

Fourth, closely related to the above is a body of literature on political orientations and ideological bias in particular disciplines, such as economics (Gandal et al., 2005;

Hellmich, 2020), social psychology (Duarte et al., 2015), social science (Berggren et al., 2009), or liberal arts (Hanson et al., 2012). These works examine the specifics of disciplines and their consequences for socio-political views. In this respect, economists are probably the most frequently studied group (Hellmich, 2019, 2020). There is the long-term assumption that economists approach policymaking differently, especially that they are more conservative and more inclined to market-based solutions to public problems (Stigler, 1959). Fischer et al. (2017) found that German university students studying economics has an unambiguous pro-market influence on political attitudes: by the time of graduation, economics students are some 6.2 percentage points more likely than they were in their initial year of study to agree with free-market principles. More importantly, the authors claim that "economics students acquire analytical tools that make them see the world in a different light" (p. 195). In their view, the change in economics students' political attitudes most likely originates in the informational content of the economics curriculum, which shapes the way the students derive their political attitudes from their more basic value systems. In other words, the authors assume significant and permanent change in preferred solutions to social problems. Berggren, Jordahl and Stern (2009) found that Swedish scholars in business administration, economics, and law favor more private health care, whereas scholars in sociology oppose that proposition. Also, gender studies scholars are favorable to proposals to mandate the employment of a certain percentage of women in the private sector while there is mild opposition to the idea among scholars in economics, economic history, business administration, and law (Berggren et al., 2009). Of course, the results are not surprising as these two examples of instruments—privatization of health care and affirmative action—are closely related to the general values and political orientations people hold. It is plausible to assume that attitudes to policy instruments differ among academics across fields of study. What is needed, however, is to test these hypotheses on policy proposals that are not so clearly associated with values and political stances[3].

If policy attitudes differ across disciplines, we should answer why this is so. The crucial question is whether policy attitudes are formed before entering or while studying at universities, i.e. via self-selection or via further socialization (Elchardus & Spruyt, 2009; Putnam, 1977, s. 407). According to the *self-selection theory*, differences in *political attitudes* result from a self-selection process. People typically choose environments and organizations that are congruent with their interests, goals and values (Schneider, 1987, s. 87). Consequently, students' *political attitudes* should already be clear when they are entering their educational program in a particular field of study. In contrast, the hypothesis *of political socialization* suggests that differences in political attitudes are the result of training and environment after students enter a field of study. To the best of our knowledge, there is no study testing these two

3 There is also other literature taking educational background as a potential explanatory variable in miscellaneous contexts, e.g., authoritarian-libertarian values (Stubager, 2008) or technological risk perception (Weisenfeld & Ott, 2011).

hypotheses on *policy* attitudes. The empirical evidence on political attitudes is mixed. Nevertheless, there seems to be somewhat more evidence for the self-selection theory, even though the results differ across disciplines (Fischer et al., 2015). It should be noted that the two theories are not mutually exclusive: students might be attracted to disciplines that are congruent with their worldviews (self-selection), but their attitudes can be further strengthened by their training (socialization).

Another interesting line of research was suggested by Veselý and Petrúšek (2021). They found positive correlation among all policy tools, with respondents differing more in their general total preference for using policy tools than for using some particular policy tool or policy instrument type. This led them to hypothesize that attitudes toward policy tools might have their deeper roots in some general attitudes to policy design and "designability" ("meta-preferences"), that is the extent to which decisionmakers believe that policy problems can be solved or mitigated by public policy. In this respect, there is an interesting finding by Harring and Jagers (2018, s. 797) that political scientists are more accepting of all kinds of environmental instruments (taxes, regulations, subsidies) than students of economics and law. We were thus also interested in "designability" attitudes across academic disciplines.

