



Doing it right—Which factors drive ethical procurement?

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ABSTRACT

Recent developments have introduced significant challenges to ensuring supply continuity for purchasing professionals. However, limited research exists on how these individuals perceive the ethical dimensions of these emerging challenges. This study conducts a review of the procurement and supply chain literature to identify key factors influencing ethical behaviour comprehensively. To refine and prioritize these factors, a multi-stage Delphi analysis was conducted with a panel of 30 procurement experts. The findings offer a structured overview of the factors based on their perceived importance and the level of expert consensus. The results suggest that while business ethics have been studied within procurement and supply chain contexts, evolving conditions present new ethical considerations that merit further investigation. The set of 21 identified factors, of which 11 are based on the literature and 10 were identified during the study, provides a more holistic perspective on the determinants shaping ethical behaviour within procurement practices. Challenges in supply management that demand swift responses indicate that informal components of ethical culture are particularly influential: notably, the personal values of individuals play a significant role; however, greater attention should be paid to leadership influence, the strategic importance attributed to procurement, and differences of procurement situations. From a theoretical perspective, the results underscore the need to expand existing ethical frameworks to better address the complexities of supply chains. The practical implication is that, in the case of supply chain disruptions, efforts should be made to strengthen informal control instruments related to corporate transparency.

1. Introduction

The clear manifestations of climate change, together with growing societal concerns, underscore the need for corporate practices to place strong emphasis on sustainability. This shift has profound implications for procurement activities and the management of supplier relationships. The development of supplier relations cannot be achieved without adherence to fundamental ethical principles [1,2]. Ethical leadership plays a pivotal role in the integration of green supply chains [3,4], while ethics more broadly serves as a cornerstone in promoting social responsibility within supply chains [5,6]. As a result, these themes are becoming increasingly intertwined [7,8]. Concurrently, recent economic developments—such as the restrictions implemented during the global pandemic, the increasingly frequent application of trade sanctions, and the rapid advancement of technology and digitalization—have fundamentally complicated supply provision and increased its associated risks. The management of supply-related disruptions has introduced new challenges, including ethically complex situations that necessitate immediate and well-considered responses within the field of procurement [9]. A growing body of recent research

addresses issues of supply chain sustainability [10] and highlights collaborative relationships as a key driver of effective supply chain management [11–13]. Such an approach inherently calls for greater emphasis on ethical behaviour; however, scholarly work that explicitly examines procurement ethics in light of emerging challenges remains comparatively scarce.

While the procurement and supply chain management literature has devoted considerable attention to ethical issues over recent decades, and has often acknowledged the factors shaping ethical behaviour, systematic and comprehensive investigations of these factors remain uncommon. (e.g., [14–16]). Although these studies attempt to categorize the drivers of ethical conduct in procurement, they were conducted in an earlier stage of procurement maturity—under markedly different economic conditions and industry trends compared to those of the 2020s. Specifically, these works emerged during a period characterized by a strong and generally predictable supply, in stark contrast to the recent years marked by severe supply disruptions. Such a shift has likely confronted procurement and supply chain professionals with different problems—and, consequently, different ethical challenges. Recent analyses of supply chain disruptions and related issues primarily focus on

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strategies for managing these problems [17,18], while ethical considerations in this respect receive comparatively little attention. The literature on procurement research predominantly focuses on regulatory instruments [19,20]. However, in the context of rapidly changing supply conditions, it is questionable whether regulation alone provides the most effective response, or whether other elements of organizational culture play a more decisive role in shaping solutions.

Consequently, it is vital to gain a deeper understanding of the factors that influence the ethical conduct of procurement professionals. Yet, the existing body of research is fragmented, with only a few attempts to systematize these factors. Notably, prior studies have tended to examine the effects of specific factors on ethical behaviour, while giving less attention to the comprehensive identification of the factors that shape ethicality in procurement.

This study employs ethical culture theory as its analytical lens. Ethical culture theory provides a robust framework for examining the factors influencing the ethical behavior of procurement professionals, as it emphasizes the role of shared values, norms, and organizational practices in shaping individual decision-making [21,22]. By integrating formal structures—such as codes of conduct and compliance systems—with informal elements, including leadership behavior and peer expectations, the theory enables a comprehensive understanding of how ethical standards are embedded within organizations. Consequently, it is particularly well suited to capturing the complex, multi-level influences that affect ethical conduct in procurement contexts.

The aim of the present paper is to offer a comprehensive overview of existing research on the ethicality of procurement professionals, grounded in the theory of ethical culture. Building on the insights derived from a literature review, a Delphi methodology is employed to organise, expand and validate the identified factors with the help of procurement practitioners. The main contribution of this study lies in the development of a comprehensive framework of factors influencing ethical behaviour in procurement, including the identification of several elements that have received limited attention in previous research.

The paper is organised as follows: first, the factors considered to influence procurement ethicality in the literature on procurement and supply chains are collected. Then, the study's methodology is presented, followed by the Delphi analysis results. A discussion of the results follows, with a summary of the study.

2. Literature review

In this chapter, drawing on the theory of ethical culture, the potential influencing factors will be reviewed, that have been investigated as possible determinants in management and procurement research, with the aim of providing a comprehensive overview of these factors.

