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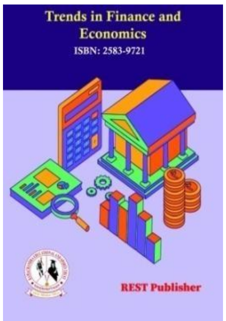

Analyzing Corporate Social Responsibility Performance with the Grey Relation Coefficient Method

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Abstract: *Corporate Social Responsibility (CSR), often abbreviated as CSR, is poised to take on a pivotal role in corporate reporting. It has become a standard practice for every company to establish CSR policies and produce annual reports that outline their CSR endeavors. This approach allows for the differentiation between socially responsible conduct and actions that lack social responsibility, facilitating their identification. Presently, CSR is acknowledged as a sophisticated and globally accepted concept that has undergone systematic evolution and development. It has become a globally acknowledged language and perspective that is gaining increasing importance. In this contemporary era, stakeholders are expected to prioritize more than mere profit generation and adherence to legal requirements; In addition to their CSR efforts, companies are expected to exhibit a commitment to business growth. CSR has now become an intrinsic component of contemporary business operations. In terms of its social impact, CSR research serves as a means to comprehend the influence of businesses on society and the contributions they offer. This research delves into how businesses champion sustainable practices, confront social and environmental issues, and contribute to the improvement of local communities. Research illuminates the beneficial influence that corporations can exert on society by scrutinizing CSR initiatives and their results. The engagement of stakeholders is a key focus of CSR research, emphasizing the importance of involving diverse stakeholders such as employees, customers, suppliers, local communities, and investors. This research investigates how businesses interact with and respond to these stakeholders, promoting cooperation, open communication, and the development of trust. Through the cultivation of stronger relationships and the exploration of effective strategies for engaging stakeholders, businesses have the opportunity to enhance their social acceptance and credibility. Sustainability is a core focus of CSR research, as it contributes significantly to the progress of sustainable business practices. This research delves into how companies incorporate resource efficiency, environmental concerns, and measures to combat climate change into their everyday activities. By identifying successful sustainability initiatives, CSR research aids in the formulation of best practices and promotes the transition toward a more sustainable economy. The Weighted Point Method (WPM), originally introduced by Deng to address challenges in Multiple Criteria Decision Making (MCDM), offers a framework that explores the sequential relationships, data types, and geometric patterns among measurable impacts in a communication evaluation model. In this particular context, the alternatives under consideration are Community relations, Diversity aspects, Employee relations, Ecological environment, and Product aspects. The evaluation parameters encompass Ownership by family, Ownership by founder, Ownership by mutual funds, Ownership by banks and insurance firms, Ownership by employees (ESOP), Family CEO (represented as a dummy variable), Founder CEO (also a dummy variable), Debt/equity ratio, and Return on assets. The findings of the evaluation indicate that the Founder CEO (represented as a dummy variable) attains the highest ranking, while ownership by banks and insurance firms secures the lowest rank in the assessment.*

Keywords: *Social Responsibility, Ecological environment, Community relations, MCDM.*

1. INTRODUCTION

Over the past few decades, Corporate Social Responsibility (CSR) has undergone significant evolution, transforming into a multifaceted and intricate concept that plays an increasingly vital role in modern corporate decision-making. While CSR debates were once limited to a small group of academics, today, feedback and discussions on CSR are central to many corporate actions. CSR, which we'll refer to as such throughout this discussion, is a business practice that is now dominant in corporate reporting. CSR broadly refers to a company's responsibility, which can be both universal, involving the relationship between companies, governments, and individual citizens globally and domestically, and local, focusing on the connection between a company and the local community in which it operates. Another perspective highlights the relationship between a company and its shareholders, emphasizing individual interests rather than collective ones.

Social accountability is a fundamental principle that establishes a contract between all stakeholders in society, and it is a vital requirement for a functioning civil society. The concept of Corporate Social Responsibility (CSR) can be likened to the idea of citizenship, but it goes beyond fulfilling obligations solely to the present community members. It also encompasses a responsibility towards future generations. In the context of international trade and investment, there are recommendations for advancing policies that promote sustainable development on a global scale. This entails a commitment from companies to contribute to sustainable development through various means, such as economic policies, addressing climate change and energy concerns, implementing effective measurement and assessment processes, and practicing sustainable natural resource management. Since its inception, CSR has steadily gained prominence and grown in significance. Today, CSR is not only an integral part of contemporary business practices but has also evolved into a universally recognized and widely accepted concept. It has become a global language and perspective that places a growing emphasis on stakeholders. In the current decade, modern businesses are expected to go beyond mere profit-making and legal compliance; they are also anticipated to prioritize business development while ensuring ethical conduct.

This shift in focus toward CSR has become essential as business ethics corruption has become more prevalent. Rather than being solely focused on philanthropy, CSR now encompasses social relations and addresses issues related to illegal corporate behavior, its causes, and remedies, garnering public attention. While economic growth has continued to expand and benefit society, it has also brought about negative consequences and increased general societal problems, with associated costs. The financial sector, in particular, has witnessed a few challenges in this regard. Governments play a pivotal role in addressing these issues, and it is expected that they will take steps to rectify the situation. Businesses are increasingly investing more resources in optimizing their behavior and welfare to rebuild their character. This involves not only adhering to laws and regulations but also goes beyond to consider the broader common good and the reduction of negative externalities. In this context, Corporate Social Responsibility (CSR) plays a crucial role. Theoretical and empirical research efforts in economics have been explored and integrated into a coherent framework, establishing a comprehensive understanding of CSR research. This research spans multiple disciplines, including management, political science, sociology, law, and economics, providing a unique perspective for integrated analysis. The general nature of social or environmental performance is a key consideration, and it is essential to understand the fundamental mechanism of how corporations manage the economy and deliver public goods.

The integration of behavioral economics and sports principles within corporations involves considering the interests of both shareholders and stakeholders and formulating strategies accordingly. This integration touches upon various aspects, such as information economics, contract theory, and the analysis of Corporate Social Responsibility (CSR), particularly in addressing information asymmetry. It assesses the effects of CSR on communication, incorporating both quantitative and experimental economic approaches to determine how CSR impacts market structures. To facilitate the employee selection process, the Multiple Criteria Decision Making (MCM) method is utilized. This method employs graphical representations based on linguistic factors to describe individuals' capabilities in achieving common organizational goals. By implementing a competency-based graphical system, the best-suited employee can be identified based on their overall score.Once a thorough analysis of the gathered information is conducted, the final selection of the most suitable candidate is made. To enhance the efficiency of this process, a step-by-step integration approach is recommended. This framework serves as a guideline for personnel evaluation and selection, ensuring that the right candidates are matched with the appropriate positions within the organization. The primary focus of this study centers on the applicability of grey sets theory to human evaluation and decision-making tasks. The logic behind the Weighted Point Method (WPM) provides a means to define the natural judgments made by our reasoning system, devoid of dependence on artificial procedures. Consequently, it emerges as a valuable instrument for comprehending human decision-making processes. The core aim of this research is to illustrate how grey sets logic can be effectively employed to unveil the innate uncertainties inherent in people's actions and thought processes, particularly within the realm of personnel evaluation and selection. In response to this challenge, the study presents a method that employs multi-factor, competency-based metrics organized within a hierarchical structure. The goal of this approach is to mitigate subjectivity in the evaluation and selection of competent employees. The suggested WPM assesses employee performance from both a strategic and tactical viewpoint by combining vital competencies with employee performance data. This comprehensive approach strives to enhance the objectivity and efficiency of personnel evaluation and selection procedures.

2. MATERIALS & METHODS

Community relations: Community relations in the business context entail building mutually advantageous partnerships with the communities where a company conducts its operations. Such interactions are geared towards cultivating robust relationships and goodwill by offering contributions in the form of time, financial support, or products. This engagement not only benefits the community but also enhances the company's reputation and social impact.

Diversity aspects: Diversity encompasses a wide range of distinctions, such as variances in ethnic, socioeconomic, geographic, academic, and professional backgrounds. It also includes differences in educational and social experiences, religious beliefs, political ideologies, sexual orientations, traditions, and life experiences. Acknowledging and embracing diversity in these aspects is essential for fostering inclusion and understanding in various social and organizational contexts.

Employee relations: Employee relations often referred to as industrial relations or employment relations, encompass the study of the dynamics within the employment relationship. This multidisciplinary field delves into the intricate interactions involving employers, employees, labor unions, and government entities. It seeks to understand and manage the various aspects of the working relationship, including issues related to employment contracts, workplace conditions, disputes, and labor rights, with the aim of promoting harmonious and productive workplaces.

Ecological environment: An "ecosystem" is a distinct biological system that encompasses all living beings, including humans, as well as their interactions with the environment, such as air, water, and inanimate components like mineral soil. Ecosystems have no fixed boundaries and are characterized by the dynamic interplay between various elements.

Product aspects: Product aspects encompass a range of features related to a product, including its price, name, attributes, quality, design, and more. While traditionally associated with physical objects like food or chairs, the concept of a product has evolved to include intangible elements such as services and ideas.

WPM Method: The Weighted Point Method (WPM) is a decision-making tool commonly used in project management and procurement to evaluate and select suppliers or contractors. It involves assigning weights to various criteria and then scoring potential suppliers or contractors based on how well they meet these criteria. The WPM method is useful for making objective and systematic decisions, especially when choosing suppliers for complex projects or purchases. The Weighted Point Method (WPM) provides a structured and systematic approach for decision-makers when selecting suppliers or contractors. The process begins with the careful selection of essential criteria, which can range from cost and quality to reliability and experience. Decision-makers then assign weights to each criterion, indicating their relative importance. These weights are often determined through collaborative discussions among stakeholders, with higher values signifying greater significance.

Potential suppliers or contractors are subsequently assessed and assigned scores for how well they align with each criterion. These scores, typically on a scale such as 1 to 5, reflect the degree of compliance or satisfaction. The magic of the WPM method lies in its calculation of weighted scores, achieved by multiplying the scores by their respective weights and then summing them up. This results in a clear, numerical representation of each supplier or contractor's overall suitability. Ultimately, the supplier or contractor with the highest weighted score emerges as the preferred choice, ensuring that the selection aligns with the specific needs and priorities of the project or procurement process. The WPM method streamlines the decision-making process, making it easier to compare and contrast different options and select the most suitable one. The WPM method provides a structured approach for supplier or contractor selection, making it easier to compare and contrast different options. It is essential in cases where there are multiple criteria to consider, and these criteria carry different levels of importance. This method helps ensure that the supplier or contractor chosen aligns with the specific needs and priorities of the project or procurement process.

3. RESULT AND DISCUSSION

TABLE 1. Corporate social responsibility

	Community relations	Diversity aspects	Employee relations	Ecological environment	Product aspects
Ownership by family	23.24	54.36	58.73	39.53	15.42
Ownership by founder	29.12	45.13	57.13	42.97	58.43
Ownership by mutual funds	43.12	35.76	49.32	22.58	36.12
ownership by banks and insurance firms	34.75	65.45	73.13	28.28	32.14
Ownership by employees (ESOP)	28.13	71.43	51.47	36.41	43.12
Family CEO (dummy)	23.14	45.36	76.14	25.12	48.15
Founder CEO (dummy)	25.16	73.64	27.42	17.42	27.43

Table 1 presents the evaluation of Corporate Social Responsibility for alternative factors, including Community relations, Diversity aspects, Employee relations, Ecological environment, and Product aspects. The evaluation parameters considered in this table are Ownership by family, Ownership by founder, Ownership by mutual funds, Ownership by banks and insurance firms, Ownership by employees (ESOP), Family CEO (represented as a dummy variable), Founder CEO (also a dummy variable), Debt/equity ratio, and Return on assets. This table likely provides a structured assessment of how these CSR factors relate to and are influenced by various ownership and management characteristics within an organization.