The study of effect of academic discipline on policy attitudes is particularly relevant for public administration in Central and Eastern European (CEE) countries. Pevcin et al. (2019) showed that in CEE countries development of public administration as a discipline directly corresponds with specific countries' classification of academic disciplines: "For instance, in Slovakia the shaping of PA education has been shaped by public economics discipline (Vitališova et al. 2019), in Estonia by business studies (Lauri 2019), in Latvia by political science (Reinholde 2019), whereas in Romania, Bulgaria and Lithuania this education has been predominantly shaped by the delivering HEI's main fields of orientation (either law, management, political science etc.)" (Pevcin et al., 2019, s. 225)[4]. Understanding specificities of academic disciplines thus can bring a new perspective on development of public administration in CEE countries, and political and policy orientation of civil servants.

Unfortunately, the literature on academic disciplines reviewed above relates mostly to the most developed, especially Anglo-Saxon, countries. Much less attention has been given to the Central and Eastern European (CEE) context. It is an important omission as CEE countries have different political and administrative legacies than Anglo-Saxon countries (Meyer-Sahling, 2010, 2009; Bouckaert et al., 2011; Kovač, 2019; Mazur, 2020). Although the findings from scholar literature reviewed above provide a useful starting point for hypotheses formulation, reality outside Anglo-Saxon countries might be quite different. Indeed, some of the few research studies on

4 However, it should be noted that some studies suggest more level of convergence toward multidisciplinary approach to PA education in CEE (Verheijen & Connaughton, 2003; Marcetic et al., 2013).

students' policy attitudes outside the most developed western countries report different findings. Cokgezen (2017), for instance, found that university students taking economics courses in Turkey have *negative* opinions about the justice of market relations, and that, unlike in the case of students in other countries, in Turkey, 4 years of study in an economics department does not change this. It is in direct contradiction with the findings of studies on Western students.

The present study on the policy attitudes of the Czech university students thus fulfills the gap in the literature described above. The case of the Czech Republic is interesting for two main reasons. First, public administration is not a well-established discipline in the country, and public servants thus typically have different educational background, especially political science, economics, and law. Second, the structure of academic disciplines (economics, law, education, journalism/media and political science) is clearly institutionalized and is directly linkable with the main types of policy instruments. We thus can directly test the correspondence thesis proposed by Linder and Peters.

3. Research questions and hypotheses

The research questions in this article are as follows:

Q1: To what extent is political orientation influenced by academic discipline?
Q2: To what extent are policy instrument attitudes influenced by academic discipline?
Q3: Do students with different educational backgrounds differ in their overall acceptance of policy instruments?

We test the following hypotheses:

H1: Students of different academic disciplines differ in their political orientation, with students of economics being the most right-wing, and students of political science the most left-wing.
H2: Students of different academic disciplines differ regarding their policy instruments attitudes. They tend to prefer instruments that correspond to their discipline (students of law prefer regulatory instruments, students of economics economic tools, and students of education and mass media information tools)
H3: The effect of academic discipline on policy instruments increases with age.
H4: Students of political sciences are more accepting of all policy instruments than students of other disciplines.

Hypothesis 1 is directed to the literature on effect of academic discipline on political views, referred to in literature review (Bonica et al., 2016; Denzler & Wolter, 2018; Fischer et al., 2015, 2017; Klein et al., 2005). Hypothesis 2 is linked to the literature assuming association between academic discipline and policy instrument

choice, especially the work S. Linder and G. Peters (Linder & Peters, 1998, 1989; Peters, 2015).). Hypothesis 3 is focused on testing socialization hypothesis (Elchardus & Spruyt, 2009). Hypothesis 4 is meant to re-test finding by Harring & Jagers (2018).

4. Methodology and data

4.1. Data

As described above, the empirical study was driven by the aim to test hypothesis that instrument preference is closely associated with respondent's field of education. The data comes from a survey of Czech university students realized by the authors specifically to examine the research questions and test hypotheses stated above. We developed our own questionnaire and selected students at colleges in the Czech Republic as the target population for several reasons. First, we sought to test the relationship between preferences and education, including socialization of students of different disciplines in specific instrument preferences. Consequently, we needed to explore individuals early in their professional career (or before start of their career).