2.1. Ethical culture and its manifestation in procurement research examining ethics

Ethical culture is a dimension of organizational culture that predicts both organizational and individual ethicality [21]. According to Treviño et al. [22], ethical culture comprises a set of formal and informal control systems (e.g., rules, reward systems, and norms) specifically aimed at influencing behaviour. Thus, ethical culture refers to the experiences, assumptions, and ideas regarding how unethical behaviour can be prevented and ethical behaviour can be promoted within an organization [23]. Ethical culture develops gradually over time and is rooted in the organization's history [24].

Research in this field starts from the premise that the moral values of individuals and leaders form the foundation of ethicality [25]. Ethical culture influences individual behaviour even in the absence of formal control systems [26]. In their analysis, Treviño and colleagues [27] found that incentives and formal guidelines have the strongest influence on employee behaviour and, therefore, represent effective tools for

decision-makers in managing trade-offs between economic and non-economic criteria. Their studies also found that the ethical environment and the degree of obedience to leaders are the most indicative of ethical risk [27].

The ethical context of organizations consists of two main components. The first is the formal component, also referred to as "hard controls," which includes explicit plans, policies, and procedures within the organization [28]. The second component is informal, also known as "soft controls." This includes implicit, intangible elements such as prevailing values, expectations, and assumptions within the organization.

Roy et al. [29] provide a comprehensive overview of recent management research findings on ethical culture, including tools and potential outcomes. In recent years, researchers have found a strong connection between ethical culture and organizational investments in CSR (Corporate Social Responsibility), investor evaluations of CSR practices, and the selection of suppliers based on social and environmental criteria [30,31].

Procurement-focused research also builds on the theory of ethical culture. For example, Goebels et al. [2] found that different dimensions of an organization's ethical culture significantly influence how procurement leaders consider social and environmental criteria when selecting suppliers. Studying procurement professionals in Singapore Razzaque and Hwe [15] highlight that ethicality is culture-specific—certain situations are judged differently based on the norms of a particular country or society. Therefore, the development of an ethical culture can help organizations handle ethically ambiguous situations in a way that aligns with corporate expectations. In contrast, Etse et al. [32], examining the nature of sustainable procurement in the African context, did not find a connection between ethical culture and procurement outcomes. In that setting, legal regulation had the greatest positive impact.

The factors affecting the ethicality have been the subject of much procurement research. There are a number of well-established tools that can be employed to ensure ethical behaviour, including codes of ethics, internal process standards and training. However, these approaches frequently merely represent solutions to ethical issues and ethical dilemmas that have already been identified. Additionally, whistleblowing systems are typically reactive in nature, responding only to problems that have already occurred.

The procurement literature offers several research models that detail possible influencing factors. Carter and Jennings [5] identified the personal values of purchasers, individual-oriented culture, top management, legislation, customer expectations and organisational size. Razzaque and Hwee [15] identified three groups of factors that influence the perceptions of purchasing dilemmas. The first consists of differences between individuals (moral differences, personality traits, and non-moral differences, e.g. demographic/religious). The second consists of factors that influence interpersonal differences, and the third are factors at the organisational level (e.g., organisational culture, organisational control, and organisational structure). Ho and Lin [16] examined demographic variables (age, gender, education, religiosity, management level, purchasing practices, international experience) and individual variables (firm size, industry, type of product purchased) in their model. Aspects that appear in research aimed at analysing the impact of the statistical characteristics of respondents or describing the sample can be grouped in accordance with the characteristics of individuals or the organisation, which may be complemented by the effect of culture [29,33–35]. These aspects (although the studies themselves do not usually link them) can be easily reconciled with the theory of ethical culture, which will be presented here.

2.2. The impact of individual characteristics

Within the theoretical framework of organizational culture, the role of norms and the individual's value systems is regarded as a central factor. Numerous studies explore and emphasize various dimensions of

individual characteristics. In particular, several ethical investigations have examined factors related to the individual — specifically, the purchaser — highlighting their influence on ethical decision-making processes. The characteristics of the individual most commonly examined in research are gender, experience, position, training attendance and priority. Personality traits are also often mentioned in the literature [e.g. 36,37], but these are not reported in a large proportion of studies.

2.2.1. Gender

Gender differences are discussed extensively in the economic literature, including in relation to ethics, in a number of research papers and contexts. The meta-analysis by Friesdorf et al. [38] suggested that gender differences in the perception of moral dilemmas become more pronounced in relation to, e.g. performance orientation – this is due to the importance awarded to moral norms and the cognitive evaluation of the results of a utilitarian approach to moral dilemmas. The study of Simga-Mugan et al. [39] and Chen et al. [40] identified variability, that can be attributed to organisational differences in culture and values. As Grosser et al. [41] conclude in a bibliographic analysis spanning 25 years, the topic is salient in business ethics research and linking it to feminist theories is suggested.

The idea is also present in the procurement literature. Leenders and Fearon [42], in their study on the history of procurement, refer to the fact that women were not accepted as members of the American procurement association for a long time. Research published in the procurement literature over the last 20–25 years has regularly examined whether there is a difference in attitudes to ethics between the two sexes. The results vary widely, with studies by Razzaque and Hwee [15], Husser et al. [33] and Ho et al. [16] identifying no difference. Differences between the personality traits of female and male purchasers have been identified in other studies [34,36,43], which can be interpreted in an ethical context.

The results are therefore highly fragmented in both the business ethics literature and procurement research, with observed differences frequently being attributed to other contextual or organizational characteristics.

