

Diversity of Ethical Decision-Making Frames and Departmental Differences. A Structural Topic Model Analysis of Open-Ended Responses

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Abstract

Ethical decision-making research has accumulated extensive findings on the factors that shape judgments and choices, but less attention has been paid to how people frame and justify their responses to the same ethical dilemma in their own words. This study analyzes open-ended responses from Japanese university students to a vignette involving corporate misconduct in order to examine the diversity of ethical decision-making frames. Using a Structural Topic Model (STM), we extracted latent topics from the responses and estimated differences in topic prevalence by department and role. The analysis identified 13 topics, revealing notable differences between business and engineering students in the frames they emphasized, whereas no clear differences were found between the accountant and director conditions. These findings extend ethical decision-making research by showing that group differences may appear not only in choices themselves but also in the interpretive frames and justifications underlying those choices.

Keywords

ethical decision-making; structural topic model; open-ended responses; vignette method; departmental differences

1. Introduction

When wrongdoing occurs within an organization, what do individuals define as “the problem”, and how do they justify the course of action they choose? Research on ethical decision-making has accumulated evidence by

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quantifying attitudes and behavioral intentions using closed-ended items and psychometric scales (Craft, 2013). However, even when individuals face the same situation, the considerations they regard as salient are diverse, and reducing such considerations to a predetermined set of items has clear limitations (Treviño, 1986).

This study analyzes open-ended responses to an ethical dilemma using a Structural Topic Model (STM), which enables estimation of latent thematic structure in text, to extract “decision frames” as topics (Roberts et al., 2014; Roberts et al., 2019). We further examine whether the prevalence of the extracted topics differs by (1) academic department (business vs. engineering) and (2) assumed role in the scenario (accounting staff vs. board member). In this paper, we treat departmental differences as the primary comparison dimension.

In addition, preventing corporate misconduct is closely related not only to formal controls such as internal regulations and auditing systems but also to ethics training and compliance education. Yet, even in an identical misconduct-discovery scenario, individuals and groups do not uniformly prioritize the same considerations when making decisions. Accordingly, a framework like ours—which extracts decision frames from open-ended responses and summarizes them as group-level differences—can provide a basis for applying the same vignette survey within organizations in the future to identify department and occupation-specific tendencies and to design training that is tailored to the considerations that are most likely to be underemphasized.

2. Literature Review and Analytical Perspective

2.1. Theoretical Development of Ethical Decision-Making Research

In the ethical decision-making literature, individuals’ ethical judgments have been understood not as outcomes determined solely by personal traits, but as products of interactions between individuals and their situational and organizational contexts. Treviño (1986) proposed a framework that conceptualizes ethical decision-making as an interaction between individual and situational factors, and highlighted the limitations of explaining ethical judgment exclusively in terms of personal moral characteristics. Within this framework, ethical judgment is assumed to emerge through the interplay of individual factors—such as personal values and stages of moral development—and situational factors, including organizational culture, norms, and authority structures.

Jones (1991) further showed that ethical decision-making is also shaped by the nature of the issue itself, namely its “moral intensity.” He argued that elements such as the degree of social consensus, the magnitude

of consequences, and the scope of impact inherent in an ethical issue influence actors' ethical awareness and decision processes. This argument suggests that even when individuals face the same situation, their judgments may differ depending on how they construe that situation as an ethical issue.

Taken together, these studies have advanced a view of ethical decision-making not as a fixed normative judgment, but as a process in which multiple elements—including individual factors, situational factors, and issue perception—interact with one another. Consequently, theory indicates that ethical judgments are not uniform and may vary substantially across individuals and situations.

2.2. Contributions and Limitations of Prior Research

To date, a substantial body of ethical decision-making research has focused on factors that explain ethical judgment and on decision outcomes (Craft, 2013). For example, many studies have examined differences by individual attributes and situational conditions using indicators such as whether a given action is judged ethically acceptable, whether misconduct is reported, or how highly the ethicality of an act is evaluated (Chiu, 2002, 2003; McMahan & Harvey, 2007; Barnett, 2004). This line of research has provided important insights by making ethical judgments quantitatively comparable and by identifying factors that influence ethical decision-making (Aguinis & Bradley, 2014). However, this approach relies on a framework that treats ethical judgment primarily as a final choice outcome. In other words, ethical decision-making is often measured in terms of “which action is selected,” while the interpretive processes through which judgments are constructed have not been sufficiently examined (Heyler et al., 2016). In practice, even when individuals confront the same ethical dilemma, they do not necessarily understand the situation in the same way. Some may frame it as a matter of legal compliance, whereas others may interpret it in terms of role responsibility, organizational consequences, or interpersonal relationships. Accordingly, understanding ethical decision-making requires examining not only choice outcomes but also how people interpret situations and construct their judgments. In response to this concern, some studies have sought to capture ethical decision-making as a conceptual structure. For instance, Reed et al. (2021) asked engineering students to create concept maps of ethical decision-making and analyzed those structures to clarify how students understand the concept. By visualizing the structure of students' understanding of ethical concepts, this study provides an important contribution to identifying how students organize ethics as a conceptual system. Nevertheless, that study focuses on the structure of ethical-concept understanding, and does not fully clarify which lines of argument people use to interpret situations and construct judgments when

confronted with concrete ethical dilemmas. Moreover, although concept-map analysis is effective for capturing the content of ethical understanding, it does not necessarily provide a framework for comparing how the argumentative structure of judgment differs across disciplinary backgrounds or assumed roles. Therefore, to understand the diversity of ethical decision-making, it is necessary to analyze not only ethical-concept understanding but also the very structure of judgment arguments in specific ethical situations.

2.3. Rationale and Methodological Perspective for Decision-Frame Analysis

As discussed in the previous section, understanding ethical decision-making requires examining not only decision outcomes but also how people interpret ethical situations and construct judgments through specific lines of argument. To capture such decision frames, it is necessary to identify respondents' prioritized perspectives and justifications without reducing them to predefined response categories. From this perspective, the vignette method—which presents a hypothetical scenario under common conditions and asks respondents to report their decision and reasons—is an effective approach. By presenting an identical situation to all respondents, vignette studies standardize response conditions while eliciting justifications for ethical judgments and problem recognition in a form that is comparable across individuals (Aguinis & Bradley, 2014). Particularly in ethics research, presenting dilemmas that approximate real decision contexts enables researchers to examine the perspectives through which respondents understand situations and form judgments. However, the focus of this study is not the vignette method itself, but the content of open-ended responses elicited by the vignette. Although open-ended responses allow participants to express prioritized points and reasons without constraint, their content is highly heterogeneous, and a single response often contains multiple coexisting points of argument. Consequently, manual reading of individual responses alone makes it difficult to systematically compare the overall argumentative structure of the corpus and how that structure varies across respondent attributes. To address this challenge, we employ the Structural Topic Model (STM) to extract latent argumentative structure embedded in open-ended responses. STM is a topic-modeling approach that estimates latent topic structure in a corpus and probabilistically represents the extent to which each document contains multiple topics. In addition, STM incorporates document-level covariates, making it possible to estimate which topics are relatively more prevalent in particular attribute groups. These features make STM a suitable analytical framework for this study's objective: extracting the argumentative structure of judgments from open-ended responses to an ethical dilemma and examining distributional

differences in that structure in relation to attributes such as disciplinary background and assumed role.

2.4. Research Questions

Based on the foregoing discussion, at least two challenges remain in ethical decision-making research. First, much of the existing literature tends to treat ethical judgment as a final choice outcome, and has not sufficiently clarified how people interpret the same ethical dilemma from different perspectives or how they construct judgments through particular lines of argument. Second, although some studies have addressed structural aspects of ethical decision-making, they have not necessarily provided a sufficient framework for systematically extracting the argumentative structure of judgments in concrete ethical situations and comparing its distribution across respondent attributes.

To address these gaps, this study analyzes open-ended responses to a vignette presenting the same ethical dilemma involving corporate misconduct, with the aim of identifying the decision frames respondents use to interpret the situation. Specifically, we seek to make visible an aspect that prior ethical decision-making research, with its emphasis on comparing choice outcomes, has struggled to capture: how judgments are formed through particular configurations of argumentative points. In particular, we use the Structural Topic Model to extract latent argumentative structure in open-ended responses and examine how its distribution differs by disciplinary background and assumed role.

Accordingly, this study addresses three research questions. Research Question 1: What decision frames do people use to interpret an ethical dilemma involving corporate misconduct? Research Question 2: How does the distribution of these decision frames differ by disciplinary background (business vs. engineering)? Research Question 3: Even under the same situation, how do differences in assumed role (accounting staff vs. board member) affect the distribution of decision frames? In short, rather than treating ethical judgment as a simple choice outcome, this study analyzes the composition and distributional differences of underlying decision frames in order to visualize variation in judgment-formation processes that has been difficult to capture in prior research.

Finally, this study makes three contributions. First, it offers a perspective for ethical decision-making research that emphasizes the diversity of decision frames rather than judgment outcomes alone. Second, by integrating vignette methodology with text analysis, it presents a methodological framework for extracting and comparing the argumentative structure of judgments from open-ended responses. Third, it demonstrates that even under the same misconduct-discovery scenario, what people

define as “the problem” is not uniform, and thereby provides insights that can inform future efforts to identify department and occupation-specific patterns of ethical perception and improve the design of ethics and compliance training.

3. Methods

3.1. Vignette Method

We collected data using an experimental vignette methodology, in which respondents were presented with an ethical dilemma and asked to report the action they would take as well as to provide an open-ended explanation for their choice (see Appendix 1 for details). The vignette method presents a standardized hypothetical scenario and is designed to elicit respondents’ salient considerations and justifications in a form that is comparable across individuals, making it well suited for describing the reasoning underlying ethical judgments (Aguinis & Bradley, 2014).

3.2. Structural Topic Model

In this study, we analyze open-ended responses to an ethical dilemma. While open-ended text allows respondents to articulate the considerations they prioritize without being constrained by predefined response options, such data are high-dimensional and heterogeneous, making it difficult to summarize the overall structure of reasoning in a systematic and replicable manner. Recent advances in text-as-data methods provide frameworks for extracting latent thematic structure from corpora and for incorporating such structure into empirical research with explicit assumptions and validation.

Accordingly, we employ the Structural Topic Model (STM), which extends foundational topic models such as Latent Dirichlet Allocation (LDA) by allowing document-level metadata to be incorporated into topic prevalence (Roberts et al., 2014). Beyond identifying topics (latent considerations) from open-ended responses, STM enables statistical estimation of how attributes such as academic department and assumed role affect the extent to which particular topics are emphasized (Roberts et al., 2014; Roberts et al., 2019). Our goal is therefore not only to characterize ethical decision-making in terms of behavioral choices but also to extract the underlying decision-frame structure expressed in text and to estimate differences in topic distributions across departments (business vs. engineering) and roles (accounting staff vs. board member). For these purposes, STM is methodologically appropriate because it unifies the extraction of latent frames from text with hypothesis testing about group differences within a single modeling framework.

3.3. Data and Study Design

The data were collected from three universities in Japan: a private university (Business School A) in Tokyo, a national university (Engineering

School B) in the Tohoku region, and a national university (Engineering School C) in the Chugoku region. Data collection took place between April and August 2025. The number of valid respondents was $n = 203$. For a common ethical-dilemma vignette (Appendix 1.1), respondents provided open-ended responses describing (i) what action they would take and (ii) the reason(s) for that action, under two role conditions: (1) accounting staff and (2) board member.

The unit of analysis is the document; each open-ended response is treated as one document (i.e., responses under the two role conditions are not concatenated). Accordingly, the theoretical number of documents is 2×203 , but after preprocessing steps (e.g., excluding empty or missing responses), the final number of documents used for STM estimation was $n = 400$. The distribution of key variables after preprocessing is shown in Figure 1. Because the sample sizes differed substantially across departments, we combined all non-business respondents into a single engineering category to improve the stability of the analysis.

Figure 1: Cross-tabulation of department and year in school

Academic Unit / Year Level	Year 1	Year 2	Year 3	Year 4	Master's Year 1	Total
Private University School of Commerce A	113	37	6	4	0	160
National University Faculty of Engineering B	52	20	2	0	0	74
National University Faculty of Engineering C	0	0	144	20	2	166
Total	165	57	152	24	2	400

(Source: internal material created by the authors. Metadata Covariates)

We included the following covariates in the STM prevalence component: religion (presence of a household Buddhist altar and/or Shinto shrine), year in school (Grade), academic department (Department), assumed role (accounting staff vs. board member), and a reporting-related judgment category (report).

The primary comparison in this paper is the departmental difference (business vs. engineering), which we operationalize as a binary indicator (Department2) for difference estimation. Because role (accounting staff vs. board member) may also affect decision frames due to differences in responsibility and decision authority even under the same scenario, we report role effects explicitly in the Results section. Religion, Grade, and report are treated as control variables or as providing supplementary insights; accordingly, our main conclusions focus on differences by department and role.

3.4. Text Preprocessing

First, we reshaped the response data into a long format so that the unit of analysis was consistent (one open-ended response per document). This step is necessary because STM estimates topic prevalence at the document

level, and a consistent document definition improves interpretability and comparability across observations.

Second, we tokenized the responses using morphological analysis. Because Japanese does not explicitly mark word boundaries, tokenization is required to convert the text into a bag-of-words representation that can be used as input for STM. We retained nouns, verbs, adjectives, and adjectival verbs, as these parts of speech typically carry the core semantic content of respondents' reasoning, whereas function words (e.g., particles and auxiliary verbs) are primarily grammatical and may reduce topic interpretability. We also removed empty or missing responses, because STM relies on within-document word occurrences and documents without substantive content can undermine estimation stability and validity.

Finally, we constructed the text field used for STM input and processed the corpus using `textProcessor` and `prepDocuments`. These procedures remove extremely rare or analytically uninformative terms and organize the vocabulary and document set, thereby improving estimation stability and the reproducibility of topic interpretation.

3.5. STM Estimation and Number of Topics

We prepared the vocabulary and document set using `textProcessor` and `prepDocuments` with `lower.thresh = 10`, and retained only documents with complete covariate information.

To select the number of topics K , we ran `searchK` over a range of $K = 3$ to 20 and compared model-fit diagnostics (e.g., held-out likelihood and residuals) together with interpretability-oriented metrics (semantic coherence and exclusivity) (Roberts et al., 2014; Roberts et al., 2019). Although increasing K can improve fit, it may also lead to overly fragmented or redundant topics, thereby reducing interpretability. Based on a holistic assessment of (1) the balance between semantic coherence and exclusivity, (2) the extent of excessive splitting among substantively similar topics, and (3) interpretability upon inspection of representative documents, we selected $K = 13$ as providing the most stable and interpretable solution. The `searchK` results used for this selection are reported in Appendix 1.2.

Departmental differences between business and engineering were estimated using `Department2` (business – engineering).

3.6. Estimating Covariate Effects

We estimated covariate effects on topic prevalence using `estimateEffect`. In this paper, we present (1) departmental differences (business – engineering) as the primary results and (2) role differences (accounting staff – board member) as supplementary results.

3.7. Topic Interpretation and Labeling (LLM-Assisted)

We interpreted each topic estimated by the STM based on both (i) the word distributions and

(ii) representative documents (open-ended responses with high topic proportions). Specifically, for each topic, we extracted (1) the top seven words under each of four word-scoring metrics and (2) six representative documents with high prevalence of the topic, and we checked whether these sources provided a coherent substantive interpretation. The four word-scoring metrics were as follows.

First, Highest Probability ranks words by their within-topic probability and indicates terms that appear frequently in the topic. While useful for identifying a topic's general theme, this metric can place common words near the top across multiple topics, which may reduce discriminability.

Second, FREX combines word frequency with exclusivity (i.e., the extent to which a word is specific to a given topic). FREX therefore tends to highlight words that are both reasonably frequent and relatively distinctive, and it is particularly helpful for differentiating topics and supporting naming and interpretation.

Third, Lift captures how much more likely a word is within a topic relative to its overall frequency in the corpus. Although high-lift words can provide strong topic-specific cues, they may also reflect extremely rare terms, proper nouns, or orthographic variation, which can introduce noise. We therefore used lift primarily as a supplementary diagnostic and based naming and substantive interpretation primarily on consistency with representative documents.

Fourth, Score is used to rank characteristic words by integrating multiple sources of information (e.g., within-topic strength and distinctiveness relative to the corpus and other topics). Compared with Highest Probability, which emphasizes frequent words, and Lift, which emphasizes topic specific words, Score often exhibits an intermediate property and can help avoid over-reliance on either ubiquitous terms or extremely rare terms.

To improve the coherence and readability of topic labels, we used a large language model (ChatGPT-5.2) as an assistive tool for generating candidate short Japanese topic titles, given the top words (7 words) and representative documents (six responses) for each topic. The final labels were determined by the researchers based on the following criteria: (a) consistency with both the top words and representative documents, (b) non-redundancy with other topics, and (c) avoidance of evaluative wording (e.g., moral judgments of right/wrong).

Notably, the LLM was not used for topic estimation or topic splitting. It was used only to assist with summarizing and proposing labels for topics already estimated by the STM; thus, the inferred topic structure and covariate effects are entirely based on the statistical STM framework.

4. Results

4.1. Topic Overview ($K = 13$)

Topic labels were interpreted based on the STM outputs, specifically the top words (7 words) and representative documents (six responses) for each topic. To improve readability, we used an LLM (ChatGPT-5.2) only to assist in generating candidate labels, after which the researchers finalized the labels according to the criteria described above. The $K = 13$ topics obtained from the STM were labeled as shown in Figure 2.

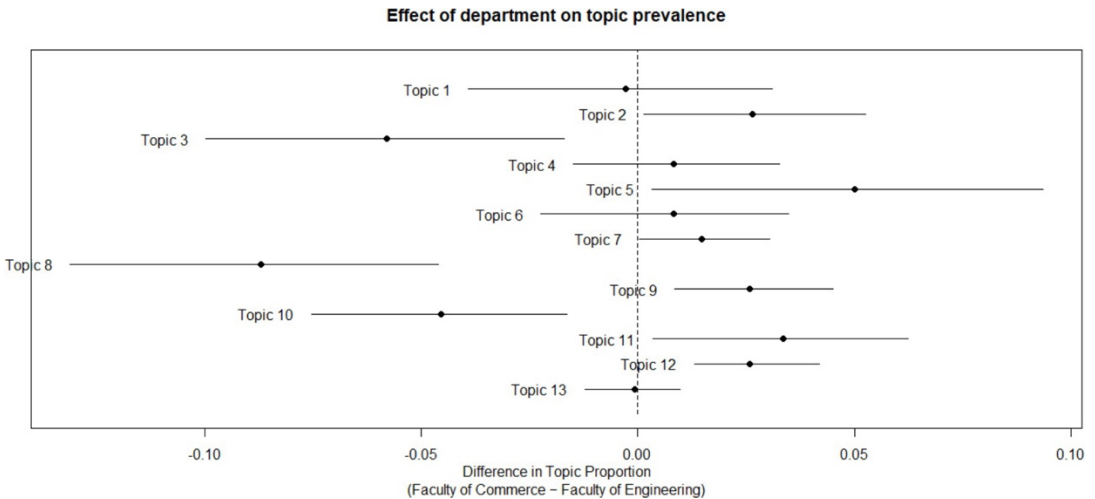
Figure 2: Topic labels

Topic 1	Risk Appraisal and Accountability Following Misconduct Detection
Topic2	Moral Principles vs. Interpersonal Loyalty: Role Conflict
Topic 3	Professional Ethics and Fiduciary Duty in Accounting Roles
Topic 4	Assessment of the Severity of Misappropriation
Topic 5	Concealment Prioritizing Corporate Reputation
Topic 6	Voluntary Disclosure Under the Assumption of Eventual Detection
Topic 7	Preserving Long-Term Relationships and Self-Protection
Topic 8	Directors' Accountability and Damage Control
Topic 9	Psychological Burden and Limits of Concealment
Topic 10	Disclosure to Preserve Trust
Topic 11	Complicity Risk and Conflict with Professional Ethics
Topic 12	Disclosure Strategy to Minimize Corporate Harm
Topic13	Minimizing Corporate Harm and Sustaining Long-Term Trust

(Source: internal material created by the authors)

4.2. Departmental Differences (Business vs. Engineering)

Figure 3 shows the estimated departmental differences using Department2 (business – engineering). For each topic, Figure 3 reports the estimated difference in topic prevalence between business and engineering students.

Figure 3: Estimated departmental differences in topic prevalence: business – engineering)

The horizontal axis indicates the difference in topic prevalence (business – engineering). Points denote point estimates and horizontal bars indicate 95% confidence intervals. Topics with positive estimates (to the right of zero) are relatively more prevalent among business students, whereas topics with negative estimates (to the left of zero) are relatively more prevalent among engineering students. Estimates farther from zero indicate larger departmental differences, while estimates close to zero indicate minimal differences. We interpret topics whose confidence intervals do not cross zero as those for which the estimated difference is likely to be non-zero; topics whose confidence intervals cross zero are treated as more uncertain and are discussed only as supplementary results. Note that these estimates represent differences in the proportion of each document attributed to a topic, not a binary difference in whether an individual “has” a topic.

Overall, we observed differences in which decision frames (topics) were relatively more salient across departments. Based on our topic labeling, business students more frequently emphasized Topic 2 (moral considerations and interpersonal conflict), Topic 5 (concealment decisions prioritizing corporate image), Topic 11 (complicity risk and ethical judgment), and Topic 12 (disclosure strategies aimed at minimizing organizational damage). These topics are broadly consistent with narratives that foreground interpersonal relationships, reputation, internal organizational dynamics, and the coordination of competing interests.

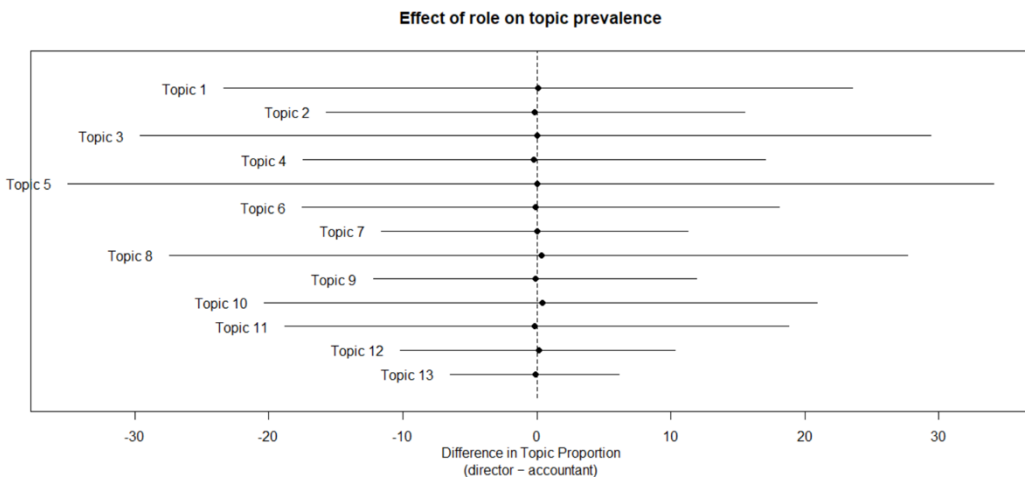
In contrast, engineering students more frequently emphasized Topic 3 (accounting responsibility and professional ethics), Topic 8 (directors’

responsibility and crisis response), and Topic 10 (disclosure decisions to maintain trust). These topics align more closely with narratives centered on role responsibility, accountability, crisis management, and procedural transparency.

4.3. Role Differences (Accounting staff vs. Board member)

We also estimated role differences (accounting staff vs. board member); however, the estimated differences in topic prevalence were small overall, and the confidence intervals crossed zero for all topics. Accordingly, we did not observe clear role differences in this sample (Figure 4). This analysis is exploratory and should be interpreted as indicating that role differences were not clearly detected under the present study design and sample, rather than as definitive evidence of no role effect.

Figure 4: Estimated role differences in topic prevalence: accounting staff – board member. Supplementary Results: Control Variables)



(Source: internal material created by the authors)

Although we also estimated covariate effects for religion, Grade, and report, these results are treated as supplementary. Religion is only a limited proxy for religiosity, and report may be endogenous to the content of respondents' judgments. In addition, the distribution of Grade is imbalanced in the present dataset. Accordingly, we restrict the main conclusions to departmental and role differences and treat the remaining covariate effects as auxiliary findings.

5. Discussion

5.1. Diversity of Ethical Decision-Making Frames

The STM results indicate that open-ended narratives about the same misconduct scenario can be decomposed into multiple decision frames. The 13 extracted topics capture diverse modes of justification and

considerations, such as the trade-off between early disclosure and concealment, moral concerns and interpersonal conflict, professional ethics, corporate image, complicity risk, crisis response, and psychological burden. These findings support the usefulness of conceptualizing ethical decision-making not merely as differences in approval or behavioral choice but as differences in which considerations are made salient and articulated in reasoning.

5.2. Interpreting Departmental Differences

As the primary results, we observed systematic differences in the considerations emphasized by business versus engineering students. Topics that were relatively more prevalent among business students tended to foreground interpersonal relationships, reputation, internal organizational dynamics, and the coordination of competing stakeholder interests.

In contrast, topics that were relatively more prevalent among engineering students were more closely connected to role responsibility, crisis response, and the maintenance of trust through procedural transparency and governance. This pattern suggests that frames related to institutional responsibility, safety, and the prevention of recurrence may be more readily mobilized as part of their ethical reasoning.

Overall, business students appeared more likely to focus on the “dynamics of governance” in coordinating complex relationships among stakeholders (e.g., shareholders, business partners, and colleagues), whereas engineering students appeared more likely to mobilize frames aligned with professional norms and the maintenance of system-wide reliability and safety, which are closer to engineering-ethics considerations.

Importantly, this study is an exploratory analysis based on observational data and does not provide a causal explanation for departmental differences. Multiple factors may contribute, including curricular content, perceived occupational roles, prior exposure to cases, between-university differences, and sample composition. Accordingly, the scope of this paper is limited to describing differences in the distribution of decision frames across groups.

5.3. Interpreting the Limited Role Differences

At least three factors may help explain why clear role differences (accounting staff vs. board member) were not observed. First, because the sample consisted primarily of students with limited practical experience, respondents may have found it difficult to concretely internalize the responsibilities and decision contexts associated with each role, leading to convergence in the considerations they expressed. Second, role differences may manifest less in the type of considerations (topics) and more in rhetorical features such as lexical choice, intensity of claims, and specificity, which may

not be well captured by differences in topic prevalence alone. Third, because each respondent provided responses under both roles, documents are not fully independent, which may have increased uncertainty in estimation. Future work should therefore examine role effects in more practice-relevant contexts (e.g., working adult samples) and/or employ designs and estimation strategies that more directly leverage within respondent comparisons.

6. Conclusion

Using open-ended responses to an ethical dilemma collected from Japanese university students ($n = 203$), this study applied an STM with $K = 13$ to demonstrate that ethical reasoning can be characterized as a mixture of multiple decision frames (topics). As the primary results, we quantified departmental differences (business vs. engineering) in the relative prevalence of these decision frames. This approach highlights the value of analyzing ethical decision-making not only in terms of behavioral choices (e.g., reporting vs. not reporting) but also in terms of the underlying structure of considerations articulated in respondents' narratives. In contrast, role differences (accounting staff vs. board member) were small overall, and clear differences in topic prevalence were not observed in this sample; thus, role framing may have had limited impact on topic distributions under the present study design. These findings indicate that variation in ethical decision-making emerges not only in choice outcomes but also in differences in decision frames through which respondents interpret the same situation, thereby helping to address limitations in prior research. The topics extracted in this study represent the considerations respondents prioritized when deciding how to act after discovering misconduct (e.g., role responsibility, interpersonal relationships, and organizational image). In future work, applying the same vignette-based text analysis within organizational settings could help identify department and occupation-specific distributions of decision frames and provide a basis for designing ethics training that is tailored to topics that may be underemphasized in particular groups. For example, if a unit's responses frequently foreground interpersonal relationships or organizational reputation, training could emphasize psychological barriers and protections related to reporting; if responses primarily emphasize duty and legal compliance, training could focus on concrete decision criteria and procedural guidance.

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Appendix

1. Ethical Dilemma Vignette

Please read the following scenario and answer the question at the end. Imagine that you are in the situation described below.

You have been working as the person in charge of accounting at your company for two years. The financial statements have just been completed, and you have recently finished reporting them to the board of directors. Despite the company's sustained efforts over many years of operating at a loss, the most recent fiscal year ended in a deficit. As the shareholders' meeting approaches, you discover an important issue.

You find evidence that a colleague has been misappropriating company funds. The scheme is carefully concealed, and it appears to have started before you assumed your current role. The amount misappropriated corresponds to 1% of sales—approximately the same amount as the reported deficit. You are the only person who has noticed this so far, and it seems possible that the misconduct could remain undiscovered if you stay silent.

However, you are responsible for the company's accounting. If you urgently report the issue to the board, it may still be possible to address it before the shareholders' meeting. At the same time, doing so could expose you to scrutiny regarding your own responsibility, and the colleagues involved may be dismissed.

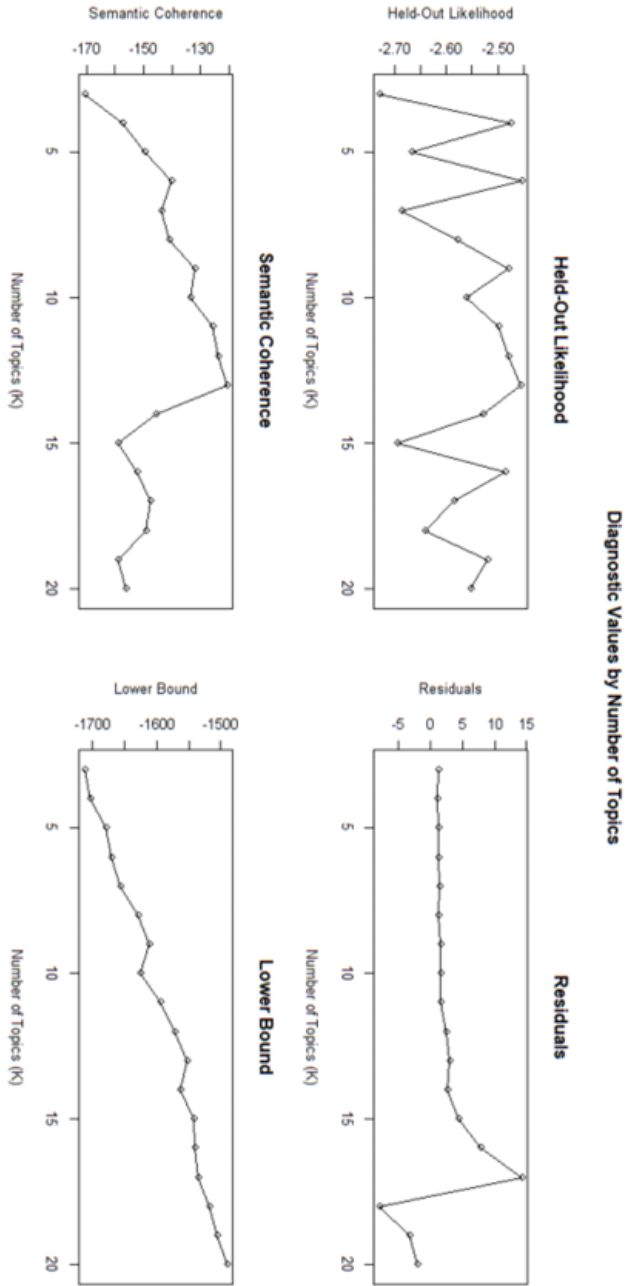
Your company provides socially necessary services, and about 20% of the residents of the city where the company operates are employed by the company or work with it through business relationships. To restructure the company, the prefectural government has purchased 51% of the company's shares, while the remaining 49% is held by private investors. In addition, the company has received property-tax exemptions from the city, which is itself facing fiscal deficits. The decision regarding this public investment and tax exemption has been controversial, creating substantial conflict within both the prefectural and city assemblies. As a result, there is a possibility that local newspapers and television stations will cover this case.

One of the colleagues who may have engaged in misappropriation is someone you have known since elementary school through high school. Although you attended different universities, you later rejoined the same company. This person lives near you, and your families are very close; your children attend the same school.

In this situation, what would you do? Please describe your decision and the reason(s) for it.

2. SearchK Results

Figure 5: searchK diagnostics: comparison across the number of topics K)



(Source: internal material created by the authors)