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# Identifying and Ranking Dimensions, Components, and Indicators of Intangible Organizational Assets of the Ministry of Interior Using Fuzzy Inference

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**Abstract:**

**Purpose:** This article presents a comprehensive model for the identification, measurement, and management of intangible organizational assets. Its objective is to enhance organizational performance and competitive capabilities through the optimal utilization of intangible assets such as human, intellectual, and social capital.

**Design/methodology/approach:** The design of this model incorporates elements of organizational psychology and knowledge management to facilitate a deeper analysis and improved management of these assets. The optimal design approach involves a combination of organizational psychology and knowledge management perspectives. This approach can contribute to a more profound analysis of intangible assets such as human and intellectual capital, offering a new level of insight, and provide tools and methods for optimal management. Organizational psychology theories can be employed to examine the impact of communication and organizational culture, fostering improvements in communication processes and the creation of new social capabilities.

**Findings:** The research findings, which are of significant importance to your field, indicate that cultural capital holds the highest significance with a weight of 0.249, followed by social and political capital with weights of 0.198 and 0.195, respectively. Intellectual, spiritual, and psychological capital are of lesser importance in descending order. Despite the limitations of the research, such as restricted access to data and challenges in measuring intangible assets, which may impact the accuracy and reliability of the results, the practical implications of this research are profound. They encompass improved organizational decision-making, increased efficiency, and strengthened knowledge management strategies. The article draws particularly on aspects of the knowledge economy and organizational behavior theories and can contribute to the enhancement of management strategies and value creation for organizations.

**Keywords:** Intangible Organizational Assets, Ministry of Interior, Fuzzy Inference

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**Introduction:**

In today's economic landscape, intangible assets are gaining recognition as one of the most valuable resources for organizations. These assets, which are not typically reflected in physical or financial assets, encompass factors such as employee expertise, optimized operational processes, customer relationships, and internal and external communication networks (Adu-Ameyaw, Danso, Uddin, & Acheampong, 2024). Unlike tangible assets that can be observed and measured, intangible assets are often considered fundamental factors in the long-term success and growth of organizations. This article explores and presents a comprehensive model for the identification, measurement, and management of intangible organizational assets. This model not only assists organizations in accurately identifying their intangible assets but also provides tools and processes for optimizing and leveraging these assets (Khanna, Pandher, & Bedi, 2023). In today's knowledge-based and highly competitive economy, intangible assets are recognized as the primary drivers of innovation and value creation. These assets often serve as strategic resources for organizations to achieve a competitive advantage, and in some industries, the value of intangible assets significantly surpasses that of tangible assets. For instance, information technology companies possessing advanced technical and technological knowledge are capable of establishing a stronger competitive advantage compared to rivals lacking such knowledge (Masulis, Reza, & Guo, 2023). In areas such as knowledge management, organizational culture, and operational efficiency, intangible assets play a crucial role. The ability to effectively utilize these assets can contribute to cost reduction, performance improvement, and facilitation of innovation and product development processes (Thien & Hung, 2023). Despite the significance and strategic position of intangible assets, their identification and measurement have always posed a major challenge for organizational managers (Foroudi, 2023). These challenges include methodological limitations, complexities in converting knowledge into economic value, and the absence of a standardized process for the optimal management and utilization of intangible assets. Moreover, analyzing the financial and performance impacts of these assets often encounters challenges such as their incompatibility with traditional analysis methods (Giorgino, Barnabè, & Kunc, 2023). The primary objective of this article is to present a comprehensive and inclusive model for the identification, measurement, and management of intangible organizational assets. To achieve this goal, we first delve into the scientific and conceptual examination of intangible assets, followed by an exploration of the existing challenges and issues in their identification and measurement. Subsequently, we propose and elaborate on our model for managing these assets, and finally, we offer recommendations for enhancing performance and optimizing the utilization of intangible assets. This article holds significant value due to the increasing importance of intangible assets in the knowledge-based economy and the growing need for organizations to adopt

new methods and tools for managing these assets. The value of this article lies in its comprehensive model and practical recommendations, which can significantly enhance the management of intangible assets in organizations, making it a must-read for professionals in the field.

## Literature Review

In the examination of intangible organizational assets, a broad theoretical foundation is utilized, drawing from various disciplines such as economics, management, and behavioral sciences. These theoretical foundations provide a deep understanding of the nature and value of intangible assets, offering tools and processes for their identification, measurement, and management (Arcos-Pumarola, Paquin, & Sitges, 2023). The knowledge economy theory emerges as a fundamental framework in the study of intangible assets. In this approach, knowledge and information are regarded as foundational assets that can be recognized as intangible assets within organizations (Elkemali, 2024). This theory emphasizes that intangible assets like specialized knowledge, individual experiences, and key organizational capabilities hold economic value and can serve as strategic resources in organizational decision-making (Park et al., 2024). Knowledge management theories explore the processes, structures, and systems that organizations employ to gather, store, and transfer knowledge and experiences. These theories demonstrate that knowledge management can not only contribute to improved organizational performance but also effectively manage and leverage intangible organizational assets as valuable resources (Stratone, 2023). Network theories are also utilized in understanding intangible assets. These theories emphasize internal and inter-organizational relationships and connections, highlighting that communication networks can be considered a type of intangible asset with potential value for organizations. These theories can aid in analyzing the structure of communication within organizations and assessing its impact on organizational performance and value (Bavdaž et al., 2023). Organizational behavior theories examine the behaviors, contributions, and organizational activities of individuals and groups within organizations. These theories can assist in analyzing how intangible assets such as organizational culture, soft skills, and organizational commitment are created and strengthened. For example, soft skills like leadership have a significant impact on the creation and maintenance of specialized knowledge and intangible assets within organizations (Lubacha, 2023). In general, the theoretical foundations presented in this article demonstrate that intangible organizational assets, as a valuable and strategic resource, can play a crucial role in the development and sustainability of organizations. These theoretical foundations provide organizations with tools and approaches to identify, evaluate, and derive greater benefits from their intangible assets.

**Intellectual Capital Theory:** This theory examines and manages intangible assets such as human capital, structural capital, and informational capital. It can serve as a framework for identifying and measuring intangible assets within organizations (Ma & Zhang, 2023). Human capital encompasses the knowledge and skills of employees; structural capital relates to organizational structures and processes; and informational capital includes technical knowledge and information resources of the organization. Social Capital Theory: This theory investigates intra-organizational and inter-organizational

relationships, networks, and trust, which are considered intangible assets (Alakkas et al., 2023). Social capital comprises trust, organizational reputation, social responsibility, and networks of civic engagement, which can be regarded as effective assets in the development and sustainability of organizations. Psychological Capital Theory: This theory explores the psychological characteristics of individuals within organizations that are considered necessary intangible assets (Ewens, Peters, & Wang, 2024). Psychological capital includes self-awareness, self-efficacy, resilience, and perseverance, which can contribute to improving individual and organizational performance. Political and Cultural Capital Theory: This theory examines the impact of political, cultural, and ethical capabilities within organizations, which can be managed as intangible assets. Political capital includes political trust and political participation, while cultural capital focuses on values, respect for differences, and understanding human values (Bermúdez-Carvajal & Parra-Domínguez, 2023). These four presented theoretical frameworks can serve as valuable tools for analyzing and developing a comprehensive model for intangible organizational assets in the intended article. Each of these theories has the potential to provide specific patterns, tools, and management processes for identifying, evaluating, and utilizing intangible organizational assets.

## Methodology

The research method employed in this study is a mixed or hybrid approach, utilizing a sequential exploratory design to investigate the research questions. In this approach, the qualitative phase is implemented first, followed by the quantitative phase. Finally, the results from both phases are analyzed and interpreted concurrently, emphasizing the collaborative nature of the research process. The qualitative phase was conducted using thematic analysis, a process for analyzing textual data that transforms scattered and diverse data into rich and detailed information (Braun et al., 2020). Typically, three approaches (inductive, deductive, and hybrid) are considered for thematic analysis. In this research, a hybrid approach was adopted, and at the outset, a predetermined framework was utilized to organize the data and interviews. However, new concepts also emerged during the analysis, and ultimately, the predetermined codes were combined with the subsequently generated codes to create a comprehensive thematic analysis description (Fereday & Muir-Cochrane, 2006). In addition to the theoretical foundations, the data collection tools in the qualitative phase included semi-structured interviews. Sampling in this phase was conducted using a snowball method, where after interviewing the first individual, each participant was asked to recommend other experts in the field. After conducting 15 interviews with experts, who in this article are employees of the Human Resources Management department of the Ministry of Interior, the codes reached saturation, and the interviews were concluded. The thematic analysis process in this research was carried out in five steps, and the descriptive statistics of the qualitative phase sample can be observed in Table 1. Table1

**Table 1 - Information of Interviewees**

| Organizational Position | Education Level | Work Experience (Years) |
|---|---|---|
| Human Resources Manager | PhD | 16 |
| Human Resources Manager | PhD | 18 |
| Human Resources Manager | PhD | 12 |
| Human Resources Manager | PhD | 22 |
| Human Resources Manager | PhD | 19 |
| Administrative Training Specialist | Bachelor's Degree | 18 |
| Administrative Training Specialist | Bachelor's Degree | 22 |
| Administrative Training Specialist | Master's Degree | 19 |
| Administrative Training Specialist | Master's Degree | 16 |
| Administrative Training Specialist | Master's Degree | 13 |
| Human Resources Evaluation Specialist | Master's Degree | 26 |
| Human Resources Evaluation Specialist | Bachelor's Degree | 17 |
| Human Resources Evaluation Specialist | Bachelor's Degree | 15 |
| Human Resources Evaluation Specialist | PhD | 19 |
| Deputy Human Resources Manager | PhD | 23 |
| Deputy Human Resources Manager | PhD | 28 |

**Table 2: Sub-criteria of Intangible Organizational Assets of the Ministry of Interior**

| Sub-criteria | | Index |
|---|---|---|
| SC1 | Human Capital<br>Informational Capital | Intellectual Capital |
| SC2 | Structural Capital | |
| SC3 | Relational Capital | |
| SF1 | Trust,<br>Organizational Reputation | Social Capital |
| SF2 | Social Responsibility | |
| SF3 | Cohesion and Solidarity | |
| SF4 | Civic Engagement Networks | |
| SF5 | Adherence to Ethical Principles | |
| SF6 | Organizational Reputation | |
| SR1 | Individual Capital | Cultural Capital |
| SR2 | Group Capital | |
| SR3 | Organizational Capital | |
| SQ1 | Political Trust | Political Capital |
| SQ2 | Political Intelligence | |
| SQ3 | Networking Abilities | |
| SQ4 | Political Action | |
| SQ5 | Political Participation and Action | |

| | | |
|---|---|---|
| SG1 | Self-awareness | Spiritual Capital |
| SG2 | Understanding Higher Human Values | |
| SG3 | Respect for Differences | |
| SD1 | Self-efficacy | Psychological Capital |
| SD2 | Resilience | |
| SD3 | Effort and Perseverance | |
| SD4 | Optimism | |

To present a model for evaluating the organizational intangible assets of the Ministry of Interior using fuzzy inference and the Analytic Hierarchy Process (AHP), the research method involves several key steps. In the first step, the identification and classification of organizational intangible assets were carried out through library research and interviews with relevant experts and managers (Table 2). Then, utilizing the AHP technique, the criteria and sub-criteria related to the evaluation of these assets were determined, and the hierarchical structure of the model was developed. In the next step, expert opinions were collected using designed questionnaires, and using the fuzzy method, the ambiguities and uncertainties in their judgments were modeled. Finally, by analyzing the results through the combination of fuzzy inference and AHP, the final model for evaluating the organizational intangible assets of the Ministry of Interior is presented, and its results are interpreted.

**Result**

**Prioritization of the Constructive Themes of the Intangible Assets Model**

**Table 3 - The Integrated Fuzzy Comparison Matrix of Intangible Assets**

| Psychological Capital | | | Spiritual Capital | | | Political Capital | | | Cultural Capital | | | Social Capital | | | Intellectual Capital | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .223 | 69.113 | 1.16 | .196 | .143 | 98.093 | .138 | .091 | .064 | .049 | 3.0618 | 29.0 | 2.23 | .169 | .116 | 1 | 1 | 1 |
| .223 | 69.113 | 1.16 | .196 | .143 | 98.093 | .191 | .138 | .092 | .196 | 4.13 | 98.0 | 1 | 1 | 1 | .085 | .059 | 4.04 |
| .223 | 69.113 | 1.16 | .196 | .143 | 98.093 | .253 | .199 | .137 | 1 | 1 | 1 | 0.1108 | .069 | .050 | .343 | .276 | 0.22 |
| .223 | 69.113 | 1.16 | .320 | .245 | 66.130 | 1 | 1 | 1 | .072 | 5.00 | 39.047 | 0.1765 | .072 | .052 | .154 | .109 | 7.02 |
| .223 | 69.113 | 1.16 | 1 | 1 | 1 | .061 | .042 | .032 | .101 | 6.09 | 50.078 | 0.11 | .069 | .050 | .101 | .069 | 5.00 |

**Table 4 - Fuzzy AHP Model of Intangible Assets**

| Normalized Preferences | Preference Degree | Si's Preference Degree over Sk | | | | | Fuzzy Compound Expansion | | | Fuzzy Sum of Each Row | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1843.0 | 740.0 | 0.100 | 0.100 | 9.057 | 7.040 | 94.09 | 30.050 | 17.038 | 09.084 | 316.98 | 09.763 | 2.55 |
| 1981.0 | 795.0 | 0.100 | 0.100 | 0.100 | 7.095 | 00.10 | 32.057 | 18.047 | 10.033 | 949.99 | 54.719 | 5.51 |
| 2491.0 | 000.1 | 0.100 | 0.100 | 0.100 | 0.100 | 00.10 | 39.087 | 23.046 | 13.020 | 17.1297 | 5.9 | 0.75 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1954.0 | 785.0 | 0.100 | 0.100 | 7.085 | 9.091 | 00.10 | 32.006 | 18.028 | 10.023 | 794.94 | 46.7 | 4.56 |
| 1158.0 | 465.0 | 0.100 | 6.089 | 4.065 | 6.080 | 73.02 | 22.052 | 12.073 | 07.052 | 879.66 | 19.5 | 0.41 |
| 0574.0 | 231.0 | 7.063 | 4.052 | 2.031 | 4.043 | 49.03 | 17.033 | 09.069 | 06.006 | 294.52 | 95.3 | 2.33 |
| 1 | - | - | - | - | - | - | - | - | - | - | - | - |

**Table 5 - Weights of the Criteria in the Intangible Assets Model**

| | | |
|---|---|---|
| **0.184** | Intellectual Capital | |
| **0.198** | Social Capital | **Weights of the Criteria** |
| **0.249** | Cultural Capital | |
| **0.195** | Political Capital | |
| **0.116** | Spiritual Capital | |
| **0.057** | Psychological Capital | |

In this model, various criteria for intangible assets have been examined, each with a specific weight in the prioritization process. These weights indicate the relative importance of each criterion in relation to the intangible asset model. Intellectual Capital (Weight: 0.84): Intellectual capital refers to assets related to the knowledge, experience, and expertise of individuals within the organization. These assets are highly significant as they serve as the main source of innovation and growth for the organization. Social Capital (Weight: 0.98): Social capital refers to internal and external networks, relationships, and connections that are crucial for creating additional value and facilitating work processes. Cultural Capital (Weight: 0.49): Cultural capital refers to the shared values, beliefs, behaviors, and attitudes within the organization. This asset can have a significant impact on the performance and success of the organization. Political Capital (Weight: 0.95): Political capital refers to the power and influence individuals or groups possess within the organization to affect key decisions and processes. Spiritual Capital (Weight: 0.16): Spiritual capital refers to the deep, spiritual connections among members of the organization that can enhance motivation, trust, and solidarity. Psychological Capital (Weight: 0.57): Psychological capital refers to the mental state and positive or negative emotions of individuals within the organization, which can influence their

performance and behaviors. Ultimately, these prioritizations show that cultural capital is given more importance in the intangible assets model, while psychological capital has the lowest weight.

**Prioritization of the Fundamental Themes of Intellectual Capital**

**Table 6 - The Integrated Fuzzy Comparison Matrix of Intellectual Capital**

| Informational Capital | | | Relational Capital | | | Structural Capital | | | Human Capital | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200.19 | 813.00 | 583.00 | 462.18 | 953.02 | 642.04 | 089.21 | 528.10 | 049.11 | 1 | 1 | 1 |
| 715.11 | 230.11 | 832.07 | 756.17 | 272.13 | 882.02 | 1 | 1 | 1 | 953.02 | 654.04 | 478.07 |
| 345.20 | 774.11 | 218.11 | 1 | 1 | 1 | 133.15 | 785.09 | 569.02 | 556.17 | 049.11 | 683.06 |
| 1 | 1 | 1 | 821.00 | 563.07 | 426.04 | 200.19 | 813.00 | 583.00 | 715.11 | 230.11 | 832.07 |

**Table 7 - Fuzzy AHP Model of Intellectual Capital**

| Normalized Preferences | Preference Degree | Si's Preference Degree over Sk | | | Fuzzy Compound Expansion | | | Fuzzy Sum of Each Row | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.2590 | 0.939 | 1.000 | 0.939 | 1.000 | 0.4501 | 0.2576 | 0.1492 | 5.7529 | 4.2942 | 3.2745 |
| 0.2503 | 0.908 | 1.000 | 0.908 | 0.971 | 0.4245 | 0.2494 | 0.1455 | 5.4251 | 4.1569 | 3.1935 |
| 0.2758 | 1.000 | 1.000 | 1.000 | 1.000 | 0.4722 | 0.2765 | 0.1581 | 6.0352 | 4.6091 | 3.4709 |
| 0.2149 | 0.779 | 0.779 | 0.872 | 0.843 | 0.3706 | 0.2164 | 0.1295 | 4.7370 | 3.6067 | 2.8422 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - | - | - | - |

**Table 8 - Weights of the Criteria for Intellectual Capital**

| | | |
|---|---|---|
| 0.259 | Intellectual Capital | **Weights of the Criteria** |
| 0.250 | Social Capital | |
| 0.276 | Cultural Capital | |
| 0.215 | Political Capital | |

In organizational asset management, intellectual capital is considered one of the fundamental and significant components, having a profound impact on the performance and success of the organization. This asset is typically recognized as a collection of knowledge, experience, skills, and other intangible resources available to the organization, with the potential to create added value. However, to manage this asset optimally, it is necessary to identify and prioritize its fundamental themes. One of the methods used for this purpose is the Analytic Hierarchy Process (AHP). In this context, the prioritization of the fundamental themes of intellectual capital has been carried out using the AHP method. These fundamental themes include human capital, structural capital, relational capital, and informational capital. By determining the weights of these criteria, the relative importance of each theme in the creation and management of intellectual capital is clarified. In this model, various themes related to intellectual capital have been considered, each with a specific weight in the prioritization process. These weights reflect the relative importance of each theme in relation to the organization's intellectual capital.

1- Human Capital (Weight: 0.59): Human capital refers to the knowledge, skills, experiences, and individual capabilities of people within the organization. This theme is fundamental for the creation and development of intellectual capital within the organization.
2- Structural Capital (Weight: 0.50): Structural capital pertains to the structures, processes, and organizational frameworks that aid in the creation, maintenance, and transfer of knowledge and experience within the organization.
3- Relational Capital (Weight: 0.76): Relational capital involves the networks, relationships, and internal

and external communications of the organization that facilitate knowledge and experience sharing and foster cohesion and collaboration among members.

4- Informational Capital (Weight: 0.15): Informational capital refers to the data, information, and knowledge available to the organization that can be used for better decision-making and value creation. These prioritizations indicate that, within the intellectual capital model, relational capital is recognized as the most important factor in the organization's intellectual capital, while informational capital has the lowest weight.

**Prioritization of the Fundamental Themes of Social Capital**

**Table 9 - The Integrated Fuzzy Comparison Matrix**

| Organizational Reputation | | | Adherence to Ethical Principles | | | Networks of Civic Participation | | | Cohesion and Solidarity | | | Social Responsibility | | | Trust | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.23 | 1.69 | 1.16 | 1.9693 | 1.43 | 0.98 | 1.38 | 0.91 | 0.64 | 0.49 | 0.36 | 0.29 | 3.0941 | 2.2663 | 1.4982 | 1 | 1 | 1 |
| 2.23 | 1.69 | 1.16 | 1.9693 | 1.43 | 0.98 | 1.73 | 1.30 | 0.92 | 1.96 | 1.43 | 0.98 | 1 | 1 | 1 | 0.66 | 0.44 | 0.32 |
| 2.23 | 1.69 | 1.16 | 1.4697 | 1.17 | 0.84 | 2.53 | 1.99 | 1.37 | 1 | 1 | 1 | 1.01 | 0.69 | 0.50 | 3.43 | 2.76 | 2.02 |
| 1.13 | 0.85 | 0.62 | 3.2072 | 2.45 | 1.66 | 1 | 1 | 1 | 0.72 | 0.50 | 0.39 | 1.07 | 0.76 | 0.57 | 1.54 | 1.09 | 0.72 |
| 2.23 | 1.69 | 1.16 | 1 | 1 | 1 | 0.61 | 0.42 | 0.32 | 1.17 | 0.84 | 0.68 | 1.01 | 0.69 | 0.50 | 1.01 | 0.69 | 0.50 |
| 1 | 1 | 1 | 0.8588 | 0.59 | 0.44 | 1.60 | 1.16 | 0.88 | 0.85 | 0.59 | 0.44 | 0.85 | 0.59 | 0.44 | 0.85 | 0.59 | 0.44 |

**Table 10 - Fuzzy AHP Model of Social Capital**

| Normalized Preferences | Preference Degree | Si's Preference Degree over Sk | | | | | Fuzzy Compound Expansion | | | Fuzzy Sum of Each Row | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.0 | 83.0 | 00.1 | 00.1 | 00.1 | 83.0 | 00.1 | 33.0 | 18.0 | 10.0 | 17.10 | 67.7 | 58.5 |
| 18.0 | 78.0 | 00.1 | 00.1 | 00.1 | 78.0 | 95.0 | 31.0 | 17.0 | 10.0 | 57.9 | 30.7 | 39.5 |
| 23.0 | 00.1 | 00.1 | 00.1 | 00.1 | 00.1 | 00.1 | 38.0 | 22.0 | 12.0 | 68.11 | 31.9 | 91.6 |
| 16.0 | 70.0 | 00.1 | 00.1 | 70.0 | 92.0 | 88.0 | 282.0 | 16.0 | 09.0 | 69.8 | 67.6 | 97.4 |
| 12.0 | 50.0 | 00.1 | 80.0 | 50.0 | 72.0 | 68.0 | 229.0 | 13.0 | 078.0 | 04.7 | 35.5 | 18.4 |
| 08.0 | 36.0 | 85.0 | 66.0 | 36.0 | 58.0 | 54.0 | 19.0 | 11.0 | 06.0 | 04.6 | 52.4 | 67.3 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - | - | - | - | - | - |

**Table 11 - AHP Weights of Social Capital Criteria**

| | | |
|---|---|---|
| 0.199 | Trust | **Weights of Criteria** |
| 0.188 | Social Responsibility | |
| 0.239 | Cohesion and Solidarity | |
| 0.168 | Networks of Civic Participation | |
| 0.121 | Adherence to Ethical Principles | |
| 0.087 | Organizational Reputation | |

Social capital is considered one of the important components of intellectual capital in organizations.

This capital includes factors such as trust, social responsibility, cohesion and solidarity, civic engagement networks, adherence to ethical principles, and organizational reputation. Prioritizing these fundamental themes using the Analytic Hierarchy Process (AHP) can help organizations better understand the significance of each theme in achieving their goals and creating value for their organization. In this context, the core themes of social capital—trust, social responsibility, cohesion and solidarity, civic engagement networks, adherence to ethical principles, and organizational reputation—have been examined, with the weights of the criteria as follows:

1- Trust (Weight: 0.99): Trust is considered one of the most crucial factors of social capital, playing a fundamental role in fostering positive relationships and enhancing cooperation and interactions among organizational members.
2- Social Responsibility (Weight: 0.88): Social responsibility reflects the organization's commitment to adhering to ethical and social standards and can positively impact the organization's public image and credibility.
3- Cohesion and Solidarity (Weight: 0.39): Cohesion and solidarity among organizational members indicate a

healthy and dynamic work environment, contributing to positive relationships and effective interactions.

4- Civic Engagement Networks (Weight: 0.68): Civic engagement networks, as a key element of social capital, play an important role in establishing connections between the organization and local and global communities.

5- Adherence to Ethical Principles (Weight: 0.21): Adherence to ethical principles reflects the organization's commitment to applying ethical standards across all its activities and can enhance trust and the organization's reputation.

6- Organizational Reputation (Weight: 0.87): Organizational reputation represents the image and standing the organization holds in the eyes of the public and can significantly affect the organization's value.

These prioritizations indicate that, within the social capital model, **trust** is recognized as the most significant factor, while **adherence to ethical principles** has the lowest weight.

**Prioritization of the Fundamental Themes of Cultural Capital**

**Table 12 - The Integrated Fuzzy Comparison Matrix of Cultural Capital**

| Organizational | | | Group | | | Individual | | |
|---|---|---|---|---|---|---|---|---|
| 0891.2 | 5280.1 | 6031.0 | 0891.2 | 5280.1 | 0491.1 | 1 | 1 | 1 |
| 0891.2 | 5280.1 | 0243.1 | 1 | 1 | 1 | 7937.0 | 6544.0 | 4787.0 |
| 1 | 1 | 1 | 7937.0 | 6544.0 | 4612.0 | 7937.0 | 6544.0 | 7783.0 |

**Table 13 - Fuzzy AHP Model of Cultural Capital**

| **Normalized Preferences** | **Preference Degree** | **Si's Preference Degree over Sk** | | **Fuzzy Compound Expansion** | | | **Fuzzy Sum of Each Row** | | |
|---|---|---|---|---|---|---|---|---|---|
| 462.0 | 000.1 | 000.1 | 000.1 | 700.03 | 424.08 | 227.07 | 178.53 | 056.40 | 652.22 |
| 353.0 | 765.0 | 000.1 | 765.0 | 525.01 | 333.03 | 214.09 | 882.38 | 182.35 | 502.29 |
| 185.0 | 400.0 | 596.0 | 400.0 | 349.09 | 241.08 | 192.03 | 587.24 | 308.29 | 239.25 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - | - | - |

**Table 14 - Weights of the Criteria for Cultural Capital**

| | | |
|---|---|---|
| 462.0 | Individual | Weights of Criteria |
| 353.0 | Group | |
| 185.0 | Organizational | |

Cultural capital, as one of the important components of intellectual capital in organizations, includes shared values, beliefs, behaviors, and attitudes within the organization. This capital is highly significant as it can greatly influence the behavior and performance of both individuals and the organization. In this model, the core themes of cultural capital include individual, group, and organizational aspects, with the weights of the criteria as follows:

1. **Individual (Weight: 0.62):** Individual cultural capital refers to personal beliefs, values, and behaviors within the organization. This factor can have a significant impact on individual behavior and performance, and ultimately on the organization's performance.
2. **Group (Weight: 0.53):** Group cultural capital pertains to shared values, beliefs, and behaviors within the organization. This cultural aspect can help determine the direction and approach of the organization and foster unity and cohesion.
3. **Organizational (Weight: 0.85):** Organizational cultural capital refers to values, beliefs, and behaviors that are specifically developed within the organization. This culture can help create organizational identity and recognition and influence overall organizational decisions and behaviors.

These prioritizations indicate that within the cultural capital model, the **individual** aspect is recognized as the most important factor, while the **organizational** aspect has the lowest weight.

**Prioritization of the Fundamental Themes of Political Capital**

**Table 15 - The Integrated Fuzzy Comparison Matrix of Political Capital**

| Political Participation | | | Political Action | | | Networking Abilities | | | Political Intelligence | | | Political Trust | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.15 | 2.17 | 8.08 | 200.19 | 8.01 | 5.08 | 4.12 | 03.14 | 759.08 | 08.2 | 52.1 | 04.1 | 1 | 1 | 1 |
| 7.15 | 2.17 | 8.08 | 715.11 | 2.13 | 8.03 | 7.15 | 27.1 | 882.02 | 1 | 1 | 1 | 9.05 | 6.05 | 4.07 |
| 7.15 | 2.17 | 8.08 | 345.20 | 7.17 | 2.11 | 1 | 1 | 1 | 13.1 | 78.0 | 56.0 | 3.11 | 9.06 | 7.00 |
| 7.28 | 0.28 | 4.12 | 1 | 1 | 1 | 8.02 | 56.0 | 42.0 | 20.1 | 81.0 | 58.0 | 7.11 | 2.13 | 8.03 |
| 1 | 1 | 1 | 700.02 | 4.07 | 3.05 | 1.13 | 78.0 | 56.0 | 13.1 | 78.0 | 56.0 | 1.13 | 7.08 | 5.06 |

**Table 16 - Fuzzy AHP Model of Political Capital**

| **Normalized Preferences** | **Preference Degree** | **Si's Preference Degree over Sk** | | | | **Fuzzy Compound Expansion** | | | **Fuzzy Sum of Each Row** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2153.0 | 977.0 | 00.10 | 99.03 | 97.07 | 00.10 | 37.027 | 21.039 | 122.07 | 47.750 | 64.577 | 274.42 |
| 2078.0 | 943.0 | 00.10 | 95.09 | 94.03 | 96.06 | 35.081 | 20.056 | 117.00 | 18.718 | 42.592 | 075.47 |
| 2203.0 | 000.1 | 00.10 | 00.10 | 00.10 | 00.10 | 37.065 | 21.096 | 125.05 | 55.713 | 79.591 | 369.47 |
| 2169.0 | 985.0 | 00.10 | 98.05 | 00.10 | 00.10 | 37.049 | 21.057 | 122.06 | 52.702 | 69.558 | 270.43 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1397.0 | 634.0 | 65.02 | 63.04 | 69.05 | 65.07 | 25.043 | 14.053 | 088.01 | 10.508 | 83.365 | 067.30 |
| 1 | - | - | - | - | - | - | - | - | - | - | - |

**Table 17 - Weights of the Criteria for Political Capital**

| | | |
|---|---|---|
| 0.215 | Political Trust | **Weights of Criteria** |
| 0.208 | Political Intelligence | |
| 0.220 | Networking Abilities | |
| 0.217 | Political Action | |
| 0.140 | Political Participation | |

Political capital is a significant aspect of intellectual capital in organizations, referring to the organization's ability to establish and maintain relationships and interactions with both external and internal stakeholders, influence decision-making processes, and leverage the social and political capabilities of its employees. Here, the prioritization of the core themes of political capital has been conducted using the Analytic Hierarchy Process (AHP). The core themes include political trust, political intelligence, networking abilities, political action, and political participation. The weights of the criteria are as follows:

1. **Political Trust (Weight: 0.15):** Political trust refers to the ability of organizational members to trust the organization and other members within the political environment. This factor is essential for building positive relationships and effective interactions within the organization.
2. **Political Intelligence (Weight: 0.08):** Political intelligence pertains to the ability of individuals and the organization to understand and analyze political processes, political decisions, and adapt to the political environment.
3. **Networking Abilities (Weight: 0.20):** Networking abilities refer to the organization’s capacity to create and maintain effective relationships and communication networks within the political and social environment.
4. **Political Action (Weight: 0.17):** Political action involves the organization’s ability to engage in political activities and actions to achieve its objectives.
5. **Political Participation (Weight: 0.40):** Political participation refers to the ability of organizational members

to actively engage in political decision-making processes and conduct political activities.

These prioritizations indicate that, within the political capital model, **networking abilities** are recognized as the most important factor, while **political participation** has the lowest weight.

**Prioritization of the Fundamental Themes of Spiritual Capital**

**Table 18 - The Integrated Fuzzy Comparison Matrix of Spiritual Capital**

| Self-Awareness | | | Respect for Others' Differences | | | Understanding of High Human Values | | |
|---|---|---|---|---|---|---|---|---|
| 2894.2 | 7151.1 | 7598.0 | 2894.2 | 7151.1 | 1497.1 | 1 | 1 | 1 |
| 2894.2 | 7151.1 | 0243.1 | 1 | 1 | 1 | 7937.0 | 5830.0 | 4368.0 |
| 1 | 1 | 1 | 7937.0 | 5830.0 | 4612.0 | 7937.0 | 5830.0 | 5774.0 |

**Table 19 - Fuzzy AHP Model of Spiritual Capital**

| **Normalized Preferences** | **Preference Degree** | **Si's Preference Degree over Sk** | | **Fuzzy Compound Expansion** | | | **Fuzzy Sum of Each Row** | | |
|---|---|---|---|---|---|---|---|---|---|
| 485.0 | 000.1 | 000.1 | 000.1 | 753.00 | 447.07 | 237.05 | 578.59 | 430.43 | 909.25 |
| 356.0 | 733.0 | 000.1 | 733.0 | 551.01 | 333.03 | 200.09 | 083.41 | 298.32 | 461.21 |
| 159.0 | 328.0 | 564.0 | 328.0 | 349.02 | 218.09 | 166.04 | 587.24 | 166.21 | 038.25 |
| 1 | - | - | - | - | - | - | