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*Published in:*  
International Journal of Strategic Property Management

*DOI:*  
[10.3846/ijspm.2021.15768](https://doi.org/10.3846/ijspm.2021.15768)

Published: 01/01/2021

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication](#)

*Citation for published version (APA):*

Małkowska, A., Tomal, M., Uhruska, M., Pawlak, J., Maier, G., & Nichiforeanu, A. (2021). The impact of job satisfaction on valuers' attitudes towards professional ethics. *International Journal of Strategic Property Management*, 25(6), 497 - 513. <https://doi.org/10.3846/ijspm.2021.15768>

## THE IMPACT OF JOB SATISFACTION ON VALUERS' ATTITUDES TOWARDS PROFESSIONAL ETHICS

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Received 06 May 2021; accepted 04 October 2021

**Abstract.** Professional ethics is one of the two pillars of the valuer's business practice, alongside expert knowledge. Ethical principles are usually formulated within a code of professional ethics which valuers are obliged to follow. The approach to professional ethics is a complex problem and it is conditioned by several factors. In our study, we pose the question whether higher professional satisfaction of real estate valuers translates into more ethical attitudes regarding work-related dilemmas. We conducted research on property valuation services in two European markets: Austria and Poland. Data for the analysis was drawn from 176 surveys in which valuers were asked to respond to hypothetical work situations corresponding to the principles of the real estate valuer's code. The results obtained using the ordinary least squares (OLS) and two-stage least squares (2SLS) regression methods allow us to conclude that higher job satisfaction positively impacts valuers' ethical attitudes. The segment of the market served is also an important driver. Valuers who mainly work for property developers show a significantly lower level of ethical attitudes. The influence of the country on professional ethics is ambiguous.

**Keywords:** real estate valuer, job satisfaction, professional ethics, professional code of conduct, principal–agency problem.

### Introduction

#### Problem overview

Ethical issues apply to every profession. They may concern a potential conflict between the intrinsic values, requirements and nature of a certain job and the principles and ethical climate of the organisation in which the employee works. The importance of ethics, however, is particularly prominent in the liberal professions defined in the EU directive as “those practised on the basis of relevant professional qualifications in a personal, responsible and professionally independent capacity by those providing intellectual and conceptual services in the interest of the client and the public” (Directive, 2005/36/EC) (EUR-Lex, 2021). Ethics stems from the merits of the market for goods and services delivered by these professional groups, which are generally believed to be credence (or trust) goods. Due to information asymmetry, however, which is intensified by the low repeatability of purchases of some professional goods and services, consumers may find it difficult to

identify their quality (Paterson et al., 2007). Information asymmetry raises the principal–agency problem primarily in the relationship between the liberal service provider (agent) and their client (principal).

Along with the most commonly recognised liberal professions, such as lawyers, notaries, chartered accountants or architects, property valuers also belong to this category. They are, in a way, information intermediaries, supporting individual and institutional clients in decision-making, primarily by providing them with knowledge about the value of real estate assets. The valuation service is designed to reduce the client's uncertainty about the worth of the property; however, there may be a second problem resulting from information asymmetry, namely the quality of the valuation itself, which is difficult for the client to recognise.

Economics has identified many methods of dealing with the consequences of information asymmetry in principal–agent relations. Professionalisation and institutionalisation

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are the course which the valuation has followed. Developing international and national norms and standards, establishing legal regulations, implementing codes of ethics, licensing and certification, forming professional associations, defining the principles of professional responsibility and penalties, along with instituting bodies to verify the quality of valuation services, are activities leading towards strengthening the credibility of the valuer and the prestige of the profession. In order to ensure reliable, fair and independent value estimates, the valuation practice is based on two fundamental pillars: expert knowledge and ethical attitudes. As the second pillar of the real estate valuation, professional ethics is of particular importance (Hurley, 1996; Hoyt et al., 2003).

Although professionalisation and institutionalisation provide some protection against moral hazards and other negative implications in the principal-agent relationship, the valuation profession is not free of tensions, conflict situations and ethical dilemmas. The valuer themselves often encounter conflicts of interest in their work, both when valuing property for a client representing only one of the conflicting parties (e.g. expropriation or litigation), which may raise suspicion of biased opinions, and in the context of a discrepancy between their own business objectives and those of their clients. Both self-employed appraisers and those working for an employer are subject to various pressures (Worzala et al., 1998; Gallimore & Wolverton, 2000; Levy & Schuck, 2005; Amidu & Aluko, 2007; Achu, 2013; Kucharska-Stasiak et al., 2018; Małkowska et al., 2019). Loyalty to the client and employer is juxtaposed with the fundamental legal and ethical principles of the profession, mainly in terms of the independence and impartiality of the valuation services provided. In this professional environment, some areas of activity may be assessed as unethical.

Regulating institutions in the form of law, professional standards, ethical principles, and liability are the basic form of client protection, and significantly reduce potential incentives for the valuer to gain an advantage over the client. There is still, however, the possibility of non-institutional triggers stemming from personal reasons, economic benefits and the situational context. The factor that links and reflects these three aspects is job satisfaction, which influences one's attitude to work. Low job satisfaction, thus, can undermine commitment and performance also in terms of complying with ethical norms. Ethics (in its various dimensions) and job satisfaction are interdependent, although research to date has mainly focused on one direction of this influence, namely that of ethics on job satisfaction. This has mainly been studied in regard to organisational ethics. There is an important gap in the literature, however, regarding the inverse relationship, i.e. the impact of job satisfaction on ethical attitudes, especially within the context of professional ethics.

### **Problem statement**

As a highly specialised profession, property valuation allows for a high level of job satisfaction (Andrade & Westo-

ver, 2019). Therefore, bearing in mind the specificity of the valuation profession in light of agency theory and its strict ties with professional ethics, in our research, we pose the question whether job satisfaction can influence the ethical approach of property valuers. We expect:

**Hypothesis 1** – higher job satisfaction translates into a tendency to express more ethical professional attitudes.

Professions evolve over time under the influence of the cultural and political environment of the particular place (Burrage, 1988). While the valuer's profession essentially pursues the same objectives, the detailed regulations and institutional arrangements vary by country. With this in mind, we analysed the impact of job satisfaction on ethical attitudes in Austria and Poland, two countries where the profession of valuer developed independently. The most pronounced differences between Austria and Poland are the extent to which this profession is regulated and its maturity. The first Austrian regulations in this area were issued almost 70 years before the Polish ones, creating an institutional and legal framework for the profession much earlier in Austria. In Poland, the history of establishing the profession of the valuer is very short but intensive. The transition period lasted only seven years. It began with the social and economic changes of the 1990s and finally ended with the introduction of the Real Estate Management Act (1997) (*Internetowy System Aktów Prawnych*, 2021) and its later implementing regulations. Since then, Poland's legal regulations cover many aspects of valuation in great detail, making it highly formalised with a set of specific rules and procedures. The Austrian legal regulations of real estate valuation that relate to the behaviour of the valuer are rather different to some extent. Valuers might have more room for self-determination and autonomy. The state legislation, known as the Property Valuation Law with its standardised and non-standardised valuation norms, partially interferes with the functioning of the profession, leaving details to be shaped from the bottom up, at the level of employment contracts, business relations and the professional organisations' requirements (Nichioreanu, 2020; Stabentheiner, 2005).

In each country, there may be specific regulations interfering with the valuation profession either at the level of legislation or at the level of methodological solutions implemented from the bottom up by the professional valuation community. As mentioned earlier, legislation regulates the profession in great detail in Poland. Such strong interference of legislation in the professional arena has resulted in professional bodies (i.e. local associations) having only a supportive character. Any methodological standards implemented by these organisations are subordinate to the general legislation. An exception is the Code of Professional Ethics for Valuers developed by the Polish Federation of Valuers' Associations (PFVA), which has been accepted at a statutory level and all Polish valuers are legally bound to respect it. Non-observance of the rules of the profession, including the ethical ones, is punishable under professional responsibility which is highly regulated by law. The Austrian Property Valuation

Law (Germ. LBG) (Rechtsinformationssystem des Bundes, 2021) is an independent foundation for property valuation and provides a legal framework for orientation and decision-making, without imposing too many restrictions on the valuers. The LBG is applied only in court and administrative proceedings with successive judicial competence. For private value determination, the ÖNORM B 1802 was created with the scope of identifying the market value of real estate properties. Besides the aforementioned legal procedures applicable in Austria, there are also European or other internationally recognised standards. International real estate valuation processes are, as opposed to Austrian valuation methods, not standardised by legislation or rules. The internationally active professional organisation RICS (Royal Institute of Chartered Surveyors) has campaigned for an international standardisation of real estate valuation and, accordingly, published the RICS Valuation – Professional Standards Global. Feilmayr (2009) discussed the disadvantages of the three “conventional”, standardised appraisal methods in Austria: on the one hand, they are grounded in theoretical, past-oriented approaches, which insufficiently account for the future influence of market actors on commercial value, and on the other, disregard specific characteristics, and psychological and sociological aspects, as well as the notion of stakeholders.

It can, therefore, be concluded that the main difference in the institutional and legal framework of the valuation profession in Austria and Poland is the degree of formalisation of the profession. Valuation in Poland is embedded in a rigid legal framework, whereas valuation in Austria is based on greater experience and practice of the profession. Despite these formal differences, professionals in both countries face ethical dilemmas arising from the pressures they experience from clients or employers. The temptation to act unethically is present in the work of both Polish and Austrian valuers, as the valuers themselves acknowledge, and as their clients deliberately exploit (Kucharska-Stasiak et al., 2018; Nichiforeanu & Maier, 2018; Małkowska et al., 2019). The question that arises is whether valuers in both countries maintain similar ethical attitudes in light of local conditions. We expect:

**Hypothesis 2** – the attitude towards professional ethics dilemmas varies depending on the valuer’s country of origin.

The valuer status as a liberal profession, its autonomy and prestige, the job significance and public liability, along with the central role of ethics, provides an excellent laboratory for studying the relationship between job satisfaction and the attitude towards the pivotal aspect shaping the quality of work outcomes, namely professional ethics. Therefore, the main added value of this paper lies on:

- extending the existing research output in the field of professional ethics with the identified and empirically verified effects of job satisfaction on attitudes towards professional ethical dilemmas;
- filling the research gap in the area of professionalisation of valuation practice by identifying differences

in the approach to ethical issues between Austrian and Polish valuers.

First and foremost, our work contributes to the ongoing discussion on ethical issues in the valuation profession (Hurley, 1996; Gallimore & Wolverton, 2000; Hoyt et al., 2003; Achu, 2013; Amidu & Aluko, 2007).

The remainder of the paper is organised as follows: Section 1 provides a brief overview of the literature on ethics and job satisfaction, and the relationship between them. Section 2 presents the research methodology. Section 3 contains a discussion of the research results. Last section provides conclusions.

## 1. The link between ethics and job satisfaction

Organisational ethics and its relation to job satisfaction have become an important research topic (Deshpande, 1996; Grojean et al., 2004; Elçi & Alpkan, 2009). On the one hand, both ethics and job satisfaction influence many aspects of work and performance, as well as employee perception of their work and commitment. On the other hand, in a constantly changing environment, with new challenges and demands to adapt to, it becomes increasingly important to draw the line between ethical and unethical behaviour, and to define the consequences of exceeding it.

### 1.1. Job satisfaction and its foundations

Job satisfaction can be defined as the positive or negative attitude of individuals towards their work (Ghazzawi, 2008). It can lead to employee behaviours that affect the functioning of the organisation (Spector, 1997). The literature and research achievements in this field indicate several principal categories that correlate with job satisfaction. Seashore and Taber (1975) specify and discuss the classes of variables associated with job satisfaction. These include macro-environmental factors (also cultural and contextual ones), occupational characteristics, the organisational environment, the job itself and the job environment, as well as the personal characteristics of individual workers. Against the background of a wide range of factors correlated with job satisfaction, Ghazzawi (2008) distinguishes five job satisfaction antecedents: 1) personality-dispositional/genetic, 2) value-extrinsic and intrinsic, 3) work situation, 4) social influence, and 5) life satisfaction.

Job satisfaction can be seen as a global feeling about work or as a set of attitudes relating to different aspects of work, such as appreciation, co-workers, job conditions, nature of the work itself, the organisation with its rules and procedures, pay and fringe benefits, personal growth, recognition, security, supervision etc. (Spector, 1997). The nature of the work that people perform represents one of the traditional explanations for differences in job satisfaction (Kalleberg, 1977). Its key component is the scope of work, defined in accordance with Hackman and Oldham’s job characteristics theory (Hackman & Oldham, 1976), by Brief et al. (1978, p. 27) as “the degree

of variety, autonomy, task identity, task significance, and feedback perceived by the job incumbent". Higher levels of each of these features are expected to translate positively into intrinsic motivation to work, into job satisfaction and into work commitment (Ozturk et al., 2014). The valuation profession fits well with these characteristics, with its high degree of variety in work activities, autonomy and the importance of the work performed.

Empirical tests of the relationship between job satisfaction and other variables – its causes and consequences – are challenging. This is due to complex conditions and their interdependent nature. The research so far has clearly indicated that the approach to work depends on the cultural context, and the level of job satisfaction varies between countries and nationalities (Kristensen & Johansson, 2008; Solberg et al., 2014; Acelya & Cemal, 2016; Andrade & Westover, 2019; Gu et al., 2021). Cross-sectional research also confirms the diversity in job satisfaction between occupations (Al-Zoubi, 2012; Andrade & Westover, 2019; Törnroos et al., 2019), and proves the significant impact of contextual characteristics related to work. This calls for in-depth research focused on a particular occupation, especially in a cross-country comparison.

## 1.2. Ethics and its causal relations to job satisfaction

Ethical behaviour is when decisions are taken and tasks are carried out in a fair, honest manner, without accepting or giving illegal benefits. In order to evaluate human behaviour, ethics asks about the harmfulness and rightness of an act. In doing so, it takes into account the conditions under which the action takes place, the purpose, the consequences of the action and the reasons that influence the decision-making (Velasquez et al., 1996; de Graaf, 2019; DeTienne et al., 2021). In the area related to the functioning of the organisation and work performance, it is possible to distinguish a few domains of ethics. Business ethics comprises organisational principles, values and norms that may originate from individuals, organisational statements or from the legal system, which primarily guide individual and group behaviour in business (Ferrell et al., 2019). Organisational ethics expresses an organisation's values to its employees and/or others, and arise through the interaction between managers and employees (Snower & Bosworth, 2018). Professional ethics is reflected in attitudes and a set of norms that delineate specific moral duties related to the profession and professional social relations. Although it is difficult to draw hard boundaries between the aforementioned facets of applied ethics, we can confine ourselves to the general statement that organisational ethics can be seen as a (sub)part of business ethics (Fobel, 2019), and professional ethics as one of the roles played by business ethics (Lewicka-Strzałeczka, 1999).

Professional ethics derives from the professional environment and is part of professional knowledge (McGettrick & Su, 2012). Central to professional ethics is the definition of a profession as an occupation whose

essence is to put the interests of others before one's own when providing certain services. Since business is conducted for profit, however, these principles can become compromised (McGettrick & Su, 2012). Professional ethics, thus, provides a response to the dilemmas and risks arising in the profession and is most often verbalised in the form of a code of professional ethics or code of conduct.

Real estate valuation services are provided as a profit-making economic activity carried out in the public interest. Therefore, as a publicly trusted profession, valuers are primarily obliged to act in accordance with the ethics of their profession. This comprises an additional set of norms and standards to the general moral and ethical principles applicable in the private and business spheres. For valuers, professional ethics addresses potential problems and dilemmas associated with the profession in the context of its social functions. It addresses such areas as compliance with the law, fairness to the client, impartiality and independence of valuation, professional confidentiality, expert knowledge, professional duties, professional responsibility, dignity, and the prestige of the profession. One important aspect of professional ethics is to prevent the omission of certain professional duties when a conflict of interest arises (Coleman 1998, as cited in Vee & Skitmore, 2003).

Whilst this study focuses on the professional ethics of valuers, it is worth noting that this practice can take various forms – individual (often sole trader) business as well as contract employment with private and public organisations. In the latter, in addition to the principles of professional ethics, the valuer also operates within the norms and rules of the organisation. Therefore, these norms and rules should be consistent and allow the valuer to act in accordance with the overriding principles of professional ethics.

Scientific evidence for the relationship between ethics in professional practice and job satisfaction is found primarily in the area of organisational ethics. Many researchers indicate important links between ethical organisational values and important factors affecting organisational performance, e.g. organisational commitment (Hunt et al., 1989; Posner & Schmidt, 1993; Sims & Kroeck, 1994), rotation (Sims & Kroeck, 1994), and performance (Weeks & Nantel, 1992). Ethical organisational values also influence job satisfaction (Vitell & Davis, 1990; Weeks & Nantel, 1992; Deshpande, 1996). Organisational ethics in its various manifestations – top management support for ethical behaviour, the organisation's ethical climate, and the association between ethical behaviour and career success – is a prerequisite for creating a safe, value-driven workplace. It, thus, influences levels of job satisfaction among other job facets. Many studies conducted so far in various professional groups have confirmed the existence of such dependencies (e.g. Kowal & Roztock, 2013). Weeks and Nantel (1992) indicated that the ethical climate at work and working in an organisation where the code of ethics (i.e. the principles of ethical behaviour) is understood

impacts job satisfaction. Similar conclusions can be drawn from Schwepker (2001). In turn, Vitell and Davis (1990) show that employees are less satisfied with their work when unethical behaviour is common in their industry or company. They conclude that creating a more ethical climate can be one way to increase job satisfaction. Another important dimension of organisational ethics that affects job satisfaction is also top management support for ethical behaviour (Joseph & Deshpande, 1997; Viswesvaran et al., 1998; Koh & Boo, 2001). Analysing this relationship, one can refer to heuristic fairness (Lind et al., 1993; Lind, 2001), according to which perceptions of fairness in one area influence perceptions of fairness in another area. This means that employees who perceive their organisations to be ethical are also likely to perceive their organisations as being fair to them. This, in turn, will positively influence employee job satisfaction. Schwepker (2001) points to an even simpler relationship, stating that an ethical climate creates a more pleasant work environment, which directly translates into job satisfaction.

While several studies confirm the strong positive correlation between organisational ethics, its individual dimensions, and job satisfaction, the evidence for the effect of professional ethics on job satisfaction is far more limited. This was sought, for example, within the professional ethics of nurses (Fallahnejad et al., 2016) and accountants (Rogošić & Bakotić, 2019). The question is also raised to what extent can job satisfaction foster more ethical attitudes in professional activities. Vitell and Davis (1990) conclude that since an “ethical environment” can contribute to job satisfaction, there is probably a degree of relationship between job satisfaction and ethical behaviour in both directions. In their view, one is more likely to behave ethically when satisfied with work. Job satisfaction can also lead to more positive professional attitudes (Koh & Boo, 2001) and greater attention to providing quality service to customers (Whitehead, 1998). It should also be noted that a person who is satisfied with the job has fulfilled important life needs, e.g. safety, belonging, respect, and can therefore strive to meet high-level needs (Maslow, 1987). The reason for such a relationship can also be seen in loyalty and reciprocity. Employees who are satisfied with their work will be more inclined to perform their tasks to the best of their knowledge and principles and to look after their reputation. It is also important to note the link between job satisfaction and the employee’s sense of subjectivity (Motyka & Pawlak, 2012), which in turn influences the employee’s sense of social responsibility (Zbiegień-Maciąg, 2005) manifesting itself in ethical behaviour (Potocan et al., 2013).

In summary, although some authors have made reasonable assumptions and claims that higher job satisfaction promotes ethical behaviour, this relationship has not yet been adequately investigated through empirical research. Our study addresses this gap, but mainly in the area of expert attitudes toward professional ethics.

## 2. Methodology

### 2.1. Research sample

The survey covered valuers operating in the Austrian and Polish real estate markets. In particular, all Austrian court experts on property valuation, i.e. 1,399 persons, were included in the survey. It should be noted that there is no state licence for the valuation profession in Austria and, therefore, there is no state register covering all experts. Conversely, in the case of Polish valuers, a questionnaire was sent out to valuers affiliated to professional bodies (3,438 persons), whose number is roughly half of the total number of persons who have a state licence to carry out real estate valuations.

Ultimately, 77 people from Austria and 99 from Poland took part in the survey, translating into response rates of 5.50% and 2.88% respectively. Table 1 presents a detailed structure of the respondents. We see that men strongly dominate the research sample with 71.02% of all respondents. The vast majority of respondents had technical (50.00%) or economic education (39.20%). To the contrary, there is a small number of respondents with mixed education. There is a fairly even distribution of respondents in the subsequent ranges of this variable in terms of professional experience.

In order to assess the representativeness of the sample, we compared these numbers with data from the entire population of valuers in Austria and Poland. The only variable publicly available for all Polish valuers is gender information. As of 5 May 2020, there were 7,591 valuers licensed in Poland, including 46.12% women and 53.88% men (Dudek, 2020). A test for two proportions with a null hypothesis that there is no difference between the proportions was then used to check whether the sample used in this survey is representative. Based on the results obtained ( $p = 0.35$ ) there are no grounds for rejecting the null hypothesis, which indicates the representativeness of the research sample in relation to Polish valuers. Equally, in the context of Austrian valuers, there are no grounds for rejecting the claim that the research sample received is representative in terms of the gender variable. When analysing the above-mentioned list of all Austrian real estate appraisers, there are 90.42% men and only 9.58% women. This does not differ significantly ( $p = 0.33$ ) from the structure of the Austrian research sample presented in Table 1. The limited information available about the total population of valuers in Austria and Poland does not raise any concerns about the representativeness of our sample.

### 2.2. Ethics index measurement method

The survey approach is widely accepted in ethics-related real estate literature (see for example, Larsen et al., 2007; Agboola et al., 2010), for measuring the level of ethics among the valuers surveyed. In our analysis, we confronted every respondent with ten hypothetical scenarios and asked for their agreement or disagreement on a five-point scale. As in the work of Allmon and Grant (1990), the scenarios were constructed in line with the principles set out in the

Real Estate Ethical Code. In our case, they referred to the Code of Professional Ethics for Valuers of the Polish Federation of Valuers' Associations (PFVA). The study uses solely the Polish code of ethics, as no uniform document exists in Austria in this regard. The hypothetical scenarios corresponding to the principles outlined in PFVA, however, were previously verified by representatives of Polish and Austrian valuers. Taking this into account, it is likely that the results obtained in terms of measuring the level of ethics will also be reliable and valid for Austrian valuers.

It is worth mentioning that the scenarios were constructed in such a way so as not to suggest an obvious answer. The hypothetical stories present situations that are not always forbidden or reprehensible. Some cases describe situations that are permissible in light of the real estate valuer's code of ethics, but where the decision depends on the respondent's ethical sensitivity. For each case, answers 1 to 5 were assigned to indicate whether the respondent agrees or disagrees with the situation. Then, we obtained an ethics index (EI) with values between 10 and 50 by adding the respondents' responses to all ten cases. Correspondingly, higher values indicate lower levels of ethical attitude. It is important to note that based on this approach, the various ethical dimensions contribute equally to the EI. This type of assumption directly follows from previous research in the area under discussion, which did not assume unequal weights for different categories of unethical behaviour. Detailed characteristics of the designed case studies are presented in Table A1 (Appendix).

### 2.3. Job satisfaction index measurement method

The MOAQ-JSS (Michigan Organizational Assessment Questionnaire – Job Satisfaction Subscale) developed by Cammann et al. (1979) was used to measure job satisfaction among valuers. The MOAQ-JSS has several important advantages over other measures of job satisfaction. First, the MOAQ-JSS consists of only three questions while other measures of job satisfaction are much longer; for example, the Job Descriptive Index of Smith et al. (1969) includes 72 items. Second, the MOAQ-JSS also takes into account the affective component of job satisfaction, which is not included in other measures. Third, the MOAQ-JSS provides a measure of total job satisfaction rather than its individual aspects as is the case with the Job Descriptive Index. Finally, a study by Bowling and Hammond (2008) concluded that the MOAQ-JSS is a reliable and construct-valid method of measuring job satisfaction.

Applying the MOAQ-JSS to our study, we asked respondents to react to three statements, one negative and two positive: 1) In general, I am not particularly proud of my job; 2) All in all, I am satisfied with my job; 3) I like working as a property valuer. Again, respondents were asked to express their agreement or disagreement on a five-point scale. Since the first statement is negative, the response scale was inverted (i.e. answers of 5 were assigned a value of 1, and so on). Again, the Job Satisfaction Index (JSI) was constructed as the sum of the responses to these three statements.

Table 1. Structure of respondents (source: survey results)

Variable	Proportion of the sample response (%)	Proportion of the sample response (%) for Austrian valuers	Proportion of the sample response (%) for Polish valuers
Gender			
Man	71.02	87.01	58.59
Woman	28.98	12.99	41.41
Education background			
Technical	50.00	40.26	57.58
Economic	39.20	44.16	35.35
Legal	6.25	5.19	7.07
Technical and economic	2.84	6.49	0.00
Technical and legal	1.70	3.90	0.00
Work experience			
1–5	7.95	3.90	11.11
6–10	18.75	12.99	23.23
11–15	17.61	19.48	16.16
16–20	17.05	20.78	14.14
21–25	21.02	22.08	20.20
Above 25	17.61	20.77	15.16
Country			
Austria	43.75	NA	NA
Poland	56.25	NA	NA

## 2.4. Econometric model of the impact of job satisfaction on the level of ethics

In order to check for the impact of job satisfaction on the level of ethics, we ran a linear regression with the ethics index (EI) as dependent variable and the level of job satisfaction (JSI) as one of the explanatory variables. In an effort to avoid misinterpretation due to missing variable bias, we included several control variables. They characterise, among others, gender, education, professional experience, the level of pressure felt by the respondent, as well as the specificity of property valuations performed by the valuer. This set of control variables was derived from previous studies that analysed the professional activity of real estate valuers (see for example, Małkowska et al., 2019; Abidoye et al., 2021). Due to this research's international character, we added a dummy variable characterising the respondent's country. In summary, in this study, the regression model will take the following form:

$$EI = \beta_0 + \beta_1 JSI + \beta_2 PPI + \beta_3 Gender + \beta_4 WE + \beta_5 WA + \sum_{k=1}^{e-1} \alpha_k E_k + \sum_{k=1}^{t-1} \theta_k T_k + \sum_{k=1}^{p-1} \delta_k P_k + \vartheta Country + \varepsilon, \quad (1)$$

where: *EI* denotes the dependent variable (the ethics index); *JSI* is the job satisfaction index; *PPI* concerns the perceived pressure indicator; *Gender* denotes the gender of the respondent; *WE* is his/her work experience; *WA* denotes the average number of valuations made monthly by the respondent; *Country* is the dummy variable for the country of the respondent;  $E_k$ ,  $T_k$ ,  $P_k$  are dummy variables that characterise in turn the educational background, the predominant type of clients in the order structure, and the predominant type of real estate in the order structure of the respective valuer;  $\varepsilon$  is the error term;  $\beta_0, \dots, \beta_5$ ;  $\vartheta$ ,  $\alpha_k$ ,  $\theta_k$ ,  $\delta_k$  are the parameters of the model.

In order to investigate the relationship between work satisfaction and ethics in depth, the above regression model is also estimated for each of the components of the ethics index. The dependent variables in these models are E1 to E10. Table A2 (Appendix) presents detailed characteristics of all variables adopted in the regression model together with basic descriptive statistics.

## 3. Results and discussion

In the first stage of the empirical study, we estimated a linear regression model with the ethics index (EI) as the dependent variable. Table 2 shows the results for different sets of explanatory variables. The estimated models explain about 7–16% of the variation of the ethics index and in each version of the model, the coefficient for job satisfaction is statistically significant. An increase of the job satisfaction index by 1 causes the ethics index to decrease by about 0.53–0.64 (depending on the particular model).

This result means that valuers with higher job satisfaction express a more ethical approach to professional activities.

To our knowledge, this is the first study to examine the impact of job satisfaction on ethical attitudes. Linking back to the literature, we can find several studies that analyse the inverse relationship, i.e. the influence of ethics on the level of job satisfaction. It was confirmed, among others, by Schwepker (2001) analysing salespeople, Ahmed et al. (2012) investigating bankers, and by Viswesvaran and Deshpande (1996), Valentine and Fleischman (2007), and Koh and Boo (2001) studying managers. These results raise concerns of a two-way relationship between job satisfaction and ethical attitude/behaviour leading to endogeneity bias and, consequently, distorted regression coefficients.

In order to handle the endogeneity problem, we employed the well-known 2SLS method of regression analysis (details of this method are available, for example, in the paper of Li et al., 2017). In the first stage, this method requires job satisfaction to be regressed against the so-called instrument(s) and other exogenous variables. From this regression, we calculate the fitted values of the dependent variable, which in the second stage are used as the values of the variable characterising job satisfaction. In our study, we used as the instrument a variable describing the extent to which the respondent's work interferes with his/her family and social responsibilities and personal needs. From a theoretical point of view, we can assume that this variable is correlated with job satisfaction, but not with the level of ethical attitude of the respondent. This makes it a good candidate for an instrument variable. These considerations are confirmed by the results of the empirical analysis (available on request). The results of the 2SLS estimations are presented in Table 3. The impact of job satisfaction on ethical attitudes among valuers is confirmed to a large extent. Significance levels of coefficients are generally lower than in the OLS estimation. Only in the fifth model in Table 3 does the coefficient of job satisfaction become insignificant.

Another important variable in both estimations (Tables 2 and 3) was the dominant type of client in the valuer's order structure. When developers are the main group of valuation recipients, valuers show significantly higher ethics index values, which means less ethical attitudes. The strong influence of developers on the attitude of valuers is not surprising. They are usually strong market players who can impose some negative behaviours on valuers, particularly in the context of valuations for the purpose of securing claims.

The country dummy is negative and significant at the 10% level in the OLS estimation, but insignificant in the 2SLS model. The negative coefficient implies a higher level of ethics among Austrian valuers compared to their Polish colleagues. This may be explained by the fact that both the real estate profession and the real estate market are better established in Austria than in Poland, where the free market and the valuation profession itself have only



Table 2. Baseline models estimates

Variable	Coefficient				
	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	33.0114***	35.0744***	33.0264***	33.6231***	34.0056***
Job satisfaction index (JSI)	-0.6351***	-0.6287***	-0.5898***	-0.5965***	-0.5317***
Perceived pressure indicator (PPI)	0.3668	0.3730	0.5410	0.5544	0.4479
Gender	0.2418	0.4089	0.4869	0.5147	1.0338
Work experience (WE)	0.0119	-0.0049	-0.0121	-0.0134	0.0244
Work activity (WA)	0.0085	0.0205	0.0570	0.0543	0.0563
Education background (E)					
Technical		-1.8256	-1.0392	-1.1415	-2.6282
Economic		-2.6097	-1.4701	-1.4889	-2.4777
Legal		-2.6295	-3.2807	-3.3935	-4.6103
Technical and economic		0.9891	2.0734	2.3006	2.0390
Dominant type of clients in the valuer's order structure (T)					
Individuals			0.5036	0.6328	0.8443
Developers			5.4528***	5.6578***	6.0284***
Banks			-2.8719*	-2.6836	-2.7558
Courts			1.6921	1.7523	1.1878
Private enterprises (excluding developers)			-0.9470	-0.4483	-1.3270
Public bodies (excluding courts)			-1.4591	-1.5275	-2.1158
Dominant type of property in the valuer's order structure (P)					
Housing				-0.5623	-0.0704
Commercial				-1.1129	-0.0696
Forest or agricultural				-0.7573	0.3106
Respondent location					
Country					-2.2268*
R <sup>2</sup>	0.0686	0.0818	0.1372	0.1405	0.1587

Note: \*\*\* One per cent level of significance. \*\* Five per cent level of significance. \* Ten per cent level of significance. The dependent variable is the ethics index (EI).

existed for 30 years. Since this coefficient is insignificant in the 2SLS model, our Hypothesis 2 is only partially supported. Additional research is needed for a definite answer about differences in the levels of ethics between Polish and Austrian valuers.

In the next stage of the empirical study, we investigated to what extent job satisfaction affects the various dimensions of ethics defined in the PFVA Code of Ethics. For this purpose, we ran ten OLS and ten 2SLS regressions using all independent variables, but with E1-E10 – as presented in Table A1 – as the dependent variable instead of the ethics index. The results of the OLS estimation presented in Table 4 allow us to draw very interesting conclusions about the impact of job satisfaction on the level of ethics among the valuers. Job satisfaction affects only five of the ten components of the ethics index significantly. These five components can be grouped into two areas. The first area concerns the exercise of the profession in

a legal, responsible and transparent manner. The second area focuses on the prestige of the valuer profession. In particular, those satisfied with their work are more sensitive to their profession's dignity and fair pay. Conversely, job satisfaction does not affect those dimensions of ethics that are related to clients, such as reliability towards purchasers of valuations or practising a profession free from client dependence.

As a result of estimating additional models, other non-significant relationships can also be identified in Tables 2 and 3. The first is the influence of gender on the level of ethics. From the results obtained, it can be concluded that women show more ethical sensitivity than men in four aspects, while in one aspect, it is men who present a more ethical stance. It should be noted that ambiguous conclusions are in line with the literature on the subject. In particular, on the one hand, according to a survey conducted by Agboola et al. (2012) among real estate agents,

Table 3. Additional models estimates based on the 2SLS method

Variable	Coefficient				
	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	41.2314***	42.9604***	43.9922***	44.4296***	41.7786***
Job satisfaction index (JSI)	-1.2765*	-1.2264*	-1.4025*	-1.3834*	-1.1234‡
Perceived pressure indicator (PPI)	0.2037	0.2217	0.3197	0.3122	0.3143
Gender	0.3246	0.4913	0.5578	0.6067	0.9573
Work experience (WE)	0.0133	-0.0028	-0.0068	-0.0063	0.0191
Work activity (WA)	0.0158	0.0287	0.0694	0.0652	0.0636
Education background (E)					
Technical		-2.0944	-1.5615	-1.8904	-2.7631
Economic		-2.7540	-1.8678	-2.0932	-2.6448
Legal		-3.3497	-4.2871	-4.5999	-5.1533
Technical and economic		0.5123	1.1708	1.2811	1.3681
Dominant type of clients in the valuer's order structure (T)					
Individuals			0.6164	0.6415	0.7921
Developers			4.7463**	4.9434**	5.4050**
Banks			-2.7584	-2.6383	-2.7028
Courts			1.3664	1.4125	1.0962
Private enterprises (excluding developers)			-0.9872	-0.2467	-0.9370
Public bodies (excluding courts)			-1.6189	-1.6726	-2.0589
Dominant type of property in the valuer's order structure (P)					
Housing				-0.4058	-0.0923
Commercial				-1.4238	-1.0384
Forest or agricultural				-1.0884	-0.2260
Respondent location					
Country					-1.6109
R <sup>2</sup>	0.0306	0.0449	0.1130	0.1153	0.1330

Note: \*\*\* One per cent level of significance. \*\* Five per cent level of significance. \* Ten per cent level of significance. ‡ Twenty per cent level of significance (only selected for the job satisfaction index). The dependent variable is the ethics index (EI).  $N = 176$ .

it is men who are more likely to accept fraud than women. On the other hand, Hoyt et al. (2003) found no significant link between gender and ethical behaviour among New Zealand valuers. Since no study to date provides a clear answer to the question of the impact of gender differences on attitudes towards ethics, and the results of the studies presented so far do not resolve this issue unequivocally, there is room for further research in this area.

The impact of the country of origin of the valuer on particular dimensions of ethics is also very interesting. Compared to Polish valuers, Austrian valuers show a more ethical attitude in the context of aspects E3, E4, E5, E6, E7, which generally relate to the property valuation process. No significant differences between countries exist with regard to the ethical dimension of the profession's dignity. In addition, it should be noted that Polish valuers are in one respect more ethically sensitive than their Austrian counterparts, i.e. in responding to unethical or ethically ambiguous actions, which may result from several reasons of both negative and positive nature. In the latter context,

it is important to recall the desire to develop and increase professional ethics throughout the valuation profession in Poland. To the contrary, responding to unethical behaviour may also be a consequence of a desire to eliminate permanently or temporarily specific valuers from the market, in a field which is hugely demanding in Poland. It should also be noted that valuers' greater ethical attitude in Austria may be due not only to differences in the development of the property market but also to different social specificities in both countries.

Table 5 shows the 2SLS estimation results for the ten ethical dimensions. The conclusions drawn above are confirmed in full for the gender variable and, for the most part, for the variable describing the respondent's country. In terms of the job satisfaction index, unambiguous conclusions can only be drawn for the model explaining the dependent variable E4 describing ethical behaviour in relation to the valuer's tasks in the property valuation process. Job satisfaction is insignificant in all the other models in Table 5.

Table 4. Models estimates (OLS) for each ethical dimension

Dependent variable	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
Independent variable	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Constant	4.97***	1.91	2.55***	4.62***	2.83**	2.79***	2.97***	3.14***	3.74***	4.49***
Job satisfaction index (JSI)	-0.09*	0.04	-0.09*	-0.08*	-0.01	-0.03	-0.02	-0.10*	-0.01	-0.14***
Perceived pressure indicator (PPI)	-0.07	-0.04	0.05	0.07	0.10	0.03	0.15*	0.09	0.03	0.04
Gender	0.19	0.55*	0.45**	-0.02	0.42*	-0.17	0.39*	-0.02	-0.43*	-0.32
Work experience (WE)	-0.01	0.01	0.02	0.02	-0.01	0.01	-0.01	0.00	0.01	-0.01
Work activity (WA)	0.01	0.00	0.01	0.01	0.01	0.02	0.01	-0.02	0.02	-0.02
Education background (E)										
Technical	-1.14	0.15	0.56	-1.65**	-0.07	-0.01	-0.72	0.13	-0.15	0.26
Economic	-1.48**	0.16	0.51	-1.61*	-0.01	0.28	-0.77	0.54	-0.17	0.07
Legal	-1.59**	-0.22	1.06*	-1.52	-0.51	0.00	-1.03	0.11	-0.71	-0.20
Technical and economic	-1.38	1.82*	0.40	-1.58	0.25	-0.14	0.03	1.54**	-0.37	1.47**
Dominant type of clients in the valuer's order structure (T)										
Individuals	0.01	0.02	0.25	0.03	0.00	0.04	0.09	0.43	-0.30	0.27
Developers	0.15	1.28**	-0.97**	1.07	1.55***	1.94***	1.13**	0.39	-0.49	-0.04
Banks	-0.56	-0.62	-0.16	-0.35	0.11	-0.78	-0.10	-0.01	-0.62	0.34
Courts	0.14	-0.35	0.51	0.02	0.39	-0.49	0.25	0.26	-0.11	0.57*
Private enterprises (excluding developers)	-0.02	-0.02	-0.41	0.04	0.09	-0.28	-0.20	-0.13	-0.33	-0.06
Public bodies (excluding courts)	-0.17	0.09	-0.58*	-0.25	0.18	-0.85**	-0.15	0.11	-0.48	-0.01
Dominant type of property in the valuer's order structure (P)										
Housing	0.29	-0.17	-0.58**	0.44	0.09	0.24	0.21	-0.11	0.05	-0.53*
Commercial	0.21	-0.13	-0.06	0.21	-0.61**	0.40	0.11	-0.20	-0.43	-0.21
Forest or agricultural	0.44	0.10	-0.46	0.02	0.11	0.88**	0.05	-0.22	-0.44	-0.18
Respondent location										
Country	-0.33	0.57	-0.75***	-0.74***	-0.71***	-0.49*	-0.48**	-0.11	0.59**	0.23
R <sup>2</sup>	0.12	0.17	0.29	0.14	0.19	0.15	0.13	0.13	0.12	0.21

Note: \*\*\* One per cent level of significance. \*\* Five per cent level of significance. \* Ten per cent level of significance. N = 176.

Table 5. Models estimates based on the 2SLS method for each ethical dimension

Dependent variable	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
Independent variable	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Constant	3.29	1.37	4.28*	8.82***	2.79	2.78	5.74***	4.36*	3.86	4.48**
Job satisfaction index (JSI)	0.04	0.08	-0.22 <sup>‡</sup>	-0.40**	-0.01	-0.02	-0.23 <sup>‡</sup>	-0.19	-0.02	-0.14
Perceived pressure indicator (PPI)	-0.04	-0.03	0.02	0.00	0.10	0.03	0.10	0.07	0.03	0.04
Gender	0.21	0.55	0.43**	-0.06	0.42*	-0.17	0.37*	-0.03	-0.44*	-0.32

End of Table 5

Dependent variable	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
Work experience (WE)	-0.01	0.01	0.01	0.02	-0.01	0.01	-0.01	0.00	0.01	-0.01
Work activity (WA)	0.01	0.00	0.01	0.02	0.01	0.02	0.02	-0.02	0.02	-0.02
Education background (E)										
Technical	-1.11	0.16	0.53	-1.72**	-0.07	-0.01	-0.77	0.11	-0.15	0.26
Economic	-1.44**	0.18	0.48	-1.70**	-0.01	0.28	-0.83	0.52	-0.17	0.07
Legal	-1.47*	-0.18	0.94	-1.82**	-0.51	0.00	-1.23	0.03	-0.72	-0.20
Technical and economic	-1.23	1.87*	0.25	-1.94**	0.25	-0.14	-0.21	1.43**	-0.38	1.47**
Dominant type of clients in the valuer's order structure (T)										
Individuals	0.03	0.02	0.24	0.01	0.00	0.04	0.07	0.42	-0.30	0.27
Developers	0.29	1.33**	-1.10***	0.73	1.56***	1.94***	0.91	0.29	-0.50	-0.04
Banks	-0.57	-0.63	-0.15	-0.32	0.11	-0.78	-0.09	0.00	-0.62	0.34
Courts	0.16	-0.35	0.49	-0.03	0.39	-0.49	0.22	0.25	-0.11	0.57*
Private enterprises (excluding developers)	-0.10	-0.04	-0.32	0.25	0.09	-0.28	-0.07	-0.07	-0.33	-0.06
Public bodies (excluding courts)	-0.18	0.08	-0.56*	-0.22	0.18	-0.85**	-0.13	0.12	-0.48	-0.01
Dominant type of property in the valuer's order structure (P)										
Housing	0.29	-0.16	-0.58**	0.43	0.09	0.24	0.20	-0.11	0.05	-0.53**
Commercial	0.29	-0.10	-0.14	0.02	-0.61**	0.40	-0.01	-0.25	-0.44	-0.21
Forest or agricultural	0.56	0.14	-0.58	-0.27	0.12	0.88**	-0.14	-0.31	-0.44	-0.18
Respondent location										
Country	-0.46	0.53	-0.62*	-0.41	-0.72**	-0.49	-0.26	-0.01	0.60*	0.23
R <sup>2</sup>	0.09	0.17	0.27	0.15	0.19	0.15	0.14	0.11	0.12	0.15

Note: \*\*\* One per cent level of significance. \*\* Five per cent level of significance. \* Ten per cent level of significance. † Twenty per cent level of significance (only selected for the job satisfaction index).  $N = 176$ .

## Conclusions

In the valuation profession, the main factors determining the quality of provided services are expert knowledge and professional ethics. Compliance with ethical principles protects the client's interests and increases trust for valuations. Several factors influence ethical behaviour. Our study allows us to conclude that job satisfaction is conducive to improving valuers' attitudes to professional ethics. Higher job satisfaction is generally associated with a more ethical attitude. In addition to job satisfaction, the second important predictor of an ethical approach is the market segment, in the sense of the prevailing client type in the valuer's order structure. Professionals who serve mainly developers express significantly less ethical attitudes than others. This can be explained by the developer's strong economic position, the valuer's financial profits, and the potential fear of losing a meaningful source of income.

In considering the various constituent dimensions of professional ethics, both those which directly shape the quality standards of professional practice and those

which express concern for the dignity and prestige of the valuation profession, we find that they are influenced by a number of factors. These are mainly job satisfaction, gender (in most cases males are less sensitive to ethical issues than females), market segments served (valuers dealing with property developers show less ethical attitudes) and country of origin of the valuer (in most cases Austrian valuers have a higher attitude to ethics than Polish ones). The influence of these predictors, however, is less explicit and only applies to some selected dimensions of ethics; hence, further research on this issue is recommended.

There exist cross-country differences in the approach to ethics between Austria and Poland. They can be interpreted in terms of cultural differences and in terms of disparities in the process of professionalisation of the valuer's business and the institutionalisation of the real estate service market. Austrian valuers, who operate within a less restrictive service market (no mandatory licences for certain types of valuation services) but with a longer tradition than the Polish, express a more ethical attitude towards individual areas of professional ethics. This can be summed up with the statement

that restrictive state regulations, although they give direction to the development of professional activity and to some extent serve a preventative function, do not replace the bottom-up processes of professionalisation that accompany the development of the market and its institutions.

## Funding

This work was supported by the subsidy granted to Cracow University of Economics.

## Author contributions

Conceptualization, A. M., M. T., M. U., J. P. and A. N.; methodology, A. M., M. T., M. U., J. P. and G. M.; software, M. T.; validation, M. T., A. M., and G. M.; formal analysis, M. T.; investigation, A. M., M. T., M. U. and J. P.; resources, A. M., M. T., M. U., J. P. and A. N.; writing—original draft preparation, A. M., M. T., M. U. and J. P.; writing—review and editing, A. M., M. T., M. U. and G. M.; supervision, A. M. and G. M. project administration, A. M.; funding acquisition, A. M., M. T., M. U. and J. P.

## Disclosure statement

Authors have no conflicts of interest to disclose.

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## Appendix

Table A1. Designed case studies to analyse the level of ethical attitude among valuers

Symbol	Description of a case study	Corresponding principle from the PFVA Code of Ethics	Possible answers	Analysis of responses in the context of the level of ethics
E1	A property valuer employed in a consulting company receives a proposal from a company's current client to perform a valuation outside the place of employment as part of individual business activities. He accepts this order because a formal exclusivity agreement does not bind him, and the client does not intend to use the services of a consulting company anyway due to the lack of consensus on financial conditions	Application of the principles of impartiality and respect for the law	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E2	During the property inspection, the client clearly suggests the result of the valuation, indicating that his plot's market value should be similar to the price his neighbour obtained by selling a plot with very similar parameters to the property being valued. Analysing the market data, the valuer finds a contract for the sale of the neighbouring property in which the price turned out to be twice as low as declared by his client. Guided by reliability and honesty towards its client, the valuer informs the client about the actual price of the neighbouring property and the detailed conditions of the sale contract	Reliability in dealing with the client, including the respect of professional secrecy	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level

Continued of Table A1

Symbol	Description of a case study	Corresponding principle from the PFVA Code of Ethics	Possible answers	Analysis of responses in the context of the level of ethics
E3	An experienced valuer only includes the results of his analyses and calculations in the estimation operation without any explanation. He considers that overly detailed analyses and descriptions of the procedure do not affect the final result of the valuation anyway and may provide arguments used to question the valuation's correctness	To carry out their professional activities in a transparent, understandable, and legible manner to the best of their ability and knowledge	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E4	The property valuer evaluates the residential unit in order to determine the sale price at the bailiff's execution. For various reasons, the valuer has no access to the interior of the property being valued. Therefore, the technical condition of the property is accepted on the basis of the debtor's declaration, and the site inspection carried out in order to assess the external condition of the building and the immediate surroundings	Responsibility for the tasks entrusted and exercising them with due diligence	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E5	A beginning property valuer, who is struggling to get his first orders, decides to enter a tender for the communal forest valuation. He is aware of his lack of experience in this type of valuation but counts on his professional colleague, who has been on the market for many years, to provide him with informal help and advice	Perform only those activities within the scope of the practice for which you have appropriate knowledge and professional competence	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E6	The real estate agent offers the property valuer extensive cooperation consisting of drawing up a simplified valuation of the property in the form of an opinion to establish an initial offer price by the agent	Responsibility for the content and form of the studies you are the author of and for third parties' performance of professional activities	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E7	As part of the cooperation with a long-standing client, the valuer was offered an unusual and challenging valuation. Initially, he did not want to take on this order, as he had no experience in this area. He finally agreed after the client offered him an insight into the previously performed valuation	Performing estimates objectively and in a manner free from customer dependence	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E8	The property valuer, cooperating with regular business clients, offers a promotion where every tenth valuation is prepared free of charge	Caring for the dignity of the profession	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level
E9	An experienced valuer observing price dumping on the local property valuation services market decides to submit an appeal to the Professional Ethics Committee against his colleagues	Responding to the negative phenomena of failure to comply with the code of professional ethics by another valuer	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the higher the level of ethics. In this case, the values would be scaled up to be compatible with the rest of the case study, i.e., answers of 5 have been assigned a value of 1, and so on



End of Table A1

Symbol	Description of a case study	Corresponding principle from the PFVA Code of Ethics	Possible answers	Analysis of responses in the context of the level of ethics
E10	Due to the coronavirus epidemic, the valuer's regular clients suffered considerable losses. The property valuer had no new orders for several months. He decided to reduce the price for valuations on average by 15% to 30% for key clients to stay in business. Although the reduced price does not allow him to cover his operating costs and make a fair profit, he is afraid of losing clients due to strong competition and price dumping practices	Respecting your work by offering remuneration worthy of the work you do	Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	The higher the response value, the lower the ethical level

Table A2. Detailed description of the variables adopted for econometric modelling

Variable	Description	Mean	Std. Dev.
Dependent variables			
Ethics index (EI)	Sum of responses to case studies E1 to E10 from Table A1. The higher the value, the lower the level of ethics of a given respondent	26.52	5.98
E1	Detailed description in Table A1	2.42	1.20
E2	Detailed description in Table A1	3.26	1.66
E3	Detailed description in Table A1	2.14	1.26
E4	Detailed description in Table A1	2.54	1.36
E5	Detailed description in Table A1	2.78	1.23
E6	Detailed description in Table A1	2.65	1.36
E7	Detailed description in Table A1	2.58	1.13
E8	Detailed description in Table A1	2.30	1.23
E9	Detailed description in Table A1	3.27	1.26
E10	Detailed description in Table A1	2.58	1.16
Independent variables			
Job satisfaction index (JSI)	Sum of responses to the three statements described in subsection 2.3. The higher the value, the higher the level of satisfaction of a given respondent	12.39	2.26
Perceived pressure indicator (PPI)	Respondent's response to the question: In my work, it is difficult to remain free and independent of the pressure exerted by clients. Possible answers: Strongly disagree (1); Disagree (2); Neither agree nor disagree (3); Agree (4); Strongly agree (5)	2.53	1.24
Gender	The gender of the respondent. The variable takes the value 1 if a man, 0 if a woman	0.71	0.45
Work experience (WE)	Years of practice as a property valuer of a given respondent	17.93	8.89
Work activity (WA)	Average number of valuations made monthly by a given respondent	7.53	7.68
Education background (E)			
Technical	Dummy variable taking the value 1 for technical education, 0 otherwise	0.50	0.50
Economic	Dummy variable taking the value 1 for economic education, 0 otherwise	0.39	0.49
Legal	Dummy variable taking the value 1 for legal education, 0 otherwise	0.06	0.24
Technical and economic	Dummy variable taking the value 1 for technical and economic education, 0 otherwise	0.03	0.17
Technical and legal	Dummy variable taking the value 1 for technical and legal education, 0 otherwise (baseline category)	0.02	0.13
Dominant type of clients in the valuer's order structure (T)			
Individuals	Dummy variable taking the value of 1 in the case of individual customers, 0 otherwise	0.24	0.43
Developers	Dummy variable taking the value of 1 in the case of developers, 0 otherwise	0.03	0.17
Banks	Dummy variable taking the value of 1 in the case of banks, 0 otherwise	0.06	0.24
Courts	Dummy variable taking the value of 1 in the case of courts, 0 otherwise	0.18	0.39

End of Table A2

Variable	Description	Mean	Std. Dev.
Private enterprises (excluding developers)	Dummy variable taking the value of 1 in the case of private enterprises (excluding developers), 0 otherwise	0.14	0.34
Public bodies (excluding courts)	Dummy variable taking the value of 1 in the case of public bodies (excluding courts), 0 otherwise	0.11	0.31
No client type	Dummy variable taking the value of 1 if there is no client type that dominates in the order structure, 0 otherwise (baseline category)	0.24	0.43
Dominant type of property in the valuer's order structure (P)			
Housing	Dummy variable taking the value of 1 in the case of residential real estate, 0 otherwise	0.44	0.50
Commercial	Dummy variable taking the value of 1 in the case of commercial real estate, 0 otherwise	0.19	0.40
Forest or agricultural	Dummy variable taking the value of 1 in the case of forest or agricultural real estate, 0 otherwise	0.06	0.24
No property type	Dummy variable taking the value of 1 if there is no property type that dominates in the order structure, 0 otherwise (baseline category)	0.31	0.46
Respondent location			
Country	Country of the respondent. The variable takes the value 1 if Austria, 0 if Poland	0.44	0.50