Second, the choice of university students has also several methodological advantages. In testing the hypotheses formulated above, we need to control the number of potentially confounding factors, such as individual beliefs about policy problems, personal experience, values, or interests. Some of these factors might be included in the questionnaire and then statistically controlled, but this is impossible for all relevant factors. For a exploratory study, it is helpful to implement a research design that minimizes heterogeneity of respondents in terms of their socio-demographic characteristics, experience with the policy issue and personal interests but maintains reasonable variety in terms of ideological and value positions. Compared to the general public, university students form a relatively homogenous group in terms of age, socio-economic status, and life experience, which helps to reduce contextual factors influencing policy attitudes. At the same time, university students might be assumed to form reasonably informed attitudes towards policy issues.

The fieldwork was preceded by several rounds of pilot testing. In December 2018, the first working version of the questionnaire was tested informally, using the pen-and-paper technique, on several dozen students of the Faculty of Social Sciences, Charles University. Three focus groups with students were organized in 2019 to assess the wording of questions on attitudes to addressing public policy problems in the different domains. In May 2019, another pilot round on Faculty of Social Sciences students was implemented using the CAWI interface authored by the research team. On April 24–29, 2020, the external agency conducted a survey on the impacts of the COVID-19 pandemic on college students. In this survey (N = 319), we also administered some key attitudinal questions on ways of addressing public policy problems, which were subsequently used in the project's main survey.

Based on feedback from all of the above-mentioned pilot studies, we elaborated a pre-final version of the questionnaire and submitted it to a final round of pilot testing. This was conducted by research agency on June 15–28, 2020, on a sample of 120 respondents aimed at maximum variance of sociodemographic characteristics. The pilot survey primarily tested the intelligibility of questions, the proper functioning of filters and branching, questionnaire duration etc. The comments from the pilot survey were integrated in the final version of the questionnaire, although an overwhelming majority of the students raised no objections to the questions and found them comprehensible.

Given the nature of our study and the public unavailability of the target group's e-mail addresses, we had to obtain institutional consent. To improve the chances of successful fieldwork, we first prepared a website with basic information on the study. On June 1, 2020, we started contacting the staff of each individual public or private college via e-mail. We wanted college administrations to agree with research being conducted on their students, to use their internal information systems for distributing our unique questionnaire links, and to provide contact information of those responsible for the distribution. Of the 58 colleges applied to, 31 granted their consent in full and 3 major institutions (Charles University, University of West Bohemia, and University of Economics) consented partially by delegating the research consent to their individual faculties. The main reason for rejection stated by the colleges was a large number of own questionnaires/surveys and related concerns of "intruding" upon one's own students, or lack of interest in surveys of this kind. Some colleges did not respond to our application at all.

At the end of September 2020, we sent e-mails to the designated representatives of all colleges that had agreed to participating in the study. Here, we instructed them on the process of distributing survey invitations to students and offered the necessary technical support. However, 11 institutions refused to participate despite their previous consent. With some of them, we at least agreed on sending out the same general link to all students. The deteriorating pandemic situation was clearly the reason for the colleges' limited willingness to participate. In early October 2020, the national government ruled to practically shut down all colleges, which were expected to transition to distance learning in the new academic year. This placed an immense burden both on the staff of registrar's offices and IT departments, whose organizational support we needed for our survey, and on the students themselves.

The fieldwork took place from October 10 to November 20, 2020. In line with the plan, the CAWI online interface was used for data collection. We excluded cases with big amount of missing data on key questions (we included maximum 2 missing answers) and cases with too short time of questioning. Final size of data file is 8820. In our sample there were 6792 students from public universities and 712 from private universities. The rest students did not declare type of university. The overall response

rate reached 8.8%[5]. The representativeness of the sample obtained was assessed on the basis of national statistics of the college student population. The sample is representative in terms of degree type (Bachelor's, Master's and doctoral) and in terms of full-time/part-time study. The sample is only partially representative in terms of field of study: students of social sciences and humanities are overrepresented (by approx. 10%) and students of engineering and chemistry are underrepresented (by approx. 14%). This is primarily due to rejections by some major technical colleges to take part in the survey. For the above reasons, some caution is advised in generalizing the overall results to the entire Czech college student population. However, since the study primarily sought to test and reveal the predictors of attitudes to addressing social problems, we do not consider the deviations mentioned above to be critical. Moreover, the sample is relatively large, with all categories of study major and college/faculty orientation sufficiently populated. As a result, the individual analyses allow for testing the effects of study major or institution and controlling for any sampling bias in terms of field structure.

4.2. Dependent variables

Political attitudes were measured by several questions. First, we used a standard question on self-reported left-right political orientation: "*In politics people sometimes talk of 'left' and 'right'. Where would you place yourself on this scale, where 0 means the left and 10 means the right?.*" Then we examined perceptions of government involvement in the economy using agreement with two statements: *"(1) The government should take measures to reduce differences in income levels; (2) The less the government intervenes in the economy, the better for [Czech Republic].*

Policy instruments attitudes were measured by a general question used in a previous survey of public officials (Veselý & Petrúšek, 2021) as follows: "*The government may address social problems in different ways. Generally speaking, to what extent are the following ways typically suitable? Please indicate your opinion on a scale where 1 refers to a definitely ineffective way and 10 to a definitely effective way.*" The battery included 12 general policy instruments. Based on factor analysis, three composite variables (computed as means) were created: information and educational tools (INFO), economic tools (ECON) and regulatory tools (REG)[6].

5 The response rate was primarily hampered by the increased burden of distance learning during the COVID-19 pandemic. Nonetheless, the overall response rate is on par with or even exceeds the rates experienced in other college student surveys. For example, Eurostudent reached response rates of 7.2% in Wave VI of 2016 and 8.0% in Wave VII of 2019.

6 The dimension of information and educational tools (INFO) was based on three items: information and awareness raising; education; and supporting, mentoring, or coaching those working in the field (Cronbach's Alpha = 0.81). Economic instruments were based on two items: provision of subsidies or grants; and implementing or increasing payments or duties (Cronbach's Alpha = 0.54). Regulatory instruments were based on two items: regulation in the form of laws or other legal norms; and increasing state control and surveillance (Cronbach's Alpha = 0.71).

4.3. Independent and control variables

Field of the education was the main independent variable. Previous studies suffered from a very rough operationalization of educational fields. For instance, Stubager (2008) distinguished only three rather general fields of education: production, transportation, and technology; service, business, and administration, and care, instruction, and the arts (as a reference category). In our research, we measured study fields in much more detail. Based on the theoretical hypotheses, we were particularly interested in three educational fields corresponding with the three main types of policy instruments: lawyers (regulatory instruments), economists (economic instruments) and students of education and of mass media/journalism (information and educational tools). We added political science as another theoretically relevant group based on the assumption that students in this field might differ from other groups as they are more informed about both policy problems and policy instruments (Klein & Stern, 2006). All other education groups were considered as "other" and used as a comparison category. Age was categorized as younger/older than 22 years.

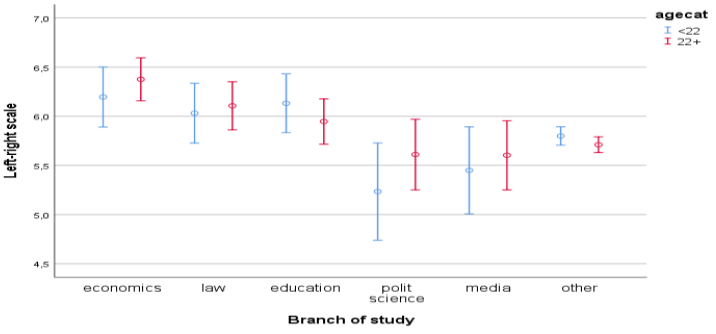
5. Results

5.1. Educational background and political attitudes

The first research question concerned the effect of educational discipline on general political attitudes. Figure 1 displays self-reported political orientation. The effect of academic discipline is statistically significant. As expected, students pursuing economics, law or education are more right-wing oriented than political scientists and mass media students. This is in line with other research findings. The explained variance, however, is quite small (0.8%). Political orientation is relatively stable over time. An analysis of the effect of academic discipline on perceived role of government (not shown here) yielded similar results.

