

## Article

# Do Board Characteristics Matter with Greenwashing? An Investigation in the Financial Sector with the Integration of Entropy Weight and TOPSIS Multicriteria Decision-Making Methods

Eleni Poiriazzi, Georgia Zournatzidou \*  and George Konteos 

Department of Business Administration, University of Western Macedonia, 51 100 Grevena, Greece; elenipoi@yahoo.gr (E.P.); gkonteos@uowm.gr (G.K.)

\* Correspondence: gzournatzidou@uowm.gr

**Abstract:** Financial industry executives are sincerely concerned about the potential effects of greenwashing on their organizations. The primary objective of this research is to investigate the impact of board features on greenwashing and the strategies that executives may develop to mitigate the effects of corporate washing phenomena. A novel set of criteria was evaluated for 359 listed European financial institutions. Data were acquired from the Refinitiv Eikon database for the Fiscal Year 2024. The entropy weight and TOPSIS multicriteria decision-making methodologies were used to assess the data. These assist us in determining the relative importance of each chosen criteria about the board's attributes and their impact on greenwashing. The study indicates that governance is the primary factor affecting greenwashing. Furthermore, findings indicate that the board of directors significantly influences the increased prevalence of greenwashing among financial firms. This suggests that the relationship between board size and greenwashing is debatable. The problem of greenwashing has primarily elevated the standards for evaluating board effectiveness and conflicts of interest, which are listed third on the list. The study results may inform the establishment of a new research agenda in the examined area.

**Keywords:** greenwashing; ESG; financial sector; governance; TOPSIS; board characteristics



Academic Editors: Paolo Giudici and Qiji Zhu

Received: 27 January 2025

Revised: 18 March 2025

Accepted: 24 March 2025

Published: 27 March 2025

**Citation:** Poiriazzi, Eleni, Georgia Zournatzidou, and George Konteos. 2025. Do Board Characteristics Matter with Greenwashing? An Investigation in the Financial Sector with the Integration of Entropy Weight and TOPSIS Multicriteria Decision-Making Methods. *Risks* 13: 64. <https://doi.org/10.3390/risks13040064>

**Copyright:** © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

In a time when sustainability is a commercial need and ethical obligation, boards of directors are essential in guaranteeing that firms maintain transparency and accountability in their sustainability initiatives. Greenwashing not only erodes confidence but also exposes firms to considerable legal, reputational, and financial hazards. By diligently supervising sustainability reporting, establishing explicit objectives, and fostering openness, boards may assist their firms in circumventing the hazards of greenwashing and preserving their reputation with stakeholders (Arouri et al. 2021; Koch and Denner 2025; Li 2024).

With the increasing need for ESG transparency, boards must have a proactive stance on sustainability governance, ensuring their firms comply with regulatory standards while authentically advancing a more sustainable future (Agosto et al. 2023). By curbing greenwashing and advocating for ethical sustainability practices, boards may contribute to the establishment of a more accountable and robust business environment—one that is both lucrative and congruent with the principles of environmental stewardship and social responsibility. Ultimately, boards serve as custodians of corporate integrity, and their

function in averting greenwashing is crucial for guaranteeing that sustainability assertions are believable, truthful, and indicative of genuine advancement. As global attention shifts towards sustainability, firms that adopt ethical governance and transparency will be more likely to prosper in the long run, while those that engage in greenwashing jeopardize the trust and confidence of their stakeholders (Aronczyk et al. 2024; Tong et al. 2024).

Numerous studies have emphasized the board's involvement in ESG disclosure (Aronczyk et al. 2024; Luu et al. 2025; Ma and Ahmad 2024a; Sun 2024; Wang et al. 2024a). Nonetheless, few studies have examined the impact of the board of directors on greenwashing, defined as the disparity between ESG disclosure and ESG performance (Budzanowska-Drzewiecka and Proszowska 2024; Koch and Denner 2025; Li 2024; Moodaley and Telukdarie 2023; Pizzetti et al. 2021). Zahid et al. investigated the relationship between board gender diversity and greenwashing, concluding that female representation on the board mitigated greenwashing practices. To our knowledge, no research has examined the moderating function of the board of directors and the committee (Saeed et al. 2024). This research investigates the influence of governance on the greenwashing scores of financial organizations in Europe. This study examines a new array of factors associated with the governance pillar of ESG, including board size, governance pillar score, external consultants, board conflicts of interest, board effectiveness review, board oversight of health and safety, board background and skills, and the CEO as a board member. We obtained data from Thomson Reuters' Refinitiv Eikon database for FY 2024, including 359 publicly listed financial institutions in Europe. We used a combination of entropy weight and TOPSIS multicriteria approaches to achieve the study purpose. The findings indicate that the governance pillar, board effectiveness, and board size are the characteristics most significantly influencing the greenwashing scores of European financial institutions. Thus, the results of this research contribute to the development of new alternative strategies that can help financial institutions to mitigate the challenges of greenwashing.

This paper is organized as follows: Section 2 presents the literature review around the topic of greenwashing, the causes of it, and the role of the board of directors. Also, Section 3 indicates the materials and methods used for the purpose of this research, while Section 4 emphasizes the results. Furthermore, Section 5 discusses the findings, and Section 6 concludes the paper and presents the proposals for future research.

## 2. Literature Review

### 2.1. Greenwashing: The Phenomenon in the European Financial Sector

The integration of environmental issues into the strategies and operations of companies is a positive trend that drives sustainability. Investors are requesting ESG disclosures, consumers are seeking eco-friendly products, and governments are enforcing more stringent environmental regulations (Agosto et al. 2023; Ahelegbey and Giudici 2024). This increased scrutiny has prompted numerous organizations to enhance their sustainability accomplishments to preserve their competitive edge. Greenwashing is a form of deception that can have a detrimental effect on the firm and its stakeholders. It is frequently characterized by exaggeration or fabrication. Companies may prioritize their sustainability initiatives while disregarding other environmental concerns. A company may promote its recyclable packaging, but it is prohibited from advertising its increased carbon emissions from its supply chain.

Selective reporting deceives stakeholders into believing that the corporation has a greater level of environmental responsibility than it does. Boards of directors present unique governance challenges that are a result of greenwashing. Directors are responsible for guaranteeing that organizations adhere to environmental regulations and maintain genuine sustainability commitments. Neglecting this obligation may have a detrimental impact

on finances and reputation, as authorities and consumers hold companies accountable for misleading claims. As protectors of corporate integrity, boards supervise sustainability reporting and guarantee that disclosures are founded on verifiable data and environmental advancements (Bosone et al. 2022, 2024).

The greenwashing performance scores of 359 private listed financial institutions was assessed in this study (Figure 1). The finance industry in southern Europe may be classified as a “greenwasher” within the market. The current sanctioning framework in this country, which is influenced by Italy, can be interpreted as greenwashing. This may be due to the absence of a specialized regulatory framework in the country that specifically addresses greenwashing in the financial sector. In Italy, there is a significant compliance deficit, which is defined by the absence of supervisory supervision for sustainability-related claims (Sun 2024; Tong et al. 2024; Yin and Yang 2024). The financial industry’s greenwashing is indirectly addressed in numerous financial legislations, as well as regulations that pertain to consumer protection and the prohibition of deceptive advertising. A unified and organized framework for the financial sector is not being put in place. Instead, many EU countries are regulating dishonest business practices under consumer law and general sectoral principles to stop greenwashing. Despite this, there is a lack of explicit guidance regarding the optimal approach to combating greenwashing (Koemtzopoulos et al. 2025; Sariannidis et al. 2016; Zournatzidou et al. 2024).

Italy and southern Europe are not the only places where greenwashing occurs. The financial sector of the United Kingdom is required to address the same dilemma. However, of late, the United Kingdom’s government has implemented more comprehensive anti-greenwashing regulations (Li and Chen 2024). All regulated entities that make any type of sustainability claim regarding their products or services in any consumer communication will be subject to this regulation. The “customer” encompasses both retail and commercial clients. To avoid greenwashing, financial products and service providers must make claims that are “consistent with the sustainability profile of the product or service, equitable, transparent, and not misleading”. The Financial Conduct Authority’s (FCA) Environmental, Social, and Governance sourcebook (ESG) incorporates the new regulation into ESG 4.3.1.

Furthermore, the Dutch financial sector is among the least greenwashed in Europe. Dutch financial enterprises are adamant that the market no longer allows “greenwashing.” This result has been attributable to the implementation of stringent regulations, particularly in the most recent fiscal year (Wang et al. 2024b; Yu et al. 2020; Zhao et al. 2024). In particular, the Dutch Authority for the Financial Markets (AFM) released a set of guidelines on October 4, FY2023, to encourage greater transparency regarding sustainability claims made by financial institutions and pension providers in the Netherlands. The guidelines are designed to assist market participants in maintaining the accuracy and clarity of their sustainability claims, as per the AFM. In addition, the rule concerning the Code for Sustainability Advertising (“CSA”) enforces all sustainability assertions within the financial sector, including environmental and ethical promises. All facets of the product and service life cycle in the industry, including refuse management, are regulated by the CSA. Dutch banks demonstrate a greater comprehension of the significance of financial institutions’ compliance with ESG guidelines, as well as a strategy to prevent reputational consequences that may result from allegations of greenwashing, even though transparency requirements for the financial sector are still in the process of emergence.

## Greenwashing Score FY2024

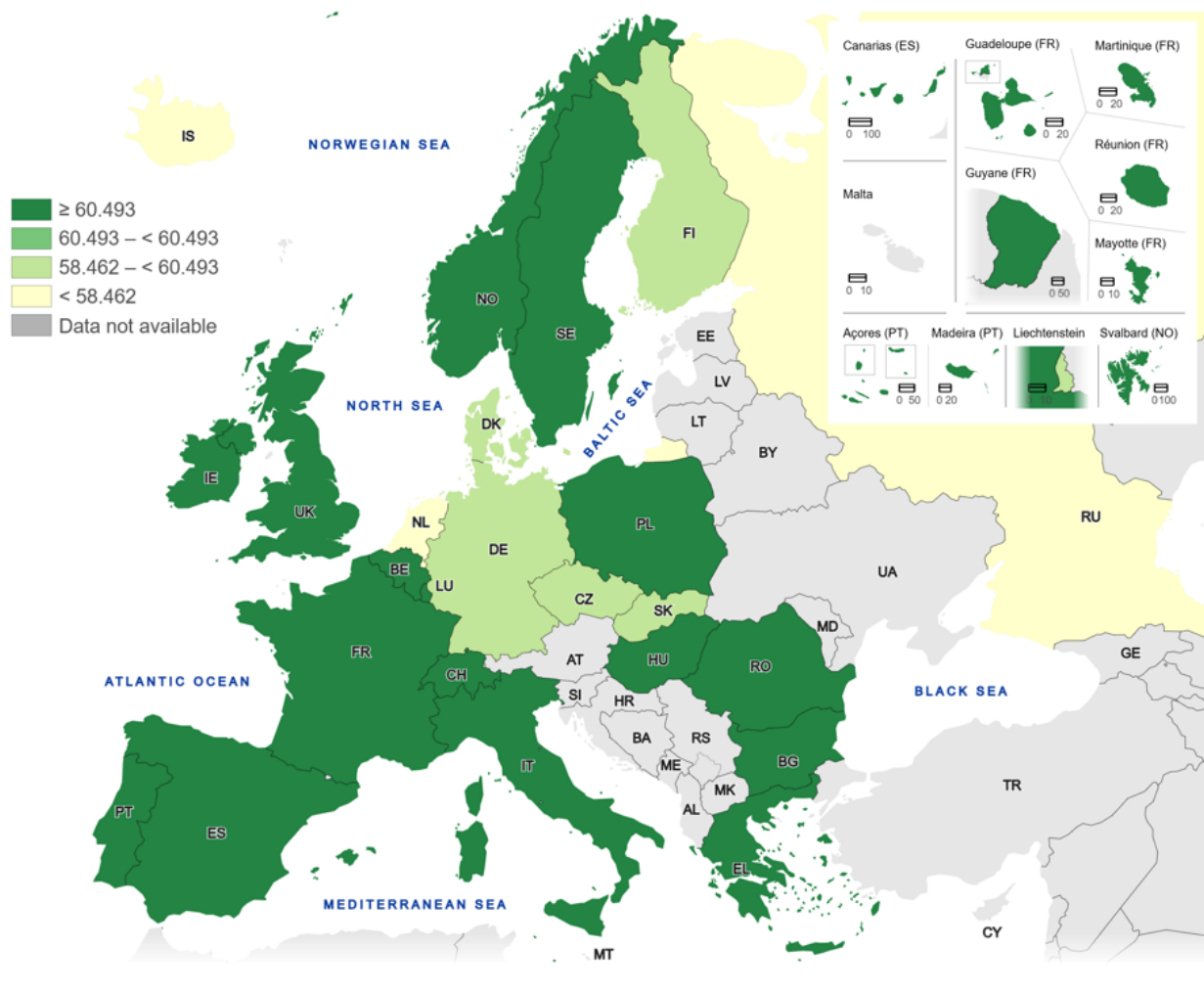


**Figure 1.** Greenwashing scores of the European financial institutions for the FY 2024. Source: Own elaboration.

### 2.2. Causes of Greenwashing: The Necessity of Prevention Strategies

Greenwashing has far-reaching consequences that extend beyond mere negative publicity. Companies that are identified as making false or deceptive sustainability claims may be subject to significant legal, reputational, and financial repercussions. The prevalence of greenwashing is being reduced as global regulatory authorities are increasingly enforcing new norms and regulations that mandate corporations to verify their sustainability claims. As a result, legal repercussions, including litigation, penalties, and sanctions from investors and consumers, may be imposed on organizations that engage in greenwashing. Greenwashing may lead to significant legal liabilities and reputational damage. In the contemporary digital era, information is disseminated at a rapid pace, and organizations that make fraudulent claims may face public censure on social media platforms (Pizzetti et al. 2021). This can lead to a decrease in consumer confidence and harm to their brand. This damage may be long-lasting, as consumers who were previously loyal may transfer to competitors who are perceived as more genuine in their environmental initiatives. In the aftermath of a greenwashing controversy, firms may encounter a protracted and difficult process of reestablishing trust, as reputational harm may compromise investor confidence, staff morale, and sales.

Greenwashing may result in a decline in shareholder value and investor interest. Investors are increasingly seeking companies that demonstrate a genuine dedication to sustainability as ESG criteria become more prevalent in investment decisions. Investor confidence may be compromised by greenwashing, which may result in exclusion from ESG-focused funds or divestiture. In addition, the financial performance of companies may be impacted by legal expenses or penalties associated with greenwashing concerns as ESG reporting becomes more regulated (Shahrour et al. 2024). Boards of directors must recognize that the risks of greenwashing are not limited to ordinary marketing errors. They are indicative of a fundamental collapse in corporate governance and ethical oversight, which has the potential to erode the company's long-term sustainability and stakeholder trust. To mitigate these risks, boards must ensure that the company's sustainability claims are based on genuine practices and that robust governance mechanisms are in place to verify and supervise these endeavors (Li 2024; Ma and Ahmad 2024a; Papagiannakis et al. 2024).

Consequently, boards of directors are crucial in the prevention of greenwashing by ensuring that the sustainability initiatives of their organizations are genuine and transparent. In their capacity as custodians of corporate governance, boards are accountable for the supervision of all facets of a company's operations, including its environmental performance and sustainability reporting. This involves the meticulous assessment of the validity of sustainability claims, the encouragement of transparency, and the accountability of management for the attainment of sustainable objectives. By ensuring that the organization implements sustainability strategies that are both transparent and quantifiable, boards may be instrumental in averting greenwashing. The company's sustainability objectives, the criteria used to evaluate success, and the procedures implemented to ensure accountability must be outlined in these policies. Boards are required to ensure that these policies are in accordance with industry standards and best practices, and that they are maintained to reflect the evolving nature of environmental concerns and opportunities (Jiang et al. 2024; Li et al. 2024b; Testa et al. 2018).

### 3. Materials and Methods

#### 3.1. Data

The objective of this research is to examine the influence of a unique set of governance factors on the greenwashing scores of 359 selected financial institutions in Europe (Table 1). This sample was selected because only these financial institutions reported their greenwashing performance score. We have employed entropy weight and TOPSIS methodologies to investigate this relationship. The data for the Fiscal Year 2024 were retrieved from the database of Refinitiv Eikon, which is powered by Thomson Reuters.

**Table 1.** Criteria considered in TOPSIS analysis.

| Criteria                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                            | Sources                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| C1. Board Size              | The total number of board members at the conclusion of the fiscal year.                                                                                                                                                                                                                                                                                                                                                                | (Ma and Ahmad 2024a)   |
| C2. Governance Pillar Score | The corporate governance pillar evaluates a company's procedures and processes that guarantee its board members and executives work in the best interests of long-term shareholders. It demonstrates a company's ability, via the implementation of optimal management practices, to govern and oversee its rights and obligations via the establishment of incentives and checks and balances to produce long-term shareholder value. | (Pizzetti et al. 2021) |

Table 1. Cont.

| Criteria                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sources                                                  |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| C3. External Consultants                 | Indicates the capacity of the board or its committees to engage external advisors or consultants independently of management's consent.                                                                                                                                                                                                                                                                                                                         | (Sun 2024)                                               |
| C4. Board Conflicts of Interest          | Conflicts of interest among board members constitute a substantial ethical issue, arising when personal interests collide with the need to prioritize the organization's best interests. Evaluate if the board manages conflicts of interest or has a policy to resolve such conflicts at the board level.                                                                                                                                                      | (Chen and Dagestani 2023)                                |
| C5. Board Effectiveness Review           | A board effectiveness review is a process that involves assessing and analyzing the effectiveness and efficiency of a company's board of directors in fulfilling its responsibilities and achieving corporate objectives. The objective of the evaluation is to confirm the effectiveness of the entire board. The evaluation should exclusively focus on the board's efficacy. The corporation is required to establish a precise timeline for this procedure. | (Ma and Ahmad 2024a)                                     |
| C6. Board Oversight of Health and Safety | Board supervision of health and safety indicates if the company's board actively monitors or evaluates the obligations associated with health and safety (H&S) hazards, beyond just endorsing an H&S policy. Evaluate if there is unequivocal evidence of board or board committee supervision over the management of health and safety concerns.                                                                                                               | (Luu et al. 2025)                                        |
| C7. Board Background and Skills          | Details the professional expertise, talents, or age of each board member.                                                                                                                                                                                                                                                                                                                                                                                       | (Luu et al. 2025; Ma and Ahmad 2024a; Wang et al. 2024a) |
| C8. CEO Board Member                     | Includes the CEO as a board member.                                                                                                                                                                                                                                                                                                                                                                                                                             | (Budzanowska-Drzewiecka and Proszowska 2024)             |

### 3.2. Entropy Weight Method

The TOPSIS method is a structured methodology used for decision-making using several criteria inside a specified framework. The TOPSIS model is a hybrid approach that combines the entropy technique with the TOPSIS method. The primary function of this system is to ascertain the weight of each evaluation indication using the entropy weight method. It then utilizes a strategy to approach the ideal answer for determining the ranking of evaluation items. The fundamental objective of the entropy weight TOPSIS method is to identify the ideal solution, whereby all attribute values attain their optimum (or suboptimal) levels within the alternative framework. An evaluation object is considered optimum if it is nearest to the best solution and furthest from the worst solution, based on the relative distances between each evaluation object and these solutions. If it does not meet these characteristics, it is deemed suboptimal. The TOPSIS method effectively utilizes information from the original dataset without restrictions on sample size. It offers the benefits of little information loss and adaptable functionality (Bilgili et al. 2022; Li et al. 2023; Tziritidou-Chatzopoulou et al. 2024).

Prior to presenting the approaches, we make the initial assumption that there are  $n$  alternatives,  $A = \{A_1, A_2, A_3, \dots, A_n\}$ , and  $m$  criteria,  $M = \{M_1, M_2, M_3, \dots, M_m\}$ , where  $i \in A, j \in M, i = \{1, 2, 3, \dots, n\}, j = \{1, 2, 3, \dots, m\}$ .

The matrix  $X' = (x'_{ij})_{n \times m}$  in Equation (1) is a decision matrix of  $n \times m$ . The weights of criteria M can be represented by weight vector  $W = \{w_1, w_2, w_3, \dots, w_m\}$ , which satisfy  $\sum_{j=1}^m w_j = 1$ .

$$X' = \begin{bmatrix} x'_{11} & x'_{12} & x'_{1m} \\ x'_{21} & \dots & x'_{2m} \\ x'_{n1} & x'_{n2} & x'_{nm} \end{bmatrix} \quad (1)$$

The weight can be determined by the Shannon entropy weight technique, which is contingent upon the degree of dispersion of the data. Initially, we employ the Min-Max method to normalize the original choice matrix, which has dimensions of  $n \times m \{x'_{ij}\}$ . Subsequently, we shift the standardized formula to the right by 0.001 units to simplify subsequent logarithmic computations.

$$x_{ij} = \frac{x'_{ij} - \min(x'_j)}{\max(x'_j) - \min(x'_j)} + 0.001, \text{ where } i = 1, 2, 3, \dots, n, \text{ and } j = 1, 2, 3, \dots, m. \quad (2)$$

Equation (4) was employed to calculate the entropy value, denoted as  $e_j$ . Entropy quantifies the degree of the dispersion of data. As the data become more dispersed, the entropy number decreases, suggesting that the data contain a larger quantity of information. Indicating a reduction in the quantity of information contained in the data, the entropy value increases as the data become more concentrated.

$$r_{ij} = \frac{x_{ij}}{\sum_{i=1}^n x_{ij}}, \text{ } i = 1, 2, 3, \dots, n, \text{ and } j = 1, 2, 3, \dots, m. \quad (3)$$

$$e_j = -\frac{1}{\ln n} \sum_{i=1}^n r_{ij}, \text{ } i = 1, 2, 3, \dots, n \text{ and } j = 1, 2, 3, \dots, m. \quad (4)$$

Equation (5) is employed to determine the weight  $w_j$ .

$$w_j = \frac{1 - e_j}{\sum_{j=1}^m (1 - e_j)} \quad (5)$$

### 3.3. TOPSIS Model

The TOPSIS model was developed by Hwang and Yoon in 1981 to evaluate the alternatives' proximity to the ideal solutions. By computing the Euclidean distance between the ideal and anti-ideal solutions and each target option, we evaluate the proximity. The ideal solution is characterized by the most favorable value for each evaluation criterion, while the anti-ideal solution is characterized by the least favorable value for each evaluation criterion. The optimal solution is ultimately selected as the most suitable alternative, as it is the most similar to the ideal solution and the most dissimilar to the anti-ideal solution. The initial step is to normalize the positive and negative criteria in Equation (6) to eliminate any discrepancies in dimensions. It is crucial to emphasize that the Min-Max method in Equation (6) is essential for the implementation of standardization in numerous dimensions. This method enables the alignment of gains and losses during the development of the entropy weight TOPSIS (Sati 2024).

$$\begin{aligned} \text{positive} : x_{ij}^+ &= \frac{x'_{ij} - \min(x'_j)}{\max(x'_j) - \min(x'_j)} \\ \text{negative} : x_{ij}^- &= \frac{\max(x'_j) - x'_{ij}}{\max(x'_j) - \min(x'_j)} \end{aligned} \quad (6)$$

$$\min(x'_j) = \{\min_i x'_{ij} | 1 < i < n, 1 < j < m\}$$

$$\max(x'_j) = \{\max_i x'_{ij} | 1 < i < n, 1 < j < m\}$$

Then, the dimensionless standardized decision matrix  $x_{ij}$  is made by using normalized positive and negative criteria to make the initial choice matrix in Equation (6), as shown in Equation (7).

$$X' = \begin{bmatrix} x_{11} & x_{12} & \dots & x_{1m} \\ x_{21} & \dots & \dots & x_{2m} \\ \vdots & \dots & \dots & \vdots \\ x_{n1} & x_{n2} & \dots & x_{nm} \end{bmatrix}, \text{ where } i = 1, 2, 3, \dots, n \text{ and } j = 1, 2, 3, \dots, m. \quad (7)$$

Furthermore, the decision matrix in Equation (8) is derived by multiplying each element  $v_{ij} = w_j \times x_{ij}$ , where  $w_j = (w_1, w_2, w_3, \dots, w_m)$  is obtained from Equation (5) and meets the condition  $\sum_{j=1}^m w_j = 1$ , and  $x_{ij}$  is generated using Equation (7).

$$V = \begin{bmatrix} v_{11} & v_{12} & \dots & v_{1m} \\ v_{21} & \dots & \dots & v_{2m} \\ \vdots & \dots & \dots & \vdots \\ v_{n1} & v_{n2} & \dots & v_{nm} \end{bmatrix} = \begin{bmatrix} w_1 x_{11} & w_2 x_{12} & \dots & w_m x_{1m} \\ w_1 x_{21} & w_2 x_{22} & \dots & w_m x_{2m} \\ \vdots & \dots & \dots & \vdots \\ w_1 x_{n1} & w_2 x_{n2} & \dots & w_m x_{nm} \end{bmatrix} \quad (8)$$

The positive ideal solution (PIS) is defined as the maximum value and the negative ideal solution (NIS) as the smallest value for each criterion in Equation (9). To determine the distance of each alternative to the positive ideal solution (PIS) and negative ideal solution (NIS), Equations (10) and (11) are employed.

$$PIS : P^+ = \{v_1^+, v_2^+, v_3^+, \dots, v_m^+\} = \{(\max_i v_{ij} | j \in M)\}$$

$$NIS : P^- = \{v_1^-, v_2^-, v_3^-, \dots, v_m^-\} = \{(\min_i v_{ij} | j \in M)\} \quad (9)$$

$$d_i^+ = \sqrt{\sum_{j=1}^m (v_{ij} - v_j^+)^2}, i = 1, 2, 3, \dots, n, \text{ and } j = 1, 2, 3, \dots, m. \quad (10)$$

$$d_i^- = \sqrt{\sum_{j=1}^m (v_{ij} - v_j^-)^2}, i = 1, 2, 3, \dots, n, \text{ and } j = 1, 2, 3, \dots, m. \quad (11)$$

Ultimately, the coefficient of relative closeness (RC) is calculated.

$$RC_i = \frac{d_i^-}{d_i^- + d_i^+}, i = 1, 2, 3, \dots, n \quad (12)$$

## 4. Results

The research established a decision matrix to categorize the analysis into three fundamental components. The following subsections delineate the various stages and their corresponding procedures: The preliminary stage utilizes the N1 method to standardize the data inside the decision matrix. This technique is designed to standardize data for enhanced comparability. As seen in Tables A1–A4 (Appendix A), we acquired a normalized matrix for each  $N_i$  at the completion of Step 1. The subsequent phase of the research included assigning weight to each criterion and constructing the weighted normalized matrix, as detailed in Section 3.2 of this study. This research was carried out using the entropy weight

TOPSIS approach. Table 2 delineates the weights allocated to each evaluated criterion for the FY2024.

**Table 2.** Weight vector of the criteria for the FY2024.

| Criterion     | FY2024 |        |        |        |        |        |        |        |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|
|               | C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
| $e_j$         | 0.9870 | 0.9775 | 0.9904 | 0.9899 | 0.9899 | 0.9977 | 1.0000 | 0.9901 |
| $d = 1 - e_j$ | 0.0130 | 0.0225 | 0.0096 | 0.0101 | 0.0101 | 0.0023 | 0.0000 | 0.0099 |
| $W_j$         | 0.1674 | 0.2902 | 0.1241 | 0.1299 | 0.1304 | 0.0300 | 0.0000 | 0.1279 |

The governance pillar substantially affects the greenwashing ratings of European financial institutions when the entropy weight and TOPSIS approaches are used concurrently. The last two years seem to represent a governance bubble marked by rapidly rising aspirations for sustainability, while internal governance frameworks inside companies are struggling to evolve. In this context, it is essential to recognize the relationship between greenwashing and governance, and to implement strong processes to guarantee that firms can validate their environmental, social, and governance (ESG) claims. Highlighting the “G” in ESG is essential for risk reduction and bolstering stakeholder trust. Let us analyze how a firm may unintentionally engage in deceptive practices while claiming its dedication to environmental sustainability. This conduct is not always malicious or intentional. In several cases, the auditors lack the necessary knowledge to validate their claims. Many firms assert compliance with self-imposed standards, deceiving consumers into thinking they participate in environmentally friendly practices because of their prominent brand reputation. Nonetheless, the reliability of ESG data disclosed in companies’ sustainability reports is often unaudited. Inaccurate ESG information may hinder the integration of ESG factors into investment decisions owing to a company’s greenwashing tactics. Identifying the increase in greenwashing amplifies the likelihood of legal issues for companies.

The misinterpretation of ESG criteria and the lack of a unified framework can result in firms making disingenuous commitments rather than really adopting sustainable practices. It is essential to provide a framework for governance professionals to create “greenwash-proof” organizations. This framework must include thorough due diligence protocols, independent audits, and clear guidelines for ESG reporting and disclosure. Organizations must establish internal controls to guarantee the accuracy and reliability of their ESG claims. Moreover, regulatory bodies and industry associations are crucial in establishing industry standards and monitoring compliance. Implementing this technique will allow governance specialists to ascertain their businesses’ genuine commitment to sustainability, therefore mitigating the hazards of greenwashing. This technique would foster trust among stakeholders and enable informed investment decisions (Huang et al. 2025; Liu et al. 2024b; Liu 2024).

Furthermore, the findings indicate that the greenwashing score is substantially influenced by board size, which is the second most pivotal factor. The correlation between board size and greenwashing may seem contentious, since it is based on the current literature about corporate governance and environmental performance. Some analysts argue that larger boards lead to heightened inefficiencies in the interactions between a company’s insiders and outsiders. Conversely, others argue that more scrutiny diminishes the influence of individual members on the whole board. A bigger board may possess committees specifically assigned to tackle sustainability issues. Furthermore, a significant correlation exists between board size and environmental efficacy. This indicates a negative correlation between greenwashing and board size.

Additionally, the board's efficacy should serve as a catalyst for improving the quantity, clarity, and quality of environmental disclosures. Nevertheless, the present analysis indicates that this characteristic is the third most significant factor in the occurrence of greenwashing. Independent board members are often seen as more adept at supervising CEOs, less susceptible to management influence, and more likely to prioritize shareholder interests. Nonetheless, having insiders supervise the board may be advantageous, since insider governance more effectively leverages proprietary information. Considering the potential incentives for seemingly independent directors to collaborate with insiders, investors have often surpassed conventional expectations about board effectiveness (Henao-Rodríguez et al. 2024; Teti et al. 2024). Regulatory limitations hinder independent directors from advocating for environmental sustainability, but normative forces encourage such support. This may explain the inverse association between the board's performance and the amount of information the corporation voluntarily shares. This may explain why legal and normative limitations have varying impacts on independent directors' endeavors to improve the sustainability performance of their organizations. This suggests a link between board independence and greenwashing, since inadequate oversight from external directors may elevate the probability of firms using greenwashing strategies (Li and Xiao 2025; Wang and Shen 2024).

## 5. Discussion

The increasing emphasis on sustainability is a positive trend, as companies are rapidly incorporating environmental considerations into their strategies and operations. Consumers are selecting environmentally responsible products, governments are enforcing more stringent environmental regulations, and investors are requesting ESG disclosures. In an effort to remain competitive, some organizations have also fabricated or exaggerated their sustainability accomplishments as a result of this heightened emphasis. This phenomenon, which is referred to as "greenwashing", is not only detrimental to the company and its constituents, but it is also deceptive. Various types of greenwashing exist, including minor exaggerations and blatant fabrications. Companies may portray their sustainability initiatives in a positive perspective while neglecting to disclose the adverse environmental consequences of other aspects of their operations. For instance, a company may emphasize its utilization of recycled materials in packaging while disregarding the fact that its supply chain emits substantial carbon emissions. This selective reporting creates a deceptive impression of sustainability and misleads stakeholders into believing that the company is more environmentally responsible than it honestly is (Li et al. 2024a; Zhang 2022, 2024a).

New governance challenges are presented to boards of directors by the proliferation of greenwashing. Directors are responsible for guaranteeing that their organizations not only adhere to environmental regulations but also make sustainability claims that are both transparent and truthful (Liu et al. 2024a; Nepal et al. 2025; Yao et al. 2024; Zhang 2024b). As regulators and consumers are increasingly holding companies accountable for misleading claims, failure to comply with this requirement can lead to financial risks and reputational damage. As custodians of corporate integrity, boards are obligated to supervise sustainability reporting and guarantee that the claims made by their organizations are substantiated by verifiable data and consistent with genuine environmental advancements.

The potential of specific corporate governance mechanisms to either facilitate or impede greenwashing is the subject of this paper. We have implemented an integration of the entropy weight and TOPSIS multicriteria decision-making methods to address the research objective of the current study. We initially propose a novel set of metrics to accurately represent the enigmatic phenomenon of greenwashing. Consequently, we can illustrate the nature of the relationships between specific board characteristics and

greenwashing behaviors. It is unclear how the intensity of greenwashing is correlated with the number of directors in the context of board size. Nevertheless, the notion that a larger board size implicitly guarantees a resolution to greenwashing can be disproved. Greenwashing behaviors seem to be positively correlated with the efficacy of boards. This may seem to be a contradiction; however, it is in accordance with the idea that independent directors can increase their reputation with stakeholders and secure additional employment opportunities by improving the environmental credentials of the company they represent (Zhang et al. 2025).

The findings indicated that the greenwashing scores of European financial institutions may be affected by the board of directors. The literature also raises questions about the causal link between enhanced performance and board size (Li and Chen 2024; Zhao et al. 2024). Neglecting to integrate improved oversight into broader committees may leave us more vulnerable to greenwashing. Conversely, several researchers contend that bigger boards enhance oversight, thereby diminishing the impact of inside members and thereby lowering agency expenses, which poses a problem for the board of directors. To address sustainability issues, corporations with bigger boards often create specialized committees, resulting in enhanced environmental performance. The board size may function as an effective remedy for greenwashing, as our study corroborates (Chen and Dagestani 2023).

The study results have both theoretical and practical implications. The theoretical contribution of the research is on the significance of board size. The literature raises uncertainties about the causal link between board size and the greenwashing performance of financial organizations (Moodaley and Telukdarie 2023). This research indicates a correlation between the size of the board of directors and the greenwashing performance of enterprises, suggesting that enhanced oversight enables leaders to reduce the occurrence of greenwashing. A bigger board may have committees dedicated to sustainability issues and environmental performance, which may aid in mitigating and addressing the impacts of greenwashing. Consequently, the results of this study may augment the literature about the influence of the board of directors on greenwashing practices. Furthermore, external directors may proficiently engage with internal stakeholders to alleviate the impact of the greenwashing problem. Investors may often transcend the conventional need for board independence, considering the potential biases that supposedly independent directors may have towards insiders. Thus, voting mechanisms and activist investors facilitate the intervention of external investors in addressing issues with agencies more effectively than the mere presence of independent members (Ma and Ahmad 2024a; Wang et al. 2024a).

Financial organizations should have a cohesive environmental communication strategy, since exaggerating green credentials is not financially advantageous. Secondly, several board characteristics anticipated to enhance the sustainability footprint of corporations seem to undermine the coherence between actions and rhetoric. Responsible owners and institutional investors collaborating with firms on sustainability issues can consider alternative management approaches that incentivize managers to achieve favorable environmental objectives and metrics. Our findings are pertinent to legislation and the vigorous discourse around the formulation of sustainability disclosure requirements and frameworks. Moreover, governments must tackle these issues by striving for the establishment and execution of comprehensive international frameworks for the disclosure of environmental performance. In addition to clarifying sustainability reporting standards, it is essential to ensure compliance via third-party audits and the imposition of tangible penalties for misconduct (Luu et al. 2025; Ruiz-Blanco et al. 2022).

## 6. Conclusions

Greenwashing presents in multiple forms, ranging from ambiguous assertions like “eco-friendly” or “sustainably sourced” to more intricate deceptions, including fraudulent certifications or inflated environmental accomplishments. Although firms may resort to greenwashing to attract an expanding demographic of environmentally aware customers, the long-term repercussions may be significant. Regulatory oversight, legal disputes, and brand harm are among the repercussions organizations may encounter upon making fraudulent sustainability claims. This is where corporate governance, especially the function of boards, becomes essential. Boards of directors are accountable for supervising the ethical and transparent functioning of their firms, including the veracity of sustainability assertions. This study assessed the various attributes of the board of directors in relation to greenwashing performance scores, focusing on 359 financial institutions in Europe. The study used entropy weight and TOPSIS methods.

The study findings suggested that the greenwashing scores of European financial institutions may be influenced by the board of directors. The literature also questions the causal relationship between improved performance and board size. Failing to include enhanced supervision in larger committees may increase our susceptibility to greenwashing. In contrast, some scholars argue that larger boards improve monitoring, hence reducing the influence of individual (internal) members on the board and subsequently decreasing agency costs, which presents a problem for boards of directors. To tackle sustainability challenges, firms with larger boards often establish specialized committees, leading to improved environmental performance. The board size may successfully mitigate greenwashing, as our research substantiates.

Moreover, additional studies in the relevant sector must discover other features of boards of directors that will enhance the understanding of their function in relation to the greenwashing performance scores of financial institutions. A mixed-methods strategy combining qualitative and quantitative research will be advantageous for this goal. Our next study agenda includes interviews within a focus group of board directors, while the subsequent phase of this analysis may involve the use of alternative multicriteria decision-making methodologies such as PROMETHEE and ELECTRE.

**Author Contributions:** Conceptualization, G.Z. and E.P.; methodology, G.Z.; software, G.Z.; validation, E.P., G.Z. and G.K.; formal analysis, G.Z.; investigation, G.K.; resources, E.P.; data curation, G.Z.; writing—original draft preparation, G.Z., E.P. and G.K.; writing—review and editing, G.Z., E.P. and G.K.; visualization, G.Z.; supervision, E.P.; project administration, G.Z.; All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Data Availability Statement:** The dataset is available on request from the authors.

**Conflicts of Interest:** The authors declare no conflicts of interest.

## Appendix A

**Table A1.** Normalization of the matrix.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0049 | 0.0016 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0051 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0058 | 0.0049 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0037 | 0.0049 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0015 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0034 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0015 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0019 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0043 | 0.0029 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0002 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0034 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0013 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0023 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0030 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0022 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0064 | 0.0037 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0061 | 0.0037 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0031 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0040 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0061 | 0.0043 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0001 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0049 | 0.0017 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0046 | 0.0050 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0050 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0050 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0018 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0046 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0025 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0011 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0015 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0008 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0031 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0013 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0026 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0019 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0014 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0014 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0005 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0010 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0018 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0003 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0015 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0032 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0016 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0045 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0012 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0013 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0017 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0035 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0024 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0028 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0038 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0040 | 0.0032 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0006 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0010 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0006 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0004 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0051 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0023 | 0.0022 | 0.0041 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0015 | 0.0008 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0012 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0016 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0025 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0005 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0048 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0018 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0019 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0030 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0013 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0047 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0015 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0037 | 0.0034 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0028 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0043 | 0.0023 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0023 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0012 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0046 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0045 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0022 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0010 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0011 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0027 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0024 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0009 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0042 |
| 0.0034 | 0.0006 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0037 | 0.0002 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0011 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0024 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0052 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0005 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0014 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0046 | 0.0021 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0031 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0020 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0016 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0030 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0011 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0021 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0049 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0014 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0030 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0027 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0015 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0027 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0043 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0049 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0021 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0017 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0009 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0030 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0009 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0015 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0021 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0042 |
| 0.0040 | 0.0021 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0012 | 0.0006 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0043 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0033 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0012 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0012 | 0.0007 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0031 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0009 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0012 | 0.0013 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0012 | 0.0014 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0023 | 0.0022 | 0.0021 | 0.0039 | 0.0015 | 0.0028 | 0.0021 |
| 0.0021 | 0.0033 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0037 | 0.0009 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0035 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0039 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0042 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0012 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0021 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0031 | 0.0044 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0017 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0052 | 0.0026 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0050 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0031 | 0.0036 | 0.0022 | 0.0021 | 0.0039 | 0.0015 | 0.0028 | 0.0042 |
| 0.0015 | 0.0020 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0031 | 0.0025 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0017 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0039 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0038 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0030 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0011 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0028 | 0.0035 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0020 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0015 | 0.0022 | 0.0041 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0028 | 0.0037 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0036 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0001 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0032 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0061 | 0.0029 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0031 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0018 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0025 | 0.0034 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0034 | 0.0004 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0009 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0017 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0049 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0034 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0046 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0034 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0025 | 0.0005 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0042 |
| 0.0025 | 0.0043 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0045 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0008 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0012 | 0.0022 | 0.0021 | 0.0039 | 0.0015 | 0.0028 | 0.0021 |
| 0.0025 | 0.0013 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0074 | 0.0025 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0046 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0033 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0034 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0031 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0029 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0038 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0033 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0032 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0035 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0025 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0007 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0030 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0018 | 0.0035 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0055 | 0.0032 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0037 | 0.0031 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0014 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0033 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0043 | 0.0018 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0043 | 0.0032 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0019 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0010 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0025 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0021 | 0.0022 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0022 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0028 | 0.0029 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0034 | 0.0019 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0007 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0014 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0049 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0046 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0007 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0015 | 0.0013 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0029 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0044 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0024 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0012 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0008 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0034 | 0.0035 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0019 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0013 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0029 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0046 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0017 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0030 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0029 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0012 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0011 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0044 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0030 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0020 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0013 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0037 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0011 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0017 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0029 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0041 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0042 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0049 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0034 | 0.0052 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0045 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0015 | 0.0045 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0040 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0035 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0014 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0030 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0042 |
| 0.0021 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0006 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0015 | 0.0015 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0013 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0015 | 0.0006 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0021 | 0.0037 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0009 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0022 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0039 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0015 | 0.0045 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0021 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0044 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0034 | 0.0049 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0033 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0041 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0037 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0012 | 0.0023 | 0.0043 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0042 |
| 0.0021 | 0.0023 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0019 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0016 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0042 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0037 | 0.0046 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0025 | 0.0043 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0007 | 0.0043 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0021 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0020 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0046 | 0.0032 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0019 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0033 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0040 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0009 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0008 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0047 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0038 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0031 | 0.0045 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0028 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0035 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0027 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0017 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0041 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0025 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0034 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0043 | 0.0013 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0010 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0027 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |
| 0.0025 | 0.0043 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0045 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0023 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0037 | 0.0044 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0008 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0021 | 0.0018 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0011 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0036 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0031 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |

Table A1. Cont.

| C1     | C2     | C3     | C4     | C5     | C6     | C7     | C8     |
|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.0015 | 0.0016 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0022 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0012 | 0.0003 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0026 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0019 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0040 | 0.0046 | 0.0022 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0030 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0049 | 0.0013 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0028 | 0.0029 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0048 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0018 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0025 | 0.0032 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0018 | 0.0020 | 0.0022 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0018 | 0.0017 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0026 | 0.0043 | 0.0041 | 0.0039 | 0.0029 | 0.0028 | 0.0042 |
| 0.0015 | 0.0041 | 0.0043 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0023 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0042 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0042 |
| 0.0025 | 0.0031 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0021 | 0.0037 | 0.0022 | 0.0021 | 0.0039 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0013 | 0.0022 | 0.0021 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0015 | 0.0011 | 0.0043 | 0.0041 | 0.0020 | 0.0029 | 0.0028 | 0.0021 |
| 0.0031 | 0.0035 | 0.0022 | 0.0021 | 0.0020 | 0.0015 | 0.0028 | 0.0021 |

Table A2. Computation of entropy.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0261 | −0.0103 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0270 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0300 | −0.0259 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0206 | −0.0262 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0099 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0191 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0261 | −0.0099 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0118 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0222 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0234 | −0.0170 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0019 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0194 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0087 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0138 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0172 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0136 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0325 | −0.0205 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0312 | −0.0208 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0177 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0222 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0312 | −0.0233 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0006 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0261 | −0.0110 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0247 | −0.0265 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0220 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0256 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| -0.0261 | -0.0266 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0267 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0232 |
| -0.0220 | -0.0114 | -0.0236 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0232 |
| -0.0247 | -0.0251 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0195 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0232 |
| -0.0132 | -0.0151 | -0.0133 | -0.0128 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0247 | -0.0226 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0076 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0099 | -0.0133 | -0.0128 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0060 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0192 | -0.0178 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0220 | -0.0250 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0194 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0085 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0155 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0117 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0163 | -0.0240 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0229 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0089 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0091 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0037 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0147 | -0.0072 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0111 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0025 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0098 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0132 | -0.0184 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0101 | -0.0133 | -0.0128 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0206 | -0.0243 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0099 | -0.0081 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0084 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0132 | -0.0109 | -0.0133 | -0.0128 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0177 | -0.0198 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0163 | -0.0146 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0192 | -0.0249 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0163 | -0.0250 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0147 | -0.0213 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0177 | -0.0241 | -0.0133 | -0.0128 | -0.0122 | -0.0095 | -0.0164 | -0.0130 |
| -0.0220 | -0.0184 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0045 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0067 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0177 | -0.0044 | -0.0133 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0116 | -0.0033 | -0.0133 | -0.0228 | -0.0217 | -0.0170 | -0.0164 | -0.0130 |
| -0.0220 | -0.0269 | -0.0236 | -0.0128 | -0.0122 | -0.0170 | -0.0164 | -0.0130 |
| -0.0163 | -0.0139 | -0.0133 | -0.0228 | -0.0122 | -0.0095 | -0.0164 | -0.013  |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0163 | −0.0251 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0099 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0206 | −0.0191 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0165 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0234 | −0.0139 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0220 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0141 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0083 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0247 | −0.0217 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0243 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0135 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0066 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0191 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0076 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0162 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0147 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0064 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0232 |
| −0.0192 | −0.0044 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0248 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0206 | −0.0019 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0076 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0226 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0143 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0251 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0274 | −0.0215 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0238 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0036 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0095 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0247 | −0.0130 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0177 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0123 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0102 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0261 | −0.0172 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0076 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0204 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0236 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0261 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0090 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0176 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0159 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0098 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0160 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0236 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0262 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0131 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0205 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0109 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0227 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0063 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0174 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0064 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0095 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0129 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0232 |
| −0.0220 | −0.0131 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0082 | −0.0046 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0247 | −0.0217 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0202 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0234 | −0.0231 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0222 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0192 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0186 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0079 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0082 | −0.0049 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0179 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0061 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0082 | −0.0086 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0082 | −0.0092 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0140 | −0.0133 | −0.0128 | −0.0217 | −0.0095 | −0.0164 | −0.0130 |
| −0.0132 | −0.0189 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0206 | −0.0062 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0197 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0218 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0231 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0083 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0131 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0177 | −0.0239 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0111 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0274 | −0.0156 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0264 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0177 | −0.0200 | −0.0133 | −0.0128 | −0.0217 | −0.0095 | −0.0164 | −0.0232 |
| −0.0099 | −0.0123 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0177 | −0.0149 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0108 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0218 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0214 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0172 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0075 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0205 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0225 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0196 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0126 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0097 | −0.0133 | −0.0228 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0163 | −0.0208 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0205 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0011 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0182 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0312 | −0.0171 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0179 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0115 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0147 | −0.0194 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0192 | −0.0030 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0063 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0109 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0260 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0193 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0247 | −0.0241 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0195 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0147 | −0.0036 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0232 |
| −0.0147 | −0.0235 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0242 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0177 | −0.0233 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0261 | −0.0215 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0057 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0225 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0083 | −0.0133 | −0.0128 | −0.0217 | −0.0095 | −0.0164 | −0.0130 |
| −0.0147 | −0.0087 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0361 | −0.0151 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0247 | −0.0258 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0188 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0195 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0179 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0167 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0233 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0211 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0187 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0231 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0184 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0198 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0261 | −0.0150 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0049 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0219 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0176 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0236 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0116 | −0.0197 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0287 | −0.0185 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0206 | −0.0180 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0221 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0092 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0191 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0234 | −0.0113 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0234 | −0.0185 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0118 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0067 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0147 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0134 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0132 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0163 | −0.0167 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0192 | −0.0118 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0051 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0092 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0261 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0205 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0246 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0246 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0049 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0099 | −0.0086 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0172 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0239 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0144 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0083 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0057 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0192 | −0.0199 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0117 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0089 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0171 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0247 | −0.0258 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0111 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0175 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0169 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0083 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0073 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0239 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0217 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0176 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0126 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0228 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0089 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0228 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0209 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0074 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0108 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0168 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0225 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0231 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0261 | −0.0237 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0192 | −0.0275 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0242 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0099 | −0.0243 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0221 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0197 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0091 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0224 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0201 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0175 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0232 |
| −0.0132 | −0.0249 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0046 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0099 | −0.0098 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0084 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0240 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0046 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0132 | −0.0206 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0062 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0133 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0216 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0247 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0099 | −0.0243 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0130 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0240 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0192 | −0.0262 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0190 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0240 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0255 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0225 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0206 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0082 | −0.0141 | −0.0236 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0232 |
| −0.0132 | −0.0138 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0117 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0103 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0231 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0206 | −0.0247 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0147 | −0.0235 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0050 | −0.0236 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0127 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0126 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0247 | −0.0184 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0122 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0187 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0220 | −0.0204 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0202 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0064 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0235 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0059 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0251 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0211 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0177 | −0.0242 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0163 | −0.0255 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0197 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0161 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0108 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0223 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0150 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0192 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0234 | −0.0086 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0070 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0162 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |
| −0.0147 | −0.0233 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0245 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0141 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0206 | −0.0237 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0058 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0132 | −0.0111 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0075 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0203 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0181 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0103 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0135 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0231 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0082 | −0.0027 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0155 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0119 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0220 | −0.0246 | −0.0133 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0175 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0261 | −0.0087 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0163 | −0.0169 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0255 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0112 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0147 | −0.0186 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0116 | −0.0126 | −0.0133 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0116 | −0.0111 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0156 | −0.0236 | −0.0228 | −0.0217 | −0.0170 | −0.0164 | −0.0232 |
| −0.0099 | −0.0224 | −0.0236 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0138 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0132 | −0.0230 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0232 |
| −0.0147 | −0.0181 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |

Table A2. Cont.

| C1      | C2      | C3      | C4      | C5      | C6      | C7      | C8      |
|---------|---------|---------|---------|---------|---------|---------|---------|
| −0.0132 | −0.0206 | −0.0133 | −0.0128 | −0.0217 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0085 | −0.0133 | −0.0128 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0099 | −0.0074 | −0.0236 | −0.0228 | −0.0122 | −0.0170 | −0.0164 | −0.0130 |
| −0.0177 | −0.0197 | −0.0133 | −0.0128 | −0.0122 | −0.0095 | −0.0164 | −0.0130 |

Table A3. Computation of the weight vector.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 256.0000 | 883.4105  | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 9104.8636 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 361.0000 | 8199.6075 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 144.0000 | 8444.4691 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 815.1102  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 3913.1524 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 812.6819  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 1236.3139 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 5606.9848 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 196.0000 | 2949.7292 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 18.3821   | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4078.7535 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 594.8802  | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 1797.9930 | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 3030.5650 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 1714.4476 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 441.0000 | 4632.6546 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 400.0000 | 4795.1722 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 3247.3874 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 5637.3356 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 400.0000 | 6345.3667 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 1.5257    | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 256.0000 | 1050.2028 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 225.0000 | 8652.4634 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 5529.9991 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 7973.4428 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 8747.9072 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 8847.1161 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 1138.0538 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 225.0000 | 7604.2668 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 4097.2146 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 2200.1270 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 5856.9732 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 433.0396  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 800.9509  | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 249.1485  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 3281.1681 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 7561.6947 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 4067.9199 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 558.1811  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 2347.2798 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1203.7359 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 6814.9012 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 6044.5261 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 633.5891  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 656.2203  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 36.0000  | 80.5282   | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 378.4838  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 1070.4027 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 34.0125   | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 785.8122  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 3552.2851 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 842.2529  | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 6994.3886 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 501.5198  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 550.1211  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 1015.4510 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 4257.9409 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2038.4663 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 7441.7975 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 7533.1259 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 5086.4757 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 6873.0431 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 169.0000 | 3550.5138 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 129.1593  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 326.5698  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 121.8602  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 61.8429   | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 8998.7656 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 1819.3248 | 1.0000 | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 25.0000  | 240.1463  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 532.1466  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 837.7295  | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 2208.2281 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 7535.3894 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 89.2306   | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 8164.6574 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1163.2005 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 1194.1174 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 3141.0223 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 625.0000  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 7633.3867 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 808.3860  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 144.0000 | 3906.2500 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 2759.4523 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 196.0000 | 1817.3295 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 5499.1752 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 1885.7998 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 533.0107  | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 225.0000 | 5346.4641 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 7004.4738 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 1685.6819 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 314.4549  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 3925.2702 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 435.0673  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 2605.8199 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2067.2084 | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 289.4025  | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 4.0000 |
| 121.0000 | 119.0742  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 7368.9673 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 144.0000 | 18.1326   | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 25.0000  | 438.5319  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 5879.1820 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 1931.7741 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 7583.7574 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 289.0000 | 5216.0494 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 6683.4605 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 76.8544   | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 725.8147  | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 225.0000 | 1536.2778 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 3248.9410 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1343.5700 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 861.4133  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 3035.1938 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 432.6206  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 4578.0151 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 6535.5083 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 8363.1106 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 654.7674  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 3209.8648 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 2501.0999 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 790.4112  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 2545.1085 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 6554.7707 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 8436.7627 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 1576.8722 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 4612.4764 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 1005.9438 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 5951.4974 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 283.4252  | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 3097.1096 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 291.8403  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 731.8695  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 1528.9122 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 4.0000 |
| 169.0000 | 1562.7370 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 16.0000  | 132.8378  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 5299.5220 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 4492.6802 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 196.0000 | 6223.9384 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 5607.8060 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 3933.2789 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 3679.5750 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 469.4444  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 16.0000  | 156.6669  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 3332.2891 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 262.9057  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 16.0000  | 584.8168  | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 16.0000  | 675.7469  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 1856.8264 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 | 1.0000 |
| 49.0000  | 3802.7778 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 144.0000 | 266.4986  | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4222.9368 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 5356.1756 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 6204.3082 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 537.8164  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 1582.4362 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 100.0000 | 6708.8111 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 1055.6781 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 289.0000 | 2405.6689 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 8587.4862 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 100.0000 | 4387.1973 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 | 4.0000 |
| 25.0000  | 1357.9246 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 100.0000 | 2141.9003 | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 1004.9068 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 5364.2633 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 5136.1111 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 3045.8518 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 415.7960  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 4625.7849 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 5807.3487 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 4181.2695 | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 1444.7861 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 771.4678  | 1.0000 | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 81.0000  | 4775.8717 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 4617.0283 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 4.7123    | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 3486.4695 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 400.0000 | 2974.2884 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 3356.0526 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1151.1843 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4058.6704 | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 121.0000 | 52.1605   | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 280.5625  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 1006.0921 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 8282.0415 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 4022.8481 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 225.0000 | 6857.2325 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 4101.3662 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 64.0000  | 77.5451   | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 4.0000 |
| 64.0000  | 6460.3486 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 6937.5448 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 6326.5611 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 5222.4478 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 225.6278  | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 5837.3373 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 537.6972  | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 | 1.0000 |
| 64.0000  | 600.0592  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 576.0000 | 2216.3770 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 225.0000 | 8104.0914 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 3757.8688 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4127.3833 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 3344.6206 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 2826.9696 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 6336.3137 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 4991.3675 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 3711.0401 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 6229.9552 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 3584.7780 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4261.5881 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 2162.2023 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 159.6599  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 121.0000 | 5421.7019 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 3181.1021 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 6565.8360 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 36.0000  | 4204.9037 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 324.0000 | 3611.1197 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 144.0000 | 3380.2641 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 5555.7699 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 680.2209  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 3891.7061 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 196.0000 | 1116.7568 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 196.0000 | 3624.5639 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 1230.3357 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 324.9237  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 2090.1461 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1664.6177 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1616.2837 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2829.3104 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 121.0000 | 1226.9570 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 172.3786  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 683.1918  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 8334.8003 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 4609.0418 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 7223.4644 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 7222.9275 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 154.2947  | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 25.0000  | 583.2485  | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 3012.7901 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 6755.5918 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1990.4437 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 537.2333  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 223.0097  | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 121.0000 | 4305.4531 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 1196.3528 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 625.0000  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 2990.7962 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 225.0000 | 8130.2986 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 1052.6678 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 3150.2307 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 2901.8349 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 539.9182  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 397.1845  | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 6742.8201 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 121.0000 | 5302.2971 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 3194.9229 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 1427.0103 | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 6038.1918 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 627.5256  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 6005.7435 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 4872.8343 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 411.5102  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1002.7778 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 2857.8956 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 5806.9473 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 6232.1718 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 256.0000 | 6582.2781 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 121.0000 | 9487.2641 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 6956.5163 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 25.0000  | 6997.3556 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 5587.7024 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4228.0274 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 665.7932  | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 5758.1254 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 4403.9422 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 3164.5612 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 4.0000 |
| 49.0000  | 7491.0187 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 136.2949  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 25.0000  | 786.2580  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 551.7036  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 6835.8332 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 136.4586  | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 49.0000  | 4681.0386 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 274.2115  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 1643.9695 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 5248.9786 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 7285.6636 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 25.0000  | 6999.5457 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 1535.7799 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 6806.5162 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 121.0000 | 8473.6670 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 3857.0715 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 6794.8622 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 7890.7805 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 5806.5064 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 4678.7618 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 16.0000  | 1889.5276 | 4.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1788.9318 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 1193.4637 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 882.6398  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 6179.7068 | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 144.0000 | 7297.5633 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 64.0000  | 6498.4746 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 163.8895  | 4.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 1473.0096 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 1446.1351 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 225.0000 | 3578.3512 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1318.6238 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 3716.4223 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 169.0000 | 4598.1140 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 4494.8963 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 286.0573  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 6500.8838 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 242.7274  | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 7627.1111 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 4981.7415 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 100.0000 | 6944.4444 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 81.0000  | 7930.8744 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 4193.5829 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2576.8784 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 999.6228  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 5719.4368 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |

Table A3. Cont.

| C1       | C2        | C3     | C4     | C5     | C6     | C7     | C8     |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| 49.0000  | 2171.9104 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 3961.6538 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 196.0000 | 588.6379  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 360.3887  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 2617.3438 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 64.0000  | 6313.5141 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 7179.8181 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 1888.7992 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 144.0000 | 6606.2616 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 227.2785  | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 49.0000  | 1064.8057 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 422.7827  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 4549.4344 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 3421.2248 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 884.1597  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 1704.5132 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 6185.2878 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 16.0000  | 41.0214   | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2371.7584 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1248.4246 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 169.0000 | 7254.6471 | 1.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 3168.3565 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 256.0000 | 589.7959  | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 81.0000  | 2883.1239 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 7934.5393 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 1094.7016 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 64.0000  | 3662.0387 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 36.0000  | 1423.3279 | 1.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 36.0000  | 1052.1954 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 2405.3060 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 1.0000 | 4.0000 |
| 25.0000  | 5774.3298 | 4.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 1768.6686 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 6124.2482 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 4.0000 |
| 64.0000  | 3418.6996 | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 49.0000  | 4714.9403 | 1.0000 | 1.0000 | 4.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 557.9051  | 1.0000 | 1.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 25.0000  | 406.3547  | 4.0000 | 4.0000 | 1.0000 | 4.0000 | 1.0000 | 1.0000 |
| 100.0000 | 4183.4214 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

Table A4. Euclidean distance between the ideal best and ideal worst solution.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.3674  | 0.1670  | 0.5344        | 0.3125                |
| 0.0612  | 0.5101  | 0.5713        | 0.8929                |
| 0.0473  | 0.4882  | 0.5355        | 0.9117                |
| 0.0718  | 0.4907  | 0.5625        | 0.8724                |
| 0.3768  | 0.1537  | 0.5306        | 0.2897                |
| 0.2008  | 0.3328  | 0.5336        | 0.6237                |
| 0.3741  | 0.1607  | 0.5348        | 0.3005                |
| 0.3392  | 0.1923  | 0.5315        | 0.3619                |
| 0.1462  | 0.3980  | 0.5442        | 0.7314                |
| 0.2387  | 0.2913  | 0.5299        | 0.5496                |
| 0.5134  | 0.0197  | 0.5331        | 0.0369                |
| 0.2005  | 0.3384  | 0.5389        | 0.6279                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.4030  | 0.1269  | 0.5300        | 0.2395                |
| 0.3074  | 0.2238  | 0.5312        | 0.4212                |
| 0.2461  | 0.2907  | 0.5368        | 0.5415                |
| 0.3089  | 0.2209  | 0.5298        | 0.4170                |
| 0.1594  | 0.3718  | 0.5311        | 0.7000                |
| 0.1536  | 0.3767  | 0.5303        | 0.7104                |
| 0.2387  | 0.3008  | 0.5395        | 0.5576                |
| 0.1548  | 0.3984  | 0.5531        | 0.7202                |
| 0.0982  | 0.4316  | 0.5298        | 0.8146                |
| 0.5275  | 0.0121  | 0.5396        | 0.0223                |
| 0.3531  | 0.1803  | 0.5334        | 0.3380                |
| 0.0550  | 0.4984  | 0.5534        | 0.9006                |
| 0.1430  | 0.3961  | 0.5391        | 0.7347                |
| 0.0662  | 0.4784  | 0.5446        | 0.8785                |
| 0.0491  | 0.5018  | 0.5509        | 0.9108                |
| 0.0678  | 0.5023  | 0.5701        | 0.8811                |
| 0.3484  | 0.1820  | 0.5304        | 0.3432                |
| 0.0741  | 0.4672  | 0.5414        | 0.8631                |
| 0.1915  | 0.3412  | 0.5327        | 0.6405                |
| 0.2874  | 0.2469  | 0.5342        | 0.4621                |
| 0.1230  | 0.4103  | 0.5333        | 0.7693                |
| 0.4255  | 0.1061  | 0.5316        | 0.1996                |
| 0.3851  | 0.1465  | 0.5316        | 0.2756                |
| 0.4507  | 0.0794  | 0.5300        | 0.1497                |
| 0.2276  | 0.3045  | 0.5321        | 0.5723                |
| 0.0825  | 0.4647  | 0.5472        | 0.8493                |
| 0.1928  | 0.3400  | 0.5327        | 0.6382                |
| 0.4108  | 0.1212  | 0.5320        | 0.2278                |
| 0.2718  | 0.2583  | 0.5301        | 0.4873                |
| 0.3534  | 0.1805  | 0.5339        | 0.3381                |
| 0.1143  | 0.4392  | 0.5535        | 0.7935                |
| 0.1246  | 0.4147  | 0.5394        | 0.7690                |
| 0.4028  | 0.1293  | 0.5320        | 0.2430                |
| 0.3990  | 0.1322  | 0.5312        | 0.2489                |
| 0.4865  | 0.0441  | 0.5306        | 0.0831                |
| 0.4290  | 0.1010  | 0.5300        | 0.1905                |
| 0.3620  | 0.1703  | 0.5324        | 0.3199                |
| 0.5042  | 0.0270  | 0.5312        | 0.0509                |
| 0.3878  | 0.1449  | 0.5327        | 0.2720                |
| 0.2237  | 0.3151  | 0.5388        | 0.5848                |
| 0.3813  | 0.1504  | 0.5317        | 0.2828                |
| 0.0991  | 0.4463  | 0.5454        | 0.8184                |
| 0.4173  | 0.1143  | 0.5316        | 0.2151                |
| 0.4104  | 0.1206  | 0.5310        | 0.2272                |
| 0.3651  | 0.1661  | 0.5312        | 0.3127                |
| 0.1893  | 0.3467  | 0.5360        | 0.6468                |
| 0.2933  | 0.2383  | 0.5316        | 0.4483                |
| 0.0929  | 0.4600  | 0.5529        | 0.8320                |
| 0.0996  | 0.4621  | 0.5617        | 0.8226                |
| 0.1651  | 0.3785  | 0.5437        | 0.6963                |
| 0.1093  | 0.4415  | 0.5508        | 0.8015                |
| 0.2126  | 0.3183  | 0.5309        | 0.5996                |
| 0.4739  | 0.0564  | 0.5304        | 0.1064                |
| 0.4387  | 0.0916  | 0.5302        | 0.1727                |
| 0.4718  | 0.0622  | 0.5340        | 0.1165                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.4924  | 0.0385  | 0.5309        | 0.0725                |
| 0.0616  | 0.5071  | 0.5687        | 0.8917                |
| 0.3062  | 0.2250  | 0.5312        | 0.4235                |
| 0.4534  | 0.0773  | 0.5307        | 0.1456                |
| 0.4111  | 0.1192  | 0.5303        | 0.2247                |
| 0.3831  | 0.1497  | 0.5328        | 0.2809                |
| 0.2887  | 0.2470  | 0.5357        | 0.4611                |
| 0.0911  | 0.4629  | 0.5539        | 0.8356                |
| 0.4852  | 0.0449  | 0.5301        | 0.0847                |
| 0.0944  | 0.4811  | 0.5755        | 0.8360                |
| 0.3533  | 0.1783  | 0.5317        | 0.3354                |
| 0.3497  | 0.1812  | 0.5308        | 0.3413                |
| 0.2392  | 0.2964  | 0.5356        | 0.5534                |
| 0.3998  | 0.1304  | 0.5301        | 0.2459                |
| 0.0976  | 0.4652  | 0.5628        | 0.8266                |
| 0.3794  | 0.1506  | 0.5300        | 0.2842                |
| 0.1991  | 0.3332  | 0.5323        | 0.6260                |
| 0.2607  | 0.2769  | 0.5376        | 0.5151                |
| 0.3002  | 0.2298  | 0.5300        | 0.4336                |
| 0.1390  | 0.3962  | 0.5351        | 0.7403                |
| 0.3021  | 0.2292  | 0.5313        | 0.4314                |
| 0.4050  | 0.1279  | 0.5329        | 0.2399                |
| 0.1400  | 0.3921  | 0.5321        | 0.7368                |
| 0.0921  | 0.4478  | 0.5399        | 0.8294                |
| 0.3131  | 0.2173  | 0.5304        | 0.4097                |
| 0.4416  | 0.0896  | 0.5312        | 0.1687                |
| 0.2022  | 0.3328  | 0.5349        | 0.6220                |
| 0.4240  | 0.1067  | 0.5307        | 0.2011                |
| 0.2548  | 0.2751  | 0.5298        | 0.5191                |
| 0.2915  | 0.2402  | 0.5317        | 0.4518                |
| 0.4442  | 0.0861  | 0.5303        | 0.1623                |
| 0.4715  | 0.0653  | 0.5368        | 0.1216                |
| 0.0795  | 0.4600  | 0.5395        | 0.8526                |
| 0.5063  | 0.0473  | 0.5537        | 0.0855                |
| 0.4248  | 0.1068  | 0.5316        | 0.2009                |
| 0.1296  | 0.4090  | 0.5386        | 0.7594                |
| 0.2994  | 0.2320  | 0.5314        | 0.4365                |
| 0.0858  | 0.4649  | 0.5507        | 0.8442                |
| 0.1413  | 0.3891  | 0.5304        | 0.7336                |
| 0.1211  | 0.4346  | 0.5558        | 0.7820                |
| 0.4899  | 0.0420  | 0.5319        | 0.0790                |
| 0.3936  | 0.1388  | 0.5323        | 0.2607                |
| 0.3176  | 0.2133  | 0.5309        | 0.4017                |
| 0.2260  | 0.3046  | 0.5305        | 0.5740                |
| 0.3432  | 0.1912  | 0.5345        | 0.3578                |
| 0.3796  | 0.1522  | 0.5318        | 0.2863                |
| 0.2323  | 0.2976  | 0.5299        | 0.5617                |
| 0.4208  | 0.1095  | 0.5303        | 0.2065                |
| 0.1849  | 0.3585  | 0.5434        | 0.6597                |
| 0.1077  | 0.4319  | 0.5396        | 0.8004                |
| 0.0683  | 0.4888  | 0.5571        | 0.8774                |
| 0.3909  | 0.1423  | 0.5332        | 0.2669                |
| 0.2401  | 0.2992  | 0.5393        | 0.5548                |
| 0.2651  | 0.2657  | 0.5308        | 0.5006                |
| 0.3861  | 0.1454  | 0.5315        | 0.2736                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.2752  | 0.2655  | 0.5407        | 0.4911                |
| 0.1134  | 0.4315  | 0.5449        | 0.7919                |
| 0.0967  | 0.4889  | 0.5856        | 0.8348                |
| 0.3201  | 0.2101  | 0.5303        | 0.3963                |
| 0.1700  | 0.3628  | 0.5328        | 0.6809                |
| 0.3633  | 0.1669  | 0.5301        | 0.3148                |
| 0.1500  | 0.4093  | 0.5593        | 0.7318                |
| 0.4451  | 0.0851  | 0.5303        | 0.1605                |
| 0.2431  | 0.2939  | 0.5371        | 0.5473                |
| 0.4462  | 0.0861  | 0.5324        | 0.1618                |
| 0.3930  | 0.1394  | 0.5324        | 0.2618                |
| 0.3200  | 0.2099  | 0.5299        | 0.3961                |
| 0.3177  | 0.2123  | 0.5299        | 0.4006                |
| 0.4754  | 0.0563  | 0.5317        | 0.1058                |
| 0.1416  | 0.3904  | 0.5320        | 0.7337                |
| 0.1879  | 0.3551  | 0.5430        | 0.6540                |
| 0.1139  | 0.4221  | 0.5361        | 0.7875                |
| 0.1312  | 0.4015  | 0.5326        | 0.7537                |
| 0.2109  | 0.3317  | 0.5426        | 0.6112                |
| 0.2120  | 0.3222  | 0.5342        | 0.6032                |
| 0.4184  | 0.1120  | 0.5304        | 0.2111                |
| 0.4701  | 0.0620  | 0.5321        | 0.1165                |
| 0.2349  | 0.3049  | 0.5398        | 0.5648                |
| 0.4472  | 0.0832  | 0.5304        | 0.1569                |
| 0.4092  | 0.1242  | 0.5334        | 0.2328                |
| 0.3998  | 0.1338  | 0.5336        | 0.2507                |
| 0.3000  | 0.2298  | 0.5298        | 0.4337                |
| 0.2134  | 0.3264  | 0.5398        | 0.6046                |
| 0.4419  | 0.0925  | 0.5344        | 0.1732                |
| 0.1952  | 0.3444  | 0.5396        | 0.6383                |
| 0.1597  | 0.3883  | 0.5480        | 0.7086                |
| 0.1325  | 0.4187  | 0.5512        | 0.7596                |
| 0.4118  | 0.1190  | 0.5308        | 0.2241                |
| 0.3155  | 0.2147  | 0.5302        | 0.4049                |
| 0.1130  | 0.4362  | 0.5491        | 0.7943                |
| 0.3569  | 0.1731  | 0.5300        | 0.3266                |
| 0.2636  | 0.2672  | 0.5308        | 0.5033                |
| 0.0657  | 0.4953  | 0.5610        | 0.8829                |
| 0.1844  | 0.3520  | 0.5364        | 0.6562                |
| 0.3423  | 0.1921  | 0.5344        | 0.3594                |
| 0.2858  | 0.2452  | 0.5310        | 0.4618                |
| 0.3633  | 0.1669  | 0.5302        | 0.3147                |
| 0.1564  | 0.3889  | 0.5453        | 0.7132                |
| 0.1606  | 0.3808  | 0.5414        | 0.7034                |
| 0.2384  | 0.2933  | 0.5317        | 0.5517                |
| 0.4277  | 0.1038  | 0.5315        | 0.1953                |
| 0.1758  | 0.3615  | 0.5373        | 0.6728                |
| 0.1268  | 0.4078  | 0.5346        | 0.7628                |
| 0.1942  | 0.3432  | 0.5374        | 0.6386                |
| 0.3363  | 0.1985  | 0.5348        | 0.3711                |
| 0.3810  | 0.1495  | 0.5306        | 0.2818                |
| 0.1729  | 0.3670  | 0.5399        | 0.6797                |
| 0.1835  | 0.3601  | 0.5436        | 0.6625                |
| 0.5246  | 0.0119  | 0.5365        | 0.0222                |
| 0.2222  | 0.3130  | 0.5351        | 0.5848                |

Table A4. *Cont.*

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.2323  | 0.3001  | 0.5324        | 0.5637                |
| 0.2362  | 0.3059  | 0.5421        | 0.5643                |
| 0.3544  | 0.1770  | 0.5314        | 0.3330                |
| 0.2014  | 0.3375  | 0.5389        | 0.6263                |
| 0.4912  | 0.0505  | 0.5418        | 0.0933                |
| 0.4480  | 0.0843  | 0.5323        | 0.1584                |
| 0.3673  | 0.1649  | 0.5321        | 0.3098                |
| 0.0647  | 0.4870  | 0.5517        | 0.8828                |
| 0.2049  | 0.3358  | 0.5407        | 0.6211                |
| 0.0931  | 0.4438  | 0.5368        | 0.8266                |
| 0.1915  | 0.3413  | 0.5328        | 0.6406                |
| 0.4854  | 0.0468  | 0.5322        | 0.0879                |
| 0.1260  | 0.4274  | 0.5533        | 0.7724                |
| 0.1235  | 0.4426  | 0.5661        | 0.7818                |
| 0.1228  | 0.4234  | 0.5462        | 0.7751                |
| 0.1425  | 0.3884  | 0.5309        | 0.7316                |
| 0.4525  | 0.0778  | 0.5303        | 0.1466                |
| 0.1365  | 0.4065  | 0.5430        | 0.7487                |
| 0.4131  | 0.1186  | 0.5317        | 0.2230                |
| 0.4024  | 0.1278  | 0.5302        | 0.2411                |
| 0.2715  | 0.2697  | 0.5412        | 0.4984                |
| 0.0637  | 0.4823  | 0.5460        | 0.8834                |
| 0.2009  | 0.3292  | 0.5301        | 0.6211                |
| 0.1987  | 0.3404  | 0.5391        | 0.6315                |
| 0.2232  | 0.3082  | 0.5314        | 0.5800                |
| 0.2458  | 0.2843  | 0.5301        | 0.5363                |
| 0.1193  | 0.4242  | 0.5435        | 0.7805                |
| 0.1711  | 0.3746  | 0.5458        | 0.6864                |
| 0.2218  | 0.3220  | 0.5438        | 0.5921                |
| 0.1322  | 0.4194  | 0.5516        | 0.7604                |
| 0.2144  | 0.3184  | 0.5328        | 0.5976                |
| 0.1937  | 0.3460  | 0.5397        | 0.6411                |
| 0.2779  | 0.2526  | 0.5305        | 0.4762                |
| 0.4683  | 0.0626  | 0.5310        | 0.1180                |
| 0.1465  | 0.3921  | 0.5386        | 0.7281                |
| 0.2337  | 0.2992  | 0.5330        | 0.5614                |
| 0.1101  | 0.4323  | 0.5424        | 0.7970                |
| 0.2008  | 0.3431  | 0.5440        | 0.6308                |
| 0.2039  | 0.3262  | 0.5302        | 0.6153                |
| 0.2216  | 0.3098  | 0.5314        | 0.5830                |
| 0.1372  | 0.3982  | 0.5354        | 0.7437                |
| 0.3930  | 0.1369  | 0.5299        | 0.2584                |
| 0.1996  | 0.3327  | 0.5322        | 0.6251                |
| 0.3492  | 0.1818  | 0.5311        | 0.3424                |
| 0.2078  | 0.3226  | 0.5304        | 0.6082                |
| 0.3513  | 0.1829  | 0.5342        | 0.3424                |
| 0.4337  | 0.0985  | 0.5322        | 0.1851                |
| 0.2918  | 0.2409  | 0.5327        | 0.4523                |
| 0.3186  | 0.2142  | 0.5328        | 0.4020                |
| 0.3219  | 0.2107  | 0.5326        | 0.3956                |
| 0.2520  | 0.2814  | 0.5334        | 0.5276                |
| 0.3436  | 0.1861  | 0.5298        | 0.3513                |
| 0.4582  | 0.0811  | 0.5393        | 0.1504                |
| 0.3950  | 0.1358  | 0.5307        | 0.2558                |
| 0.0782  | 0.4870  | 0.5652        | 0.8617                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.1866  | 0.3596  | 0.5462        | 0.6584                |
| 0.1052  | 0.4524  | 0.5576        | 0.8113                |
| 0.1140  | 0.4518  | 0.5658        | 0.7985                |
| 0.4696  | 0.0608  | 0.5303        | 0.1146                |
| 0.4080  | 0.1240  | 0.5320        | 0.2331                |
| 0.2415  | 0.2911  | 0.5326        | 0.5465                |
| 0.1233  | 0.4368  | 0.5601        | 0.7798                |
| 0.3025  | 0.2342  | 0.5367        | 0.4363                |
| 0.4118  | 0.1191  | 0.5309        | 0.2244                |
| 0.4502  | 0.0831  | 0.5333        | 0.1558                |
| 0.1854  | 0.3492  | 0.5346        | 0.6531                |
| 0.3471  | 0.1828  | 0.5299        | 0.3449                |
| 0.3975  | 0.1327  | 0.5302        | 0.2502                |
| 0.2481  | 0.2886  | 0.5367        | 0.5377                |
| 0.0632  | 0.4831  | 0.5463        | 0.8844                |
| 0.3621  | 0.1693  | 0.5313        | 0.3186                |
| 0.2409  | 0.2964  | 0.5373        | 0.5517                |
| 0.2410  | 0.2889  | 0.5299        | 0.5451                |
| 0.4141  | 0.1192  | 0.5333        | 0.2235                |
| 0.4289  | 0.1016  | 0.5305        | 0.1916                |
| 0.1316  | 0.4362  | 0.5678        | 0.7683                |
| 0.1502  | 0.3878  | 0.5380        | 0.7208                |
| 0.2367  | 0.2991  | 0.5357        | 0.5583                |
| 0.3359  | 0.1975  | 0.5334        | 0.3703                |
| 0.1277  | 0.4140  | 0.5417        | 0.7643                |
| 0.4033  | 0.1288  | 0.5322        | 0.2421                |
| 0.1414  | 0.4115  | 0.5529        | 0.7442                |
| 0.1751  | 0.3700  | 0.5451        | 0.6788                |
| 0.4270  | 0.1037  | 0.5307        | 0.1954                |
| 0.3690  | 0.1644  | 0.5334        | 0.3082                |
| 0.2540  | 0.2823  | 0.5363        | 0.5263                |
| 0.1466  | 0.4046  | 0.5512        | 0.7341                |
| 0.1250  | 0.4203  | 0.5453        | 0.7708                |
| 0.0982  | 0.4356  | 0.5338        | 0.8161                |
| 0.0707  | 0.5199  | 0.5906        | 0.8803                |
| 0.1074  | 0.4441  | 0.5515        | 0.8053                |
| 0.1266  | 0.4445  | 0.5710        | 0.7784                |
| 0.1440  | 0.3977  | 0.5416        | 0.7342                |
| 0.1949  | 0.3446  | 0.5396        | 0.6387                |
| 0.3944  | 0.1355  | 0.5299        | 0.2557                |
| 0.1418  | 0.4033  | 0.5452        | 0.7399                |
| 0.1797  | 0.3538  | 0.5335        | 0.6631                |
| 0.2313  | 0.2998  | 0.5311        | 0.5644                |
| 0.1093  | 0.4602  | 0.5695        | 0.8081                |
| 0.4735  | 0.0565  | 0.5300        | 0.1067                |
| 0.3878  | 0.1449  | 0.5327        | 0.2720                |
| 0.4115  | 0.1206  | 0.5320        | 0.2266                |
| 0.1137  | 0.4399  | 0.5536        | 0.7946                |
| 0.4734  | 0.0568  | 0.5303        | 0.1072                |
| 0.1811  | 0.3627  | 0.5439        | 0.6669                |
| 0.4466  | 0.0835  | 0.5301        | 0.1575                |
| 0.3215  | 0.2125  | 0.5340        | 0.3979                |
| 0.1546  | 0.3853  | 0.5399        | 0.7136                |
| 0.0963  | 0.4551  | 0.5514        | 0.8253                |
| 0.1266  | 0.4445  | 0.5711        | 0.7783                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.3270  | 0.2055  | 0.5325        | 0.3858                |
| 0.1069  | 0.4398  | 0.5467        | 0.8045                |
| 0.0764  | 0.4911  | 0.5675        | 0.8654                |
| 0.2050  | 0.3298  | 0.5348        | 0.6167                |
| 0.1186  | 0.4383  | 0.5569        | 0.7870                |
| 0.0890  | 0.4734  | 0.5624        | 0.8418                |
| 0.1468  | 0.4045  | 0.5513        | 0.7337                |
| 0.1737  | 0.3637  | 0.5374        | 0.6768                |
| 0.3102  | 0.2278  | 0.5380        | 0.4234                |
| 0.3111  | 0.2220  | 0.5331        | 0.4165                |
| 0.3473  | 0.1826  | 0.5299        | 0.3446                |
| 0.3763  | 0.1546  | 0.5310        | 0.2912                |
| 0.1297  | 0.4181  | 0.5479        | 0.7632                |
| 0.0922  | 0.4559  | 0.5481        | 0.8318                |
| 0.1253  | 0.4286  | 0.5538        | 0.7738                |
| 0.4663  | 0.0642  | 0.5305        | 0.1210                |
| 0.3327  | 0.2009  | 0.5335        | 0.3765                |
| 0.3362  | 0.1986  | 0.5348        | 0.3713                |
| 0.2086  | 0.3214  | 0.5300        | 0.6064                |
| 0.3450  | 0.1894  | 0.5344        | 0.3544                |
| 0.2191  | 0.3224  | 0.5415        | 0.5954                |
| 0.1705  | 0.3622  | 0.5327        | 0.6799                |
| 0.1878  | 0.3552  | 0.5430        | 0.6541                |
| 0.4424  | 0.0881  | 0.5305        | 0.1660                |
| 0.1292  | 0.4283  | 0.5575        | 0.7683                |
| 0.4485  | 0.0826  | 0.5311        | 0.1555                |
| 0.0978  | 0.4650  | 0.5628        | 0.8262                |
| 0.1712  | 0.3744  | 0.5456        | 0.6862                |
| 0.1073  | 0.4439  | 0.5511        | 0.8054                |
| 0.0932  | 0.4742  | 0.5674        | 0.8358                |
| 0.1961  | 0.3433  | 0.5393        | 0.6365                |
| 0.2643  | 0.2685  | 0.5327        | 0.5039                |
| 0.3627  | 0.1671  | 0.5298        | 0.3154                |
| 0.1561  | 0.4011  | 0.5572        | 0.7199                |
| 0.2889  | 0.2452  | 0.5342        | 0.4591                |
| 0.2028  | 0.3338  | 0.5367        | 0.6221                |
| 0.3981  | 0.1354  | 0.5335        | 0.2539                |
| 0.4363  | 0.0961  | 0.5325        | 0.1805                |
| 0.2659  | 0.2696  | 0.5355        | 0.5035                |
| 0.1301  | 0.4223  | 0.5523        | 0.7645                |
| 0.1024  | 0.4513  | 0.5537        | 0.8151                |
| 0.3035  | 0.2287  | 0.5322        | 0.4297                |
| 0.1088  | 0.4337  | 0.5425        | 0.7995                |
| 0.4555  | 0.0754  | 0.5309        | 0.1420                |
| 0.3611  | 0.1702  | 0.5313        | 0.3203                |
| 0.4268  | 0.1045  | 0.5313        | 0.1966                |
| 0.1886  | 0.3572  | 0.5458        | 0.6544                |
| 0.2336  | 0.3088  | 0.5424        | 0.5693                |
| 0.3790  | 0.1538  | 0.5329        | 0.2887                |
| 0.3178  | 0.2163  | 0.5341        | 0.4050                |
| 0.1266  | 0.4186  | 0.5452        | 0.7677                |
| 0.5024  | 0.0289  | 0.5312        | 0.0544                |
| 0.2748  | 0.2575  | 0.5323        | 0.4837                |
| 0.3500  | 0.1842  | 0.5342        | 0.3448                |
| 0.0892  | 0.4552  | 0.5443        | 0.8362                |

Table A4. Cont.

| $S_i^+$ | $S_i^-$ | $S_i^+ S_i^-$ | $S_i^-/(S_i^+ S_i^-)$ |
|---------|---------|---------------|-----------------------|
| 0.2443  | 0.2970  | 0.5413        | 0.5487                |
| 0.3966  | 0.1404  | 0.5370        | 0.2615                |
| 0.2492  | 0.2842  | 0.5335        | 0.5328                |
| 0.0978  | 0.4741  | 0.5719        | 0.8289                |
| 0.3617  | 0.1719  | 0.5336        | 0.3221                |
| 0.2170  | 0.3204  | 0.5373        | 0.5962                |
| 0.3361  | 0.1973  | 0.5334        | 0.3699                |
| 0.3635  | 0.1689  | 0.5323        | 0.3173                |
| 0.2763  | 0.2585  | 0.5349        | 0.4833                |
| 0.1546  | 0.4031  | 0.5577        | 0.7228                |
| 0.3123  | 0.2207  | 0.5330        | 0.4141                |
| 0.1383  | 0.4156  | 0.5539        | 0.7503                |
| 0.2272  | 0.3093  | 0.5365        | 0.5766                |
| 0.1802  | 0.3639  | 0.5442        | 0.6688                |
| 0.4109  | 0.1209  | 0.5318        | 0.2274                |
| 0.4289  | 0.1026  | 0.5315        | 0.1930                |
| 0.1923  | 0.3435  | 0.5358        | 0.6412                |

## References

- Agosto, Arianna, Paola Cerchiello, and Paolo Giudici. 2023. Bayesian learning models to measure the relative impact of ESG factors on credit ratings. *International Journal of Data Science and Analytics*, 1–12. [\[CrossRef\]](#)
- Ahelegbey, Daniel Felix, and Paolo Giudici. 2024. Multidimensional Inequality Metrics for Sustainable Business Development. *Mathematics* 12: 3633. [\[CrossRef\]](#)
- Aronczyk, Melissa, Patrick McCurdy, and Chris Russill. 2024. Greenwashing, net-zero, and the oil sands in Canada: The case of Pathways Alliance. *Energy Research and Social Science* 112: 103502. [\[CrossRef\]](#)
- Arouri, Mohamed, Sadok El Ghoul, and Mathieu Gomes. 2021. Greenwashing and product market competition. *Finance Research Letters* 42: 101927. [\[CrossRef\]](#)
- Bilgili, Faik, Fulya Zarali, Miraç Fatih Ilgün, Cüneyt Dumrul, and Yasemin Dumrul. 2022. The evaluation of renewable energy alternatives for sustainable development in Turkey using intuitionistic fuzzy-TOPSIS method. *Renewable Energy* 189: 1443–58. [\[CrossRef\]](#)
- Bosone, Constanza, Stefania Maria Bogliardi, and Paolo Giudici. 2022. Are ESG Female? The Hidden Benefits of Female Presence on Sustainable Finance. *Review of Economic Analysis* 14: 253–74. [\[CrossRef\]](#)
- Bosone, Costanza, Paola Cerchiello, and Yana Kostiuk. 2024. Not all that glitters is green: Empirical evidence from the Eurostoxx600 on stakeholders' perception of greenwashing. *International Journal of Data Science and Analytics*, 1–19. [\[CrossRef\]](#)
- Budzanowska-Drzewiecka, Małgorzata, and Anita Proszowska. 2024. Greenwashing. *Reference Module in Social Sciences*. [\[CrossRef\]](#)
- Chen, Pengyu, and Abd Alwahed Dagestani. 2023. Greenwashing behavior and firm value—From the perspective of board characteristics. *Corporate Social Responsibility and Environmental Management* 30: 2330–43. [\[CrossRef\]](#)
- Henao-Rodríguez, Carolina, Jenny Paola Lis-Gutiérrez, and Harold Delfín Angulo-Bustanza. 2024. Unveiling greenwashing in Colombian manufacturing: A machine learning approach. *Research in Globalization* 8: 100196. [\[CrossRef\]](#)
- Huang, Fu, Jiawei Wu, Zhanglan Wu, Weiqiong Fu, Ping Guo, Zhe Zhang, and Farina Khan. 2025. Unpacking greenwashing: The impact of environmental attitude, proactive strategies, and network embeddedness on corporate environmental performance. *Journal of Environmental Management* 373: 123625. [\[CrossRef\]](#) [\[PubMed\]](#)
- Jiang, Cuixia, Xiuxiu Li, Qifa Xu, and Junhang Liu. 2024. Does environmental protection tax impact corporate ESG greenwashing? A quasi-natural experiment in China. *Economic Analysis and Policy* 84: 774–86. [\[CrossRef\]](#)
- Koch, Thomas, and Nora Denner. 2025. Different shades of green deception. Greenwashing's adverse effects on corporate image and credibility. *Public Relations Review* 51: 102521. [\[CrossRef\]](#)
- Koemtzopoulos, Dimitrios, Georgia Zournatzidou, and Nikolaos Sariannidis. 2025. Can Cryptocurrencies Be Green? The Role of Stablecoins Toward a Carbon Footprint and Sustainable Ecosystem. *Sustainability* 17: 483. [\[CrossRef\]](#)
- Li, Jiao. 2024. Controlling shareholders' stock pledges and greenwashing—Evidence from China. *Finance Research Letters* 69: 106227. [\[CrossRef\]](#)
- Li, Menghan, and Qi Chen. 2024. Executive pay gap and corporate ESG greenwashing: Evidence from China. *International Review of Financial Analysis* 95: 103375. [\[CrossRef\]](#)

- Li, Weiping, Chang Shi, Zhongyi Xiao, and Xuezhi Zhang. 2024a. Bridging the green gap: How digital financial inclusion affects corporate ESG greenwashing. *Finance Research Letters* 69: 106018. [\[CrossRef\]](#)
- Li, Yan, Jiupeng Zhang, Yinzhang He, and Zhe Li. 2023. Suitability evaluation method for preventive maintenance of asphalt pavement based on interval-entropy weight-TOPSIS. *Construction and Building Materials* 409: 134098. [\[CrossRef\]](#)
- Li, Yunqian, and Jun Xiao. 2025. The effect of institutional investors' site visits on corporate greenwashing behavior. *International Review of Economics & Finance* 97: 103818. [\[CrossRef\]](#)
- Li, Zhibin, Shenpei Miao, and Lianyan Xu. 2024b. Digital transformation and environmental, social, and governance greenwashing: Evidence from China. *Journal of Environmental Management* 365: 121460. [\[CrossRef\]](#)
- Liu, Changyu, Wanrong Gong, Guanglong Dong, and Qiang Ji. 2024a. Regulation of environmental, social and governance disclosure greenwashing behaviors considering the risk preference of enterprises. *Energy Economics* 135: 107637. [\[CrossRef\]](#)
- Liu, Jing Yue, Quan Lei, Ruojin Li, and Yue Jun Zhang. 2024b. Resistance or motivation? Impact of climate risk on corporate greenwashing: An empirical study of Chinese enterprises. *Global Finance Journal* 62: 101030. [\[CrossRef\]](#)
- Liu, Yuying. 2024. Climate risk perception, female directors and greenwashing. *Finance Research Letters* 70: 106291. [\[CrossRef\]](#)
- Luu, Nguyen H., Chau Le, Hiep N. Luu, and Dung T. K. Nguyen. 2025. Does mandatory greenhouse gas emissions reporting program deter corporate greenwashing? *Journal of Environmental Management* 373: 123740. [\[CrossRef\]](#)
- Ma, Yiming, and Muhammad Ishfaq Ahmad. 2024a. Do board characteristics impact greenwashing? Moderating role of CSR committee. *Heliyon* 10: e38743. [\[CrossRef\]](#)
- Moodaley, Wayne, and Arnesh Telukdarie. 2023. Greenwashing, Sustainability Reporting, and Artificial Intelligence: A Systematic Literature Review. *Sustainability* 15: 1481. [\[CrossRef\]](#)
- Nepal, Rabindra, Youyi Deng, Kangyi Dong, and Stéphane Goutte. 2025. Does executive gender diversity culture inhibit corporate greenwashing behavior? The effect of informal institutions. *International Review of Financial Analysis* 97: 103888. [\[CrossRef\]](#)
- Papagiannakis, Giorgos E., Pavlos A. Vlachos, Christos D. Koritos, and George I. Kassinis. 2024. Are publicly traded tourism and hospitality providers greenwashing? *Tourism Management* 103: 104893. [\[CrossRef\]](#)
- Pizzetti, Marta, Lucia Gatti, and Peter Seele. 2021. Firms Talk, Suppliers Walk: Analyzing the Locus of Greenwashing in the Blame Game and Introducing 'Vicarious Greenwashing'. *Journal of Business Ethics* 170: 21–38. [\[CrossRef\]](#)
- Ruiz-Blanco, Silvia, Silvia Romero, and Belen Fernandez-Feijoo. 2022. Green, blue or black, but washing—What company characteristics determine greenwashing? *Environment, Development and Sustainability* 24: 4024–45. [\[CrossRef\]](#)
- Saeed, Asif, Muhammad Wasif Zafar, Riadh Manita, and Noor Zahid. 2024. The role of audit quality in waste management behavior. *International Review of Economics and Finance* 89: 1203–16. [\[CrossRef\]](#)
- Sariannidis, Nikolaos, Grigoris Giannarakis, Eleni Zafeiriou, and Ioannis Billias. 2016. The Effect of Crude Oil Price Moments on Socially Responsible Firms in Eurozone. *International Journal of Energy Economics and Policy* 6: 356–63.
- Sati, Zümüt Ecevit. 2024. Comparison of the criteria affecting the digital innovation performance of the European Union (EU) member and candidate countries with the entropy weight-TOPSIS method and investigation of its importance for SMEs. *Technological Forecasting and Social Change* 200: 123094. [\[CrossRef\]](#)
- Shahrour, Mohamad H., Mohamed Arouri, Dung V. Tran, and Sandeep Rao. 2024. Carbon consciousness: The influence of CEO ownership. *Journal of Environmental Management* 364: 121455. [\[CrossRef\]](#)
- Sun, Yabin. 2024. Bank competition and firm greenwashing: Evidence from China. *Finance Research Letters* 63: 105279. [\[CrossRef\]](#)
- Testa, Francesco, Olivier Boiral, and Fabio Iraldo. 2018. Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? *Journal of Business Ethics* 147: 287–307. [\[CrossRef\]](#)
- Teti, Emanuele, Leonardo L. Etro, and Lorenzo Pausini. 2024. Does greenwashing affect Company's stock Price? Evidence from Europe. *International Review of Financial Analysis* 93: 103195. [\[CrossRef\]](#)
- Tong, Youxia, Yeng Wai Lau, and Siti Manisah Binti Ngali. 2024. Do pilot zones for green finance reform and innovation avoid ESG greenwashing? Evidence from China. *Heliyon* 10: e33710. [\[CrossRef\]](#)
- Tziritidou-Chatzopoulou, Maria, Georgia Zournatzidou, Eirini Orovou, Maria Lithoxopoulou, Eftychia Drogouti, George Sklavos, Evangelia Antoniou, and Christos Tsakalidi. 2024. Evaluating Malnutrition Practices and Mother's Education on Children Failure to Thrive Symptoms Using Entropy-Weight and TOPSIS Method. *Children* 11: 903. [\[CrossRef\]](#)
- Wang, Hu, and Hong Shen. 2024. Self-restraint or external supervision: Green bond issuance and greenwashing. *Research in International Business and Finance* 70: 102402. [\[CrossRef\]](#)
- Wang, Jianye, Yubing Ke, Lingxia Sun, and Huifen Liu. 2024a. Speculative culture and corporate greenwashing: Evidence from China. *International Review of Financial Analysis* 95: 103447. [\[CrossRef\]](#)
- Wang, Yuxi, Fangjia Hu, and Yunyun Wang. 2024b. Analyst coverage and greenwashing: Evidence from Chinese A-Share listed corporations. *International Review of Economics and Finance* 94: 103423. [\[CrossRef\]](#)
- Yao, Kainan, Xiaojun Ma, and Jingying Zhang. 2024. Green disguise or real action? The truth behind corporate greenwashing under stringent climate policy. *Energy Economics*, 108059. [\[CrossRef\]](#)

- Yin, Lei, and Yuanyuan Yang. 2024. How does digital finance influence corporate greenwashing behavior? *International Review of Economics and Finance* 93: 359–73. [\[CrossRef\]](#)
- Yu, Ellen Pei yi, Bac Van Luu, and Catherine Huirong Chen. 2020. Greenwashing in environmental, social and governance disclosures. *Research in International Business and Finance* 52: 101192. [\[CrossRef\]](#)
- Zhang, Dongyang. 2022. Green financial system regulation shock and greenwashing behaviors: Evidence from Chinese firms. *Energy Economics* 111: 106064. [\[CrossRef\]](#)
- Zhang, Dongyang. 2024a. The pathway to curb greenwashing in sustainable growth: The role of artificial intelligence. *Energy Economics* 133: 107562. [\[CrossRef\]](#)
- Zhang, Xiaoqing. 2024b. Can retail investor activism inhibit corporate greenwashing behavior: Evidence from investor interactive platforms in China. *Journal of Cleaner Production* 461: 142617. [\[CrossRef\]](#)
- Zhang, Zhenbo, Xinran Zheng, Qiuting Lv, and Xiaohua Meng. 2025. How institutional pressures influence corporate greenwashing strategies: Moderating effects of campaign-style environmental enforcement. *Journal of Environmental Management* 373: 123914. [\[CrossRef\]](#)
- Zhao, Xinlu, Xiaohui Huang, Fang Liu, and Lin Pan. 2024. Executive power discrepancy and corporate ESG greenwashing. *International Review of Financial Analysis* 96: 103533. [\[CrossRef\]](#)
- Zournatzidou, Georgia, George Sklavos, Konstantina Ragazou, and Nikolaos Sariannidis. 2024. Anti-Competition and Anti-Corruption Controversies in the European Financial Sector: Examining the Anti-ESG Factors with Entropy Weight and TOPSIS Methods. *Journal of Risk and Financial Management* 17: 492. [\[CrossRef\]](#)

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.