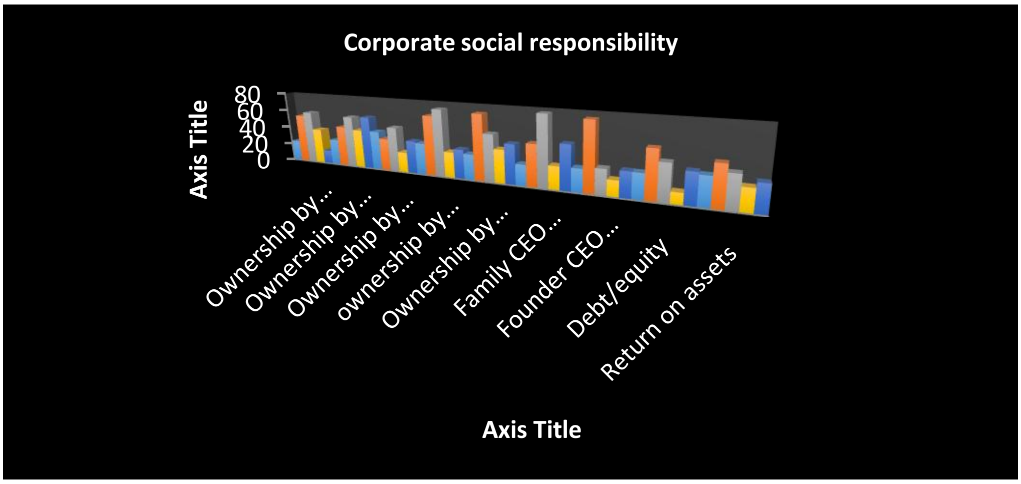

FIGURE 1. Corporate social responsibility

In Figure 1, a comprehensive overview of Corporate Social Responsibility (CSR) factors is depicted, shedding light on the relative performance of various ownership and management attributes in the context of CSR assessments. Notably, in the domain of Community Relations, Ownership by mutual funds emerges as the frontrunner, while the presence of a Family CEO (dummy) garners the lowest rating. Similarly, Diversity Aspects highlight the prominent role of Founder CEO (dummy), which secures the highest ranking, while Ownership by mutual funds registers the lowest score. In the sphere of Employee Relations, ownership by banks and insurance firms takes precedence with the highest value, with Founder CEO (dummy) trailing as the least favorable option. Within the domain of Ecological Environment, Ownership by family stands out as the top performer, whereas Debt/equity ranks as the least favorable metric. Lastly, in Product Aspects, Ownership by the founder is the standout leader, contrasting with Ownership by family, which records the lowest score. These findings unveil the varying influence of different ownership and management components on CSR factors, offering valuable insights into the intricate landscape of corporate social responsibility.

TABLE 2. Performance value

	Community relations	Diversity aspects	Employee relations	Product aspects	Ecological environment
Ownership by family	0.53896	1.26067	1.36201	0.26391	0.44068
Ownership by founder	0.67532	1.04661	1.32491	1.00000	0.40540
Ownership by mutual funds	1.00000	0.82931	1.14378	0.61818	0.77148
ownership by banks and insurance firms	0.80589	1.51786	1.69596	0.55006	0.61598
Ownership by employees (ESOP)	0.65237	1.65654	1.19365	0.73798	0.47844
Family CEO (dummy)	0.53664	1.05195	1.76577	0.82406	0.69347
Founder CEO (dummy)	0.58349	1.70779	0.63590	0.46945	1.00000

Table 2 offers a comprehensive view of the performance metrics associated with different ownership and management structures in a company, across a range of critical categories such as community relations, diversity aspects, employee relations, product aspects, and the ecological environment. The data reveals valuable insights into how each ownership and leadership type impacts the company's performance. For instance, ownership by mutual funds emerges as a strong performer, excelling in most categories, while founder-owned companies score exceptionally well in product aspects. Conversely, family-owned businesses display strengths in employee relations and ecological concerns. Understanding these performance values is instrumental in making informed decisions for the future of a company, taking into account the specific strengths and weaknesses of each ownership and leadership structure.

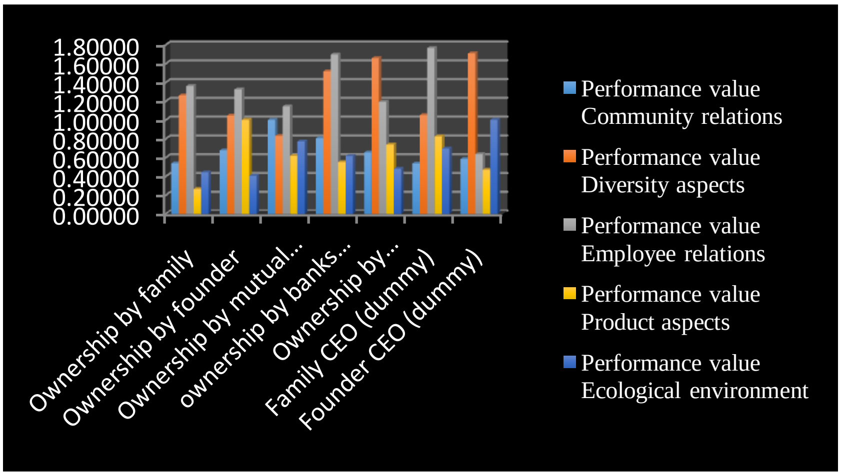

FIGURE 2. Performance value

Figure 2 provides performance values across different categories for various ownership and management structures within a company. The categories evaluated include community relations, diversity aspects, employee relations, product aspects, and the ecological environment. The data in the table offers insights into how these performance metrics vary depending on the ownership and leadership of the company.

TABLE 3. Weight

	Community relations	Diversity aspects	Employee relations	Product aspects	Ecological environment
Ownership by family	0.20	0.20	0.20	0.20	0.20
Ownership by founder	0.20	0.20	0.20	0.20	0.20
Ownership by mutual funds	0.20	0.20	0.20	0.20	0.20
ownership by banks and insurance firms	0.20	0.20	0.20	0.20	0.20
Ownership by employees (ESOP)	0.20	0.20	0.20	0.20	0.20
Family CEO (dummy)	0.20	0.20	0.20	0.20	0.20
Founder CEO (dummy)	0.20	0.20	0.20	0.20	0.20

Table 3 outlines the weight or importance assigned to each of the specified categories, including community relations, diversity aspects, employee relations, product aspects, and the ecological environment, for various ownership and management structures within a company. In this table, each category is assigned equal weight, signifying that all these factors are considered of equal importance in evaluating the performance and decision-making process related to the respective ownership and leadership types. The equal distribution of weight across these categories suggests a balanced approach when assessing the impact of different ownership and management structures on a company's overall performance.

TABLE 4. Weighted normalized decision matrix

	Community relations	Diversity aspects	Employee relations	Product aspects	Ecological environment
Ownership by family	0.88371	1.04742	1.06374	0.76611	0.84884
Ownership by founder	0.92449	1.00915	1.05788	1.00000	0.83479
Ownership by mutual funds	1.00000	0.96326	1.02723	0.90829	0.94943
ownership by banks and insurance firms	0.95776	1.08704	1.11143	0.88732	0.90764
Ownership by employees (ESOP)	0.91812	1.10622	1.03604	0.94104	0.86291
Family CEO (dummy)	0.88295	1.01018	1.12044	0.96204	0.92941
Founder CEO (dummy)	0.89786	1.11298	0.91344	0.85964	1.00000

Table 4 presents a weighted normalized decision matrix that combines the performance values from Table 2 with the weightings from Table 3. This matrix reflects the performance scores for each ownership and management structure after taking into account the assigned importance or weight to each category. For example, in the case of ownership by mutual funds, it achieves a score of 1.00000 in community relations, 0.96326 in diversity aspects, 1.02723 in employee relations, 0.90829 in product aspects, and 0.94943 in the ecological environment, considering the equal weightings of all these categories.This matrix allows for a more comprehensive assessment of each ownership and management structure's performance by considering the specific importance assigned to each category. It helps in making informed decisions based on the weighted impact of these structures on various aspects of a company's operations.

TABLE 5. Preference Score

	Preference Score
Ownership by family	0.64030
Ownership by founder	0.82390
Ownership by mutual funds	0.85330
ownership by banks and insurance firms	0.93192
Ownership by employees (ESOP)	0.85445
Family CEO (dummy)	0.89355
Founder CEO (dummy)	0.78467

Table 5 provides the preference scores for each ownership and management structure, which are derived from the weighted normalized decision matrix presented in Table 4. These preference scores represent the overall desirability or performance of each ownership and leadership type based on the assigned weights and actual performance values. From the provided data, ownership by banks and insurance firms has the highest preference score at 0.93192, suggesting it is the most preferred or desirable option. Following closely are ownership by employees (ESOP) with a score of 0.85445 and ownership by mutual funds with a score of 0.85330. Ownership by family has a preference score of 0.64030, and ownership by founder has a score of 0.82390. Family CEO (dummy) has a preference score of 0.89355, while Founder CEO (dummy) has a score of 0.78467.

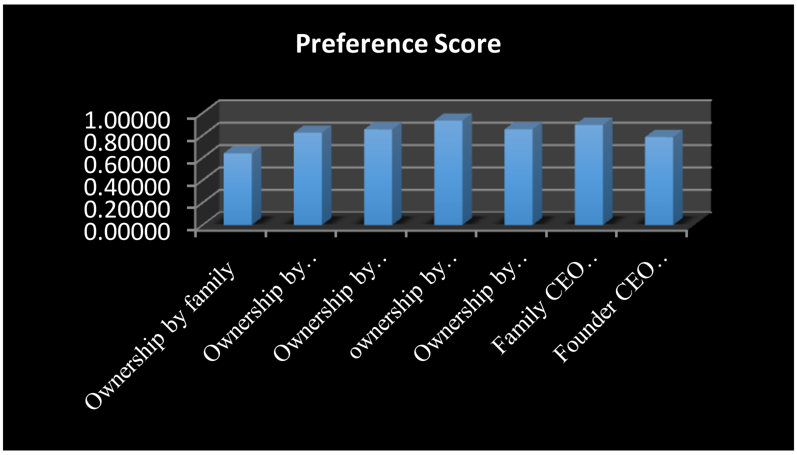

FIGURE 2. Preference Score

TABLE6. Rank

	Rank
Ownership by family	7
Ownership by founder	5
Ownership by mutual funds	4
ownership by banks and insurance firms	1
Ownership by employees (ESOP)	3
Family CEO (dummy)	2
Founder CEO (dummy)	6

Table 6 offers a concise yet informative ranking of various ownership and management structures within a company, based on their preference scores derived from the weighted and normalized decision matrix. The rankings serve as a practical tool for decision-makers, clearly illustrating the order of desirability or performance for each structure. Notably, The top spot is guaranteed by ownership by banks and insurance companies, signifying it as the most preferred choice. Following closely are family CEOs and ownership by employees (ESOP), ranking second and third, respectively. These rankings provide valuable insights into the impact of different ownership and leadership types on a company's performance and can assist in informed decision-making processes, enabling organizations to choose the most suitable structure for their specific goals and objectives.

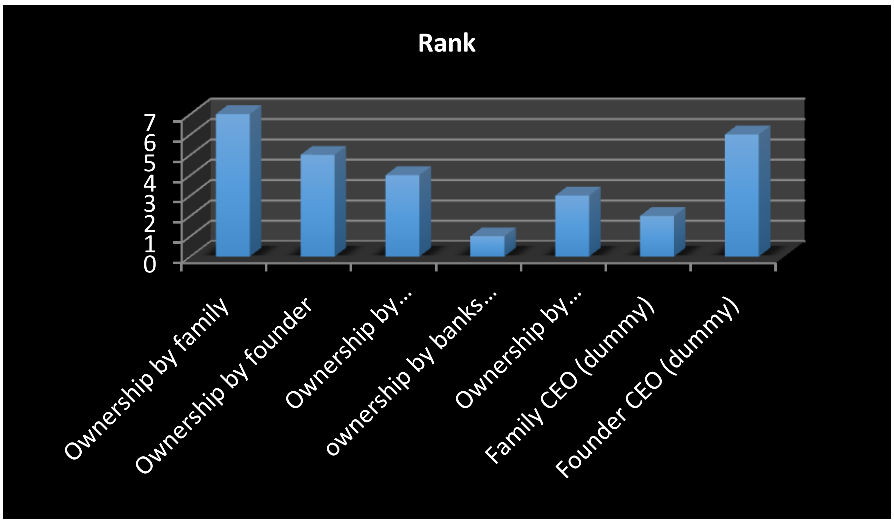

FIGURE 3. Rank

Figure 4 showed Family CEO (dummy) is ranked second. Ownership by employees (ESOP) is ranked third. Ownership by mutual funds is ranked fourth. Ownership by founder is ranked fifth. Founder CEO (dummy) is ranked sixth. Ownership by family is ranked seventh.

4. CONCLUSION

Every company formulates its own Corporate Social Responsibility (CSR) policy to outline its actions and compile annual product reports. These policies play a crucial role in distinguishing between ethically responsible actions and those that do not meet the standards of social responsibility. They serve as a means of ensuring accountability to a broad spectrum of stakeholders in society. Social responsibility is a fundamental principle, representing the company's commitment to being accountable to society as a whole. It essentially constitutes a social contract between the company and its surrounding community, emphasizing the importance of ethical and responsible practices in business operations. Indeed, Corporate Social Responsibility (CSR) transcends the immediate community members and carries great significance for the broader civil society and future generations. CSR encompasses a wide array of domains, ranging from economic policies and climate change and energy initiatives to evaluation and measurement processes, standardization, and the responsible management of natural resources. It's vital to emphasize that CSR is not constrained by a specific time frame; it extends from the present into the future, reflecting a commitment to long-term ethical and responsible business practices. As an international company, we also adhere to the practice of disclosing our CSR initiatives, demonstrating our dedication to corporate responsibility on a global scale. Corporate Social Responsibility (CSR) first emerged as a contemporary concept in the aftermath of the Second World War. It began gaining significant traction in the 1960s, largely propelled by societal transformations such as civil rights, women's rights, consumer advocacy, and heightened environmental consciousness. Over time, CSR has matured into a sophisticated and globally recognized framework. It now serves as a universally understood and practiced language, underscoring the paramount importance of stakeholders. In the present era, modern businesses are no longer solely accountable for profit generation and legal compliance. They are increasingly expected to prioritize broader objectives, encompassing not only economic growth but also the effective implementation of CSR principles. In the realm of personnel assessment and selection, the Multiple Criteria Decision Making (MCDM) technique, particularly the Weighted Point Method (WPM), can prove to be a valuable tool. WPM integrates linguistic elements and aligns the objectives of an organization with the individual skills of candidates to identify the most suitable employees based on their respective scores. The creation of a well-structured hierarchy for evaluation and selection within companies enables the effective matching of candidates with positions that align best with their qualifications. This approach highlights that the Weighted Point Method (WPM) is exceptionally well-suited for tasks involving human judgment and decision-making. One of its key advantages is that it allows us to make judgments without the need for artificial procedures or rigid criteria. This flexibility and adaptability make WPM a valuable tool in the personnel evaluation and selection process, enhancing the ability to make informed and nuanced decisions based on the specific needs and criteria of the organization.

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