Figure 1:

The effect of educational discipline on general political attitudes



5.2. Educational background and attitudes to policy instruments

The main research question concerned the effect of academic discipline on general attitudes to policy instruments. We analyzed three types of instruments (information, regulatory, and economic) separately.

Figure 2 and Table 2 (in the Appendix) show the relationship between information tools and field studied. Students pursuing political science and mass media/journalism consider this type of policy as more effective than students of economics and (surprisingly) also education. The overall effect of academic discipline on information tools preference, however, is very small (with only 0.9% of variance explained).

Figure 3 and Table 3 (in the Appendix) show that as expected, law students are somewhat more optimistic about regulatory instruments than other students. Interestingly, and in accordance with the socialization hypothesis, their positive attitude towards regulatory instruments increases with age. However, it should be noted that in total, field of study explains only 0.3% of the variance of regulatory instruments attitudes. Figure 4 and Table 4 (in the Appendix) display the relationship between study field and economic tools. The variance across educational fields is large and there is no statistically significant effect on economic instruments attitudes.

Figure 2:

Information tools and study field

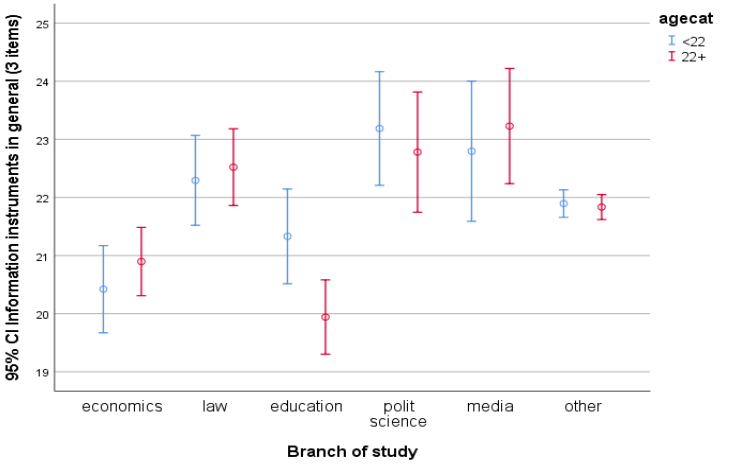


Figure 3:

Regulatory tools and study field

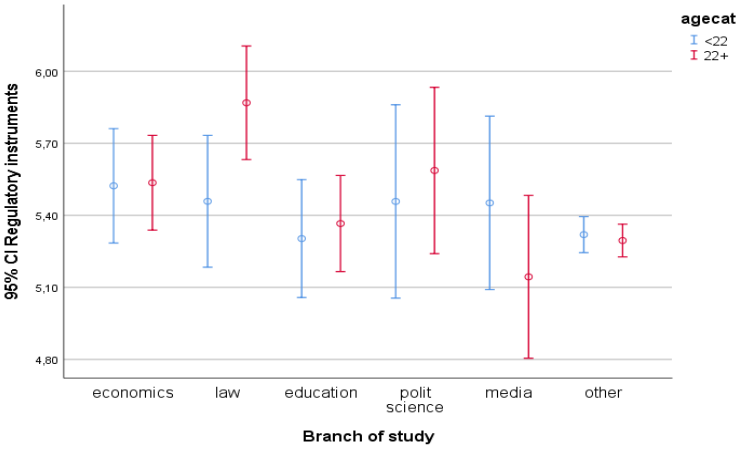
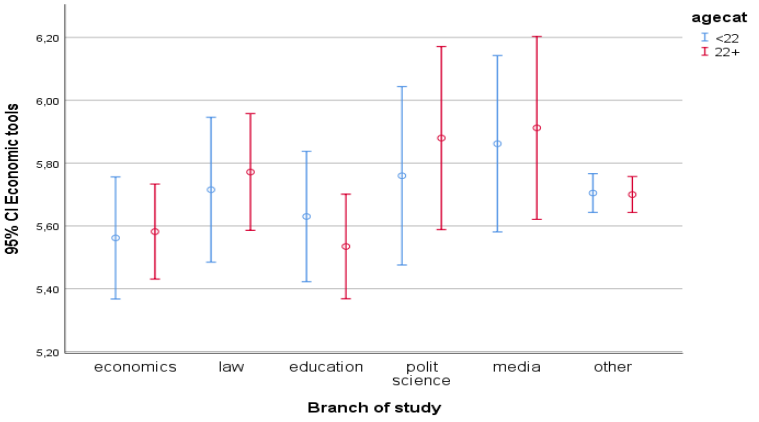


Figure 4:

Economic tools and study field



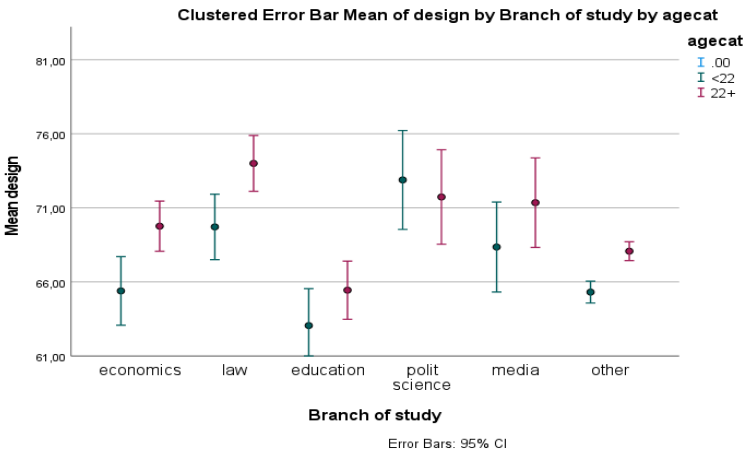
5.3. Educational background and overall attitudes to policy design

In line with Veselý and Petrúšek (2021), we found a strong positive correlation both between individual items in policy instrument battery, and three instrument types (see

Table 5 in the Appendix). We thus created a composite index of overall "designability" as a sum of responses on perceived effectiveness of individual policy instruments. As it is clear from Figure 4 and Table 6 (in the Appendix), students of political science, as well as law, are more likely to see policy instruments as effective, although with different patterns. This agrees with Harring and Jagers' (2018, p. 797) finding that "the political science students are more accepting of all the mentioned environmental policy instruments." On the other hand, students of economics and education are the most skeptical in terms of effectiveness of policy instruments (including information ones). Although the differences between students of education and political science are considerable, it should be noted that the effect of academic discipline is weak.

Figure 5:

Designability and study field



6. Discussion and conclusions

Our analysis leads to several conclusions. First and foremost, we find very little evidence to support the "correspondence thesis" proposed by Linder and Peters. At least in quantitative terms, academic field is a very poor predictor of both political and policy attitudes. Neither the socialization nor the self-selection hypotheses are confirmed. Nevertheless, although the effect is marginal in substantive terms, several findings are statistically significant and in accordance with our hypotheses: students of mass media/journalism tend to favor information instruments and students of law incline toward regulatory instruments.

Other findings, however, are less clear and more difficult to interpret, possibly

for several reasons. First and foremost, there is a lot of inconsistency in political and policy attitudes among university students. This is in line with findings from systematic reviews on the effect of academic discipline on political attitudes, which found highly inconsistent and different results across studies (Hellmich, 2019). This might be explained by the fact that college students are still young, and their political opinions and views are yet rather unordered and unstable.

The second possible explanation is the methodology used. We acknowledge numerous methodological challenges in measuring policy instruments attitudes (Veselý, 2021). Particularly, it is difficult to measure regulatory and especially economic tools in a general way because their specific applications might differ profoundly. While information tools are usually associated with positive uses (providing more information or education), economic tools (e.g., taxes) might be used in diametrically opposite ways. This is probably reflected in the reliability levels of these three types of instruments (see footnote 3 above), which in turn might lead to different effect size of academic discipline on policy attitudes.

In this respect, it would be useful to examine not only instruments but also in which ways and through which mechanisms those instruments are used. It is common to equate economic tools (e.g., taxes and subsidies) with carrots and regulation (e.g., laws) with sticks. For instance, Harring et. al (2017, p. 6) categorized taxes and subsidies as 'market-based instruments' and regulation and information as 'non-market-based instruments'. Similarly, Harring (2016) equates "reward" with economic tools and "punishment" with regulatory tools. Yet taxes and subsidies as well as regulation can be used in many ways, and our data suggests that respondents reflect this.

To sum up, simply knowing that one is a "lawyer", or an "economist" does not help us much in predicting one's political or policy attitudes. Concurrent work of our team using the same data, for instance, suggests that personality traits are much better predictors of policy views than educational background (Hiekischová et al., under review). While this does not mean that academic discipline is of no relevance to policy attitudes, the disciplinary differences are likely to be more nuanced and complicated. Among other things, our data suggest different trajectories of students in different fields. For instance, students of education seem to gradually lose confidence in "their" policy instrument type, while students of law display increasing perceived effectiveness of regulatory instruments over time.

There are also other interesting and promising ways academic field might influence policy views. Particularly, we suggest further examination of the "designability" thesis. It also might be assumed that although academic discipline is not a strong predictor *per se*, it plays a mediator role in policy attitudes formation. More importantly, it might be a constitutive factor for networks of similar policy ideas (including policy instruments).

More research is needed to get deeper insights on how policy instrument attitudes

are formed. Most importantly, it is necessary to test the hypotheses on sample of actual decision-makers. Nevertheless, our study provides new evidence on the relationship between academic discipline and policy attitudes with clear, though preliminary, implications for public policy and public administration. As described in a theoretical part, field of education is often assumed to determine policy views. It is assumed that different disciplines have different "logics", which in turn influence policy views with "economism" in policy making being the most prominent example (Kay, 2008).

Our findings confirm that certain differences among students from different fields are observable already during their studying. Such differences are, however, rather subtle. There are several possible explanations of it. First, it is likely that policy attitudes are formed only gradually, and if there is an impact of education field on the policy views, it emerges slowly and later in professional life. Second, our findings might reflect increasing diversity within disciplines. For instance, economics includes not only neoclassical economics (based on homo economicus assumption), but more and more significantly also behavioral economics (based on assumption of bounded rationality). Third, it is possible that differences in reasoning are more of qualitative nature and are not detectable by quantitative survey.

In any event, important practical implication is that we should avoid stereotypes about "typical" economical or lawyers' policy views. Other analysis of our data (Hiekischová et al., under review) shows that other factors, such as personality traits, play more significant role than educational field. The positive message for educators is that students are not strongly self-selected to their disciplines, and that they are open to different views.

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Appendix - Tables

Table 1. Political orientation of students by study field

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Economics	565	6.32	2.151	.090	6.14	6.50
Law	475	6.08	2.109	.097	5.89	6.27
Education	458	6.01	1.986	.093	5.83	6.19
Political science	226	5.46	2.219	.148	5.17	5.75
Media	215	5.54	2.036	.139	5.27	5.81
Other	4872	5.75	2.167	.031	5.69	5.81
Total	6811	5.82	2.156	.026	5.77	5.87

Tests of Between-Subjects Effects: Left-right orientation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	260.825[a]	6	43.471	9.432	.000	.008
Intercept	79153.037	1	79153.037	17173.748	.000	.717
Educational field	259.968	5	51.994	11.281	.000	.008
Age category	2.537	1	2.537	.550	.458	.000
Error	31234.890	6777	4.609			
Total	261206.000	6784				
Corrected Total	31495.715	6783				

a. R Squared = .008 (Adjusted R Squared = .007)

Table 2. Information tools and study field

Tests of Between-Subjects Effects: Information instruments in general (3 items)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2751.773[a]	6	458.629	12.240	.000	.009
Intercept	1212333.084	1	1212333.084	32355.056	.000	.802
Educational field	2713.780	5	542.756	14.485	.000	.009
Age category	16.437	1	16.437	.439	.508	.000
Error	299082.857	7982	37.470			
Total	4082795.000	7989				
Corrected Total	301834.629	7988				

a. R Squared = .009 (Adjusted R Squared = .008)

Parameter Estimates: Information instruments in general (3 items)							
Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	21.821	.100	217.514	.000	21.624	22.018	.856
Economics	−1.114	.245	−4.544	.000	−1.595	−.634	.003
Law	.571	.289	1.971	.049	.003	1.138	.000
Education	−1.395	.261	−5.340	.000	−1.907	−.883	.004
Political science	1.088	.418	2.603	.009	.269	1.907	.001
Media	1.188	.408	2.909	.004	.387	1.988	.001
Other	0[a]	.	.	.	.	.	.
[agecat = .00]	.092	.139	.662	.508	−.181	.365	.000
[agecat = 1.00]	0[a]	.	.	.	.	.	.
a. This parameter is set to zero because it is redundant.							

Table 3. Regulatory tools and study field

Tests of Between-Subjects Effects: Regulatory instruments						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	108.441[a]	6	18.074	4.415	.000	.003
Intercept	78609.701	1	78609.701	19202.248	.000	.694
Educational field	107.994	5	21.599	5.276	.000	.003
Age category	.095	1	.095	.023	.879	.000
Error	34727.501	8483	4.094			
Total	278526.250	8490				
Corrected Total	34835.943	8489				
a. R Squared = .003 (Adjusted R Squared = .002)						

Parameter Estimates: Regulatory instruments							
Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	5.309	.032	164.366	.000	5.245	5.372	.761
Economics	.225	.078	2.872	.004	.071	.378	.001
Law	.397	.094	4.237	.000	.213	.580	.002
Education	.036	.084	.427	.669	−.128	.200	.000
Political science	.228	.135	1.691	.091	−.036	.493	.000
Media	−.030	.132	−.227	.820	−.290	.229	.000
Other	0[a]	.	.	.	.	.	.
[agecat = younger]	−.007	.045	−.152	.879	−.094	.081	.000
[agecat = older]	0[a]	.	.	.	.	.	.
a. This parameter is set to zero because it is redundant.							

Table 4. Economic tools and study field

Tests of Between-Subjects Effects: Economic tools						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	36.547[a]	6	6.091	2.138	.046	.001
Intercept	87726.469	1	87726.469	30798.795	.000	.781
Branch of study	36.480	5	7.296	2.561	.025	.001
Age category	.002	1	.002	.001	.980	.000
Error	24615.643	8642	2.848			
Total	304902.889	8649				
Corrected Total	24652.191	8648				
a. R Squared = .001 (Adjusted R Squared = .001)						

Parameter Estimates: Economic tools							
Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	5.701	.027	213.404	.000	5.649	5.754	.841
Economics	−.127	.065	−1.958	.050	−.254	.000	.000
Law	.047	.078	.601	.548	−.106	.199	.000
Education	−.131	.069	−1.890	.059	−.266	.005	.000
Political science	.128	.112	1.138	.255	−.092	.348	.000
Media	.189	.109	1.726	.084	−.026	.403	.000
Other	0[a]	.	.	.	.	.	.
Economics	.001	.037	.025	.980	−.071	.073	.000
[agecat = 1.00]	0[a]	.	.	.	.	.	.
a. This parameter is set to zero because it is redundant.							

Table 5. Correlation between three types of instruments

		Information instruments	**Regulatory instruments**	**Economic instruments**
Information instruments	Pearson Correlation	1	.239**	.538**
	Sig. (2-tailed)		.000	.000
Regulatory instruments	Pearson Correlation	**.239****	1	.464**
	Sig. (2-tailed)	.000		.000
Economic instruments	Pearson Correlation	**.538****	**.464****	1
	Sig. (2-tailed)	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 6. Designability and study field

Tests of Between-Subjects Effects						
Dependent Variable: design						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	44490.888[a]	6	7415.148	19.923	<.001	.013
Intercept	12747747.488	1	12747747.488	34250.474	.000	.797
obor2	26711.718	5	5342.344	14.354	<.001	.008
agecat	17386.025	1	17386.025	46.713	<.001	.005
Error	3256306.508	8749	372.192			
Total	43025269.000	8756				
Corrected Total	3300797.396	8755				
a. R Squared = ,013 (Adjusted R Squared = ,013)						