2.2.2. Experience

Experience is central to well-known models of business ethics [44]. Similarly, many treat as a starting point the fact that ethical decision-making is often rooted in intuitive or automatic processes rather than rational analysis and concur that experience is the basis of the moral intuition underlying ethical decisions e.g. [45]. The results of business-focused research that examined the relationship between experience and ethicality are diverse. Some identify a positive relationship e.g. [46], while others find no or insignificant relationship e.g., [38,47].

According to Dane and Sonenshein [48], it is experience and its nature that really matters. The latter define this as the extent to which ethical values are known and applied in a given work context (e.g., organisation or profession) and distinguish between convergent ethical expertise (which puts into practice the ethical values of one's organisation through convergent cognitive operations) and divergent ethical expertise (which helps people resolve moral dilemmas through flexible thinking). Dane and Sonenshein [49] argue that this may mean that experience is related to ethicality depending on factors such as the values of the organisation and social feedback.

Individual and organizational culture are not static. As Roy and his colleagues' research [29] shows, moral development also has a place in research on ethical culture. This development has been disputed by many; for example, Browning and Zabriskie [50] showed in their survey that young purchasing managers were more concerned with ethical matters than older managers. Following the management literature, research on the procurement profession has also often incorporated experience into studies on ethics. The results – in which experience is typically measured in terms of years in the profession or age – vary

widely. Thus, Landeros and Plank [51], Razzaque and Hwee [15], and Husser et al. [33] do not identify a relationship. However, Hawkins et al. [44] found a strong relationship in their survey: the opportunistic behaviour of managers more strongly and negatively affected the opportunistic behaviour of younger buyers than older buyers. In addition, subjective expected utility had a significant positive effect on the opportunistic behaviour of older purchasers compared to their younger counterparts. Husser et al. [52] identified a relationship between ethical problem type and experience. They found no difference in dilemmas related to personal experience, personal values, and respect for the environment. However, when confronted with conflicts of interest and the possibility of coercion and control, they identified that experience plays an important role, enabling purchasers to overcome professional pressures and/or the temptation to turn the situation to their personal benefit and instead choose the ethical option. On the other hand, according to the latter authors [52], if a decision does not have a clear or identifiable short-term outcome, even though the situation may harm the physical integrity of a business partner or the environment, buyers will not make an ethical choice, regardless of their level of experience.

The results of Ho and Lin's [16] research among Chinese purchasers show that those with more experience tend to be at a higher (post-conventional) level than those with little experience (who are typically associated with the conventional level). That is, the Chinese results indicate moral development with increasing experience.

2.2.3. Position

The position that is held (manager or purchaser) is less often examined in the literature. However, holding a managerial position implies having greater insight into the organisation and the priorities of the organisation's leaders. Trevino et al. [53] find that senior managers tend to have a more positive view of organisational ethics than lower-level employees, mainly because of their leadership role and their identification with the organisation, as well as the need to protect the organisation's image and their own identity. In contrast, lower-level employees are more likely to be cynical about the ethics of their organisation.

Similar findings are echoed in the procurement literature. The results of Ho and Lin's [16] research, show that managers tend to be at a higher (post-conventional) level than purchasing agents (who tend to be more likely to be identified with the conventional level) in line with what was found related to experience. Deshpande's [34] results reveal that ethical problems are related to task uncertainty and result from efforts to respond to this can be developed through training. Research [54] also shows that the perceptions of purchasing managers may differ from those of buyers.

2.2.4. Training

The role of training is widely discussed in business and management literature. Important questions are the extent to which training can influence moral judgement and how much training influences ethical action [55–57].

The impact of training is also examined in a number of procurement papers. For example, a study by Cooper et al. [58] highlights the importance of corporate training as this not only helps professionals to recognise ethical dilemmas but also to respond appropriately, in line with company policy. This is consistent with Deshpande's finding [34], that ethical dilemmas are associated with task uncertainty, and that training is intended to address this challenge. (this is why procurement managers receive more training than their subordinates, as they encounter many more unregulated tasks). This conforms to what the current author identified when comparing the training of purchasing managers and purchasers. Training may also be a link between personal ethical values and better task performance. Cooper and Marder's [59] findings suggest that better communication and training with decentralised procurement staff, particularly those with strong ethical values about ethical procurement in their personal lives, is key to promoting

more socially responsible procurement in organisations.

2.3. Organisational aspects

Organizational norms and formal control mechanisms play a fundamental role in shaping ethical behaviour according to the theory of ethical culture. The influence of the organizational context is well-documented in the literature, with particular emphasis on factors such as regulatory frameworks, company size, and organizational characteristics.

2.3.1. Organisational control systems

Companies rely on variety of control systems to promote ethics. The research on this topic is mostly related to the theory of ethical culture. As Trevino et al. [22] defines ethical culture as a set of formal and informal control systems designed to influence behaviour. The leader plays an important role in ethical culture [60,61] if there isn't an observed ethical leadership at the top, the organisation is unlikely to be ethical [25]. Of the formal control instruments, codes of conduct are the most widely used in the literature. According to Sommers [62], the presence of corporate codes of ethics is associated with less perceived wrongdoing in organisations but not with an increased propensity to report observed unethical behaviour. The same research found that organisations that adopted formal codes of ethics exhibited value orientations that went beyond financial performance to include responsibility to the commonweal. The codes can be viewed as a governance tool to enhance transparency [19], which also contribute to ethical behaviour. In contrast to corporate codes of ethics, professional codes of ethical conduct had no influence on perceived wrongdoing in organisations, nor did these codes affect the propensity to report observed unethical activities. However, the results of subsequent studies on supply management are divisive [63,64]. Early studies highlight the role of double standards emerging [65], but procurement regulation has now become a common part of corporate codes, providing guidance about basic dilemmas. The impact of codes in public procurement has also been studied [66,67]. Examining the impact of ethical culture elements on supplier evaluation, Goebel et al. [2] identify a relationship between top management ethics and the existence of codes of conduct but find none for incentives. Etse et al. [32] also highlighted the mediating role of ethical leadership in procurement.

2.3.2. The impact of company size

The impact of firm size on corporate ethics has been a longstanding topic [68] which is often connected with corporate social responsibility (CSR). Some find that small firms are inherently socially responsible [69,70] and that this creates both financial and non-financial benefits for them [71]. Others argue that smaller firm size creates barriers for small firms, limiting their ability or potential to act responsibly [72].

There is a large body of supply chain literature on the specificities of SME practices [73–76]. While providing a very heterogeneous picture, the results identify differences according to, e.g., firm size and the ethical values/attitudes of the owner/manager. Procurement evolves as the company grows. This situation reflects the approach of early American research on purchasing ethics, which is related to the principal-agent problem [42].

Procurement ethics research also addresses differences in firm size. Deshpande et al. [34] found no relationship. Similar results were found identified by Ho and Lin [16], who also found no significant difference between respondents' levels of moral evaluation, although a preliminary hypothesis based on the literature suggests that buyers in small organisations are in a more difficult position since they often need to work alone to find solutions.

2.3.3. Organisational priorities

The impact of organisational priorities is less studied in the literature. The positive impact of ethical culture has been widely

acknowledged in the literature (e.g. Riivari et al. [77]). At the same time, within the framework of ethical culture theory, a relationship can be assumed between a company's business priorities and the ethical conduct of its employees. Managers establish organizational priorities that define strategic direction. In business contexts, these priorities often emphasize the pursuit of profit, which may, in some cases, undermine ethical behaviour [78,79]. Employees' awareness of working for a purpose-driven company has been shown to influence their workplace sustainability behaviours. When a company's purpose is articulated as a broad, relevant, and shared ethical vision—one that defines why the organization exists and where it is headed—it can serve as a particularly effective driver of more ethically complex sustainability behaviours among employees [80].

These concepts have also found resonance in the field of procurement research. For example, Anaza et al. [81] analysed purchasing agents' job satisfaction, showing the relationship between ethical climate, pay, promotion, and supervision. Ethical concerns can be raised if purchasers don't discriminate sufficiently between short-term transactional value transfer and long-term shareholder value capture, which still might happen. Blome and Paulraj [82], Schleper et al. [83] sets these concerns in supplier management context.

2.4. Aspects of the economic and societal context

Aspects of the wider environment include primarily national specificities, as summarised in Roy et al. [29]. National specificities [84,85] is cited in several studies, including [41,86–88] and broader economic history [41] are often a starting point for theory-building in the ethics literature.

The literature distinguishes procurement practices based on cultural variations. Yang et al. [89], from a comparison of Western European and Asian practices, found that national differences matter in implementing purchasing activities, and the intensity and efficacy of purchasing activities and strategic involvement vary. Perner et al. [90] identified differences in the procurement of professional services in relation to cultural differences. These potentially significant differences in purchasing ethics are highlighted in a study by Cooper et al. [91], who compared US, Canadian and British procurement professionals. Husser et al. [92] also identified differences in four of Hofstede's [84] dimensions of ethics between French and Chinese purchasers.

2.5. Other aspects

There are several other aspects in the literature that are not emphasised in research on ethics. These are procurement-specific, so they are less well addressed in the wider management literature, and perhaps for this reason, they are also little explored in procurement research.

2.5.1. Differences between public procurement and the procurement of profit-oriented companies

Public procurement and corporate procurement perform similar functions. Research in both areas has addressed the issue of ethics, although the research in the two areas is very divergent. Most of the procurement references in this article are linked to the corporate arena. In terms of ethics in procurement, a number of issues were collected in the early literature [93–95], which allow for a nuanced examination of the topic. Research on public procurement focuses less on ethics and more on corruption, with studies addressing African countries in particular (e.g. [96,97]). However, there is little research comparing the two areas. The results of Hawkins et al. [98] show a difference in that buyers in the for-profit sector are more likely to behave opportunistically, while in the public sector, this is true of buyers' leaders. In addition, key differences in procurement strategy have been unveiled, suggesting that not-for-profit procurement practices have room for improvement.

2.5.2. Buyer-supplier relationship

The procurement literature strongly focuses on supplier relationships [99,100]. The abuse of bargaining power is frequently cited as a root cause of ethical concerns [1]. Nevertheless, Saini's [101] study examines unethical procurement practices in terms of buyer-supplier relationships. Taking into account the presence or absence of explicit or implicit corporate policies that sanction ethically questionable actions, Saini conceptualises unethical sourcing practices as elements of a three-tiered group. These are a) inter-organisational power issues (inter-organisational power and specific investments), b) inter-organisational relationship issues (long-term orientation and satisfaction), and c) inter-personal relationship issues (inter-personal relationships and trust).

2.6. Summary of the literature review

As demonstrated in this chapter, drivers of ethical behaviour have been broadly identified and investigated within the business and procurement literatures. Yet the evidence is often disputed, and—owing to the limited number of studies or their differing periods/circumstances of observation—it remains challenging to form a clear picture of the most consequential factors. Nevertheless, these findings provide a sound foundation for further inquiry aimed at developing a more comprehensive account of the influencing factors.

3. Methodology

The research described herein utilised the Delphi method to explore the factors affecting ethics in purchasing. The latter method was characterised by Linstone and Turoff [102] as “a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem.” A Delphi study is actually a group of methods, the core of which is the “structured communication” that is generated: This involves feedback associated with individual contributions of information and knowledge, some assessments of group judgments or views, and the opportunity for individuals to revise their views; and a degree of anonymity for the individual responses.

The professionals included in the Delphi panel were selected on the basis of their professional experience (at least 10 years of procurement experience) and their commitment to ethical issues. We strove to ensure that the industry background was as broad as possible and to include experts with international experience. Forty experts were selected from the members of professional associations, of whom thirty agreed to participate. Their expertise were validated by the association database. These participants are referred to as the Delphi panel. Non-responses were primarily due to lack of time; one individual cited a conflict with company policy. Most of them work in large companies, many of them with international responsibility, and four currently works as consultants. Four of the panel members are also involved in public procurement. There were eight women and twenty-two men. We have insured anonymity for the experts.

The steps of applying the method are described in Fig. 1.

4. The process of data collection and the results

The analysis was grounded in factors identified within the relevant literature, from which an initial list of eleven items was developed. With the exception of the state of the economy, all criteria were derived directly from the literature review. This additional factor was incorporated in recognition of the limited attention given in existing studies to the ways in which shifting market conditions—particularly in the context of recent polycrises—may influence ethical behaviour. The initial set of factors can be seen in Table 1. as the 1–11 factors. Three experts participated in pilot interviews to validate the selection of factors and to assess the clarity of the subsequent task.

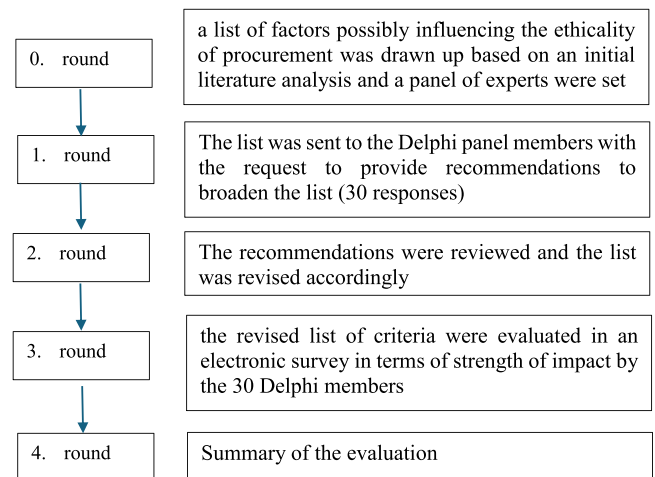


Fig. 1. The Delphi Analysis Process.

Table 1
Factors affecting ethicality.

Factors	Description of factors affecting ethicality in procurement activities
Gender	Gender of purchaser
Experience	Experience a professional has
Position	Working/not working as leader
Training	Participation in ethics training or general procurement training
Company size	Working for a small or large company
Organisational priorities	Organisational priorities (e.g. profit motivation, employee orientation)
Organisational regulation	Existence of code of ethics/mechanisms to promote compliance/ whether process controls can be enforced
Nature of procurement	Company or public procurement
Broader economic and social environment	The general norms and expectations associated with the wider environment (given society), what ethical norms they adhere to, and how they relate to the issue of human relations and social responsibility
State of economy	Boom or downturn and corresponding change in the business environment.
Nature of relationship	In buyer-supplier relationships, the balance of power between companies and the nature of the relationship between companies and personal relationships
Personal values	Upbringing, childhood patterns, and resulting personality of the purchaser
Personal characteristics of purchaser	Purchaser's personal characteristics, such as age, mental health, religious beliefs/whether they have children
Ownership	Local or international
Type of procurement	Type of procurement: direct, indirect, value, relationship with supplier, novelty of procurement task
Supplier characteristics	Nature of supplier (e.g. trader, manufacturer), culture of supplier, characteristics of supplier's industry
Recognition of the procurement function	Position in hierarchy, recognition, and whether procurement has a say in the development of ethical and other rules that affect them
Corporate culture	Overall ethical and organisational culture of company, employee satisfaction
Legal environment	Content, enforceability, power to sanction
Attitude of the leader	Credibility of leader, leading by example
Industry	Specificity of industry

In the next round of the analysis, the initial list was distributed to the panel of experts with a request to supplement it with any additional factors that, in their view, may influence the ethical behaviour of procurement professionals beyond those already listed. Participants were

asked to propose further criteria along with brief descriptions. The majority of responses (76.6% of the 30 participants) included such suggestions. The thirty panel members provided their suggestions either in a brief online discussion or in writing, according to their preference.

In the next phase, a smaller subset of the panel reviewed the submitted suggestions in the context of an in-person discussion. Six experts from the Board of the Club of Purchasers and Procurement Managers provided feedback on the expanded list. The proposed additions were systematically reviewed and discussed.

Some items were excluded from the final list because they were suggested only once and were not deemed significant by the experts present. These included factors such as the purchaser's salary, type of educational background (e.g., business or engineering degree), and level of education (most purchasers have a degree). Based on the panel's assessment, these factors were unlikely to be key drivers of ethical behaviour—particularly given that most procurement professionals typically hold a higher education degree. There was general agreement among the panel members on omitting these criteria. In addition, some descriptions were refined and clarified for consistency and clarity.

There was also consensus reached on the inclusion of gender as a relevant factor. Although some panel members had initially considered it of limited importance, during the second round of discussion, they accepted the argument that (1) gender is a well-documented variable in the literature on professional ethics, and (2) it can be a sensitive aspect of business communication. For these reasons, the panel agreed that it warranted inclusion in future research.

Additional comments were also made by the panel members. Several experts noted—both in the first and second rounds—that the list focused exclusively on factors influencing the purchaser. However, certain stages of the procurement process are often carried out by individuals

outside the procurement function (e.g., defining the need, receiving the goods or services, approving payment). These steps also carry ethical risks, but they fall outside the scope of the current analysis, which focuses on the purchaser's role.

The final list of criteria is presented in Table 1. The factors added as a result of the panel's deliberations are highlighted in grey. The final list includes 21 items. For each item, at least two-thirds of the panel members agreed that the factor may have a meaningful influence on the ethical conduct of procurement professionals.

Table 1. Final List of Factors Potentially Influencing Ethical Behaviour in Procurement.

In the questionnaire, panel members were asked to evaluate the potential influence of each factor on the ethical behaviour of procurement professionals using a 7-point Likert scale (where 1 indicated "no influence" and 7 indicated a "strong influence"). The evaluation was conducted in the third round, involving the full panel of 30 experts. Each factor was rated anonymously, and the results are presented in Fig. 2. The average of the responses and standard deviation are shown in parentheses after each factor.

Based on the responses, the mean score and the standard deviation were calculated for each factor. These statistical indicators served as the basis for grouping the factors according to their perceived importance and the degree of consensus among the respondents. Factors were classified as having a strong effect when their mean value exceeded 5.3, and as having a moderate effect when the mean ranged between 4.0 and 4.9. Below this threshold, the magnitude of the effect was considered low influence. With respect to variability, factors with a standard deviation between 1.3 and 1.6 were defined as divisive, while those with a standard deviation greater than 1.7 were classified as highly divisive. The smaller panel reached consensus on categorising the factors based

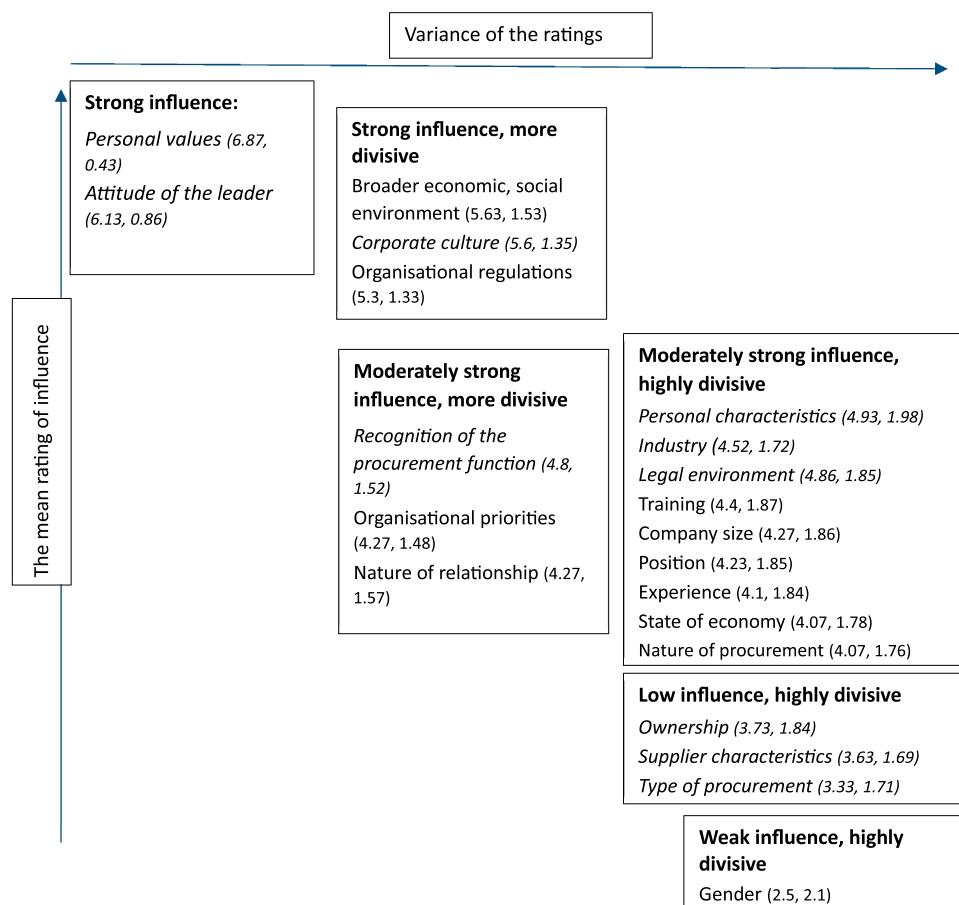


Fig. 2. Results of evaluation.

on these statistical parameters in two rounds. (The panel considered merging the gender factor with the low-impact category. They also discussed whether the nature of relationship should be classified as moderately or highly divisive.) The final results were approved by the entire panel.

In Fig. 2., factors that were identified in the first round of the Delphi process are marked in *italics*. The graphical presentation shows the distribution of factors across different levels of perceived importance and agreement among respondents.

Fig. 2. Groups of factors according to their importance and degree of consensus

The **least influential factor** was considered to be gender. Although the mean is lower than for any other aspect, the variance in the responses is considerable. The majority of respondents indicated that it had no influence. However, four respondents ranked it as an important factor with a score of 6 or 7, this is why it was categorised as highly divisive.

In the case of **low-influence highly divisive factors**, the averages of indicated importance were low, with a wide variance in responses. Three factors were included that are not typically found in the literature but were suggested by several experts. In general, most respondents attribute some impact to these factors, but few attribute a stronger impact.

The average for the **moderately influential factors** is above the midpoint of the scale. Here, the factors could be divided into two groups. For one group, the standard deviation was under 1.57. For the other group, the standard deviations were above 1.72.

Items in this moderately strong, divisive group included several factors derived from a mixture of literature-based and expert-suggested themes. The less divisive group of factors, on the other hand, covers ones that are also important based on the literature, with one exception. The recognition of procurement (i.e., where procurement is located in the organisational hierarchy and how much say this function has in setting the rules that affect its work) is an aspect not examined in the procurement literature.

Factors with a strong impact were associated with an average score of above 5.3 for the strength of impact. Again, the variance suggests that the responses may be divided into two groups. The impact of the purchaser's personal values was rated the highest by the experts (6.87). The strongest factor with an even smaller standard deviation was purchasers' own values. The attitude of the leaders (senior managers) was also considered to be influential. The wider social/economic environment is also perceived to have a significant influence. The variance in the perception of organisational factors is slightly higher.

5. Discussion of results

This study identified and examined the factors influencing the ethical behavior of procurement professionals, with particular emphasis on their perceived importance. In the discussion of the results, three main themes are highlighted. First, differences between informal and formal elements are addressed, which are also closely linked to theories of ethical culture. Second, individual-level factors are examined, many of which have been extensively discussed in the existing literature. Finally, the internal interrelationships among the identified factors are analysed.

5.1. Informal and formal control

The present study adopted the theory of ethical culture as its conceptual foundation. The factors identified align with the framework of ethical culture, emphasising both its formal and informal instruments [103]. The Delphi assessment revealed that the most influential factor in characterising ethics was personal values, described by respondents as the values acquired during upbringing and carried from the home environment. This was unanimous. While consistent with findings reported in the literature, this factor is difficult to capture in the form of

testable items suitable for inclusion in a questionnaire. Other individual characteristics were not considered significant by the panel, although opinions varied substantially. The attitudes and values of leaders were likewise regarded as highly important, with a strong level of consensus. Taken together, the panel's responses predominantly emphasised the informal elements of ethical culture. In the perception of these factors, one comment summarises the views of many: 'I think that ethics basically [refers to] personal value[s]. These values are unshakable if one is truly ethical. Codes of ethics in companies may, in essence, include local specifics, which obviously you don't know unless you work there. They have to be respected. But the attitude of the manager can be a determining factor because then the manager can filter out and not tolerate unethical colleagues around him or her.'

Among the formal elements, organisational regulation was evaluated as less influential and more contested, relative to individual value systems and attitudes of the leaders. The effect of external regulation (e.g., legal frameworks, public procurement rules) was considered moderately strong, yet respondents were highly divided in their evaluations.

5.2. Evaluation of factors

It was the aim of the research to develop a comprehensive understanding of the factors influencing the ethical behaviour of procurement professionals. This entailed, on the one hand, collecting factors previously examined in the literature, and on the other, identifying new aspects. Based on prior research, 11 initial factors were identified, with 10 additional elements incorporated into the study. These did not represent entirely novel dimensions—for instance, personal characteristics of the buyer have been examined in the literature. Age, for example, is not new in the sense that it is frequently used as a proxy for experience; however, little research has specifically investigated generational differences in attitudes towards ethical behaviour.

Most newly incorporated factors varied in both perceived importance and level of consensus. Individual values—both those of the buyer and of the leader—were considered important, with high levels of agreement. Slightly lower importance and consensus were associated with the recognition of procurement within the organisation, a perspective which, to the best of our knowledge, has not been previously investigated. Several of the new factors were highly divisive (e.g., legal environment, type of procurement, characteristics of suppliers), indicating that these issues may highlight underlying problems. Examining these through case studies could yield valuable insights, contributing to a broader contextual understanding.

Most of the factors derived from the literature were assessed as moderately important. The analysis measured both the perceived importance of each factor and the level of consensus surrounding it. In several respects, the results diverged from the emphases typically found in prior studies. The clearest examples of these differences are outlined below.

The role of gender has long been debated in the literature, with contradictory findings. The majority of Delphi panel participants rejected the idea that gender has a significant influence on ethical behaviour, although some assigned importance to it. Overall, the results are consistent with claims that differences in personality traits between men and women (e.g., [36,41]) may influence the perception of moral situations. The association of moral intensity with female personality traits may therefore be justified, consistent with the findings of Grosser et al. [42]. Nonetheless, the panel strongly rejected gender as a determining factor, a stance that may reflect the broader European and international business culture and in line with many procurement studies [15,16,33].

The evidence concerning experience was similarly complex. Overall, the panel members did not consider experience to be an important factor. At the same time, the responses showed considerable variation, indicating divergent opinions among the participants. Respondents emphasised that experience cannot be adequately measured in terms of

years alone, but rather by the nature and complexity of the problems and situations encountered. This is consistent with the divisions identified in the ethics literature [38,46,47] and extends the findings of Dane and Sonnenshein [48], who examined business ethics, by demonstrating similar results in the context of procurement. The hierarchical position of the buyer was not perceived as having a significant impact, despite being considered a divisive factor. This finding contradicts procurement research, which often highlights the abuse of power asymmetries as a key source of ethical dilemmas [1,42].

At the individual level, participation in training was perceived to have a moderate effect. According to the literature, training can be a tool for promoting ethical culture and ethics (e.g. [14]). This outcome of the present analysis may be attributable to the fact that the panel consisted of highly experienced professionals, who typically confront challenges associated with complex and demanding problem-solving contexts. This explanation is consistent with previous findings in the literature (see [34]).

5.3. Interrelationship among factors

To investigate the interrelationships among the identified factors computational analyses were performed. The Kendall's Tau correlation coefficients demonstrated, in several instances, a strong concordance among the importance values assigned by the experts. The importance of organisational regulations showed a strong correlation with the evaluation of training ($\tau = 0.607$, $p < 0.001$), indicating the interconnection of two elements of formal organisational culture. Company size exhibited a significant correlation with the nature of supplier relationships ($\tau = 0.693$, $p < 0.001$), which is understandable, as larger companies possess greater resources for the systematic management of supplier relations. Company size was also significantly correlated with the perceived importance of position ($\tau = 0.635$, $p < 0.001$). Furthermore, supplier characteristics demonstrated a strong correlation with the recognition of procurement ($\tau = 0.551$, $p < 0.001$), both of which reflect dimensions related to professional maturity. Finally, the perceived impact of purchasers' personal characteristics was significantly correlated with organisational priorities ($\tau = 0.509$, $p < 0.001$).

Among the observed interrelationships, it is particularly noteworthy that two professional dimensions display a strong mutual association, as well as significant correlations with several additional variables ($p < 0.003$). Specifically, the perceived recognition of the procurement function is significantly associated with the assessment of firm size and ownership structure, whereas the evaluation of supplier characteristics shows a significant relationship with perceptions of organizational culture and ownership type.

Seven factors exhibited only weak associations with others ($p < 0.05$): gender, experience, industry, personal values, nature of procurement, type of procurement and the legal environment. Due to the small sample size, Kendall's Tau coefficient was employed to assess these relationships. While the results highlight a number of connections that seem theoretically consistent, they also underscore the importance of displaying the 21 factors as distinct entities.

6. Conclusion

In recent years, supply chains have been exposed to significant challenges, the scale of which is unlikely to diminish in the coming years. Amidst such supply-related difficulties, action is also required to achieve sustainability and climate objectives. This can only be accomplished if business relationships are built on long-term interests, which necessitates the ethical treatment of business partners. In procurement and supplier relationship management, this represents a key priority. Building on this premise, the present study set out to develop a comprehensive understanding of the factors influencing ethical behaviour in procurement and to identify elements that have received limited attention in prior research.

Drawing on the literature and Delphi analysis, a comprehensive model of the factors influencing buyers' ethical behaviour was developed. The figure summarising the results illustrates the extent to which experts considered each factor important, as well as the degree of consensus achieved. The findings indicate that the personal values of both buyers and managers play a decisive role. This underscores the importance of examining how individuals' core values are shaped and how they may be captured in research and during recruitment. The role of the manager also emerged as significant, as they can fundamentally shape organizational culture and the formal and informal rules that govern the internal environment.

The analytical framework of the study was grounded in the theory of ethical culture. The results suggest that, in times of turbulent change, informal control mechanisms exert a stronger influence on ethical behaviour than formal ones. The personal value systems of individuals and their leaders proved to be the most significant factors, whereas formal rules may, in certain cases, constrain innovative solutions.

The significance of the study lies in its demonstration that practitioners attach great importance to a number of profession-specific aspects (e.g., the recognition of procurement) that are rarely addressed in the literature. These, therefore, represent potentials for future research. The examination of the importance of the identified factors, as perceived by the experts, indicates the existence of strong interrelationships among the factors. At the same time, the representation of all 21 factors provides a more comprehensive and nuanced understanding of the overall structure.

The practical implications indicate that although organizational regulations and culture are of critical importance, it is advisable to strike a balance between informal and formal mechanisms in order to ensure ethical practices. Training may contribute to improving the situation; however, this instrument alone does not necessarily prepare procurement professionals for the unexpected situations and unstructured problems that have frequently arisen in recent years and are likely to continue to emerge in the future.

One limitation of the study is the homogeneity of the panel, as all participants were Hungarian nationals. Nevertheless, all had international experience, and the majority operated within multinational organizational contexts. To strengthen the validity of the model and to more rigorously examine the potential impact of national cultural dimensions, it would be methodologically beneficial to extend the study to a more diverse, cross-national sample. Furthermore, longitudinal and experimental research designs may offer further insights and yield interesting findings to promote the development of actionable recommendations to practice.

Statements and declarations

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CRediT authorship contribution statement

Gyöngyi Vörösmarty: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The author certifies that she has no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials

discussed in this manuscript.

Data availability

Data will be made available on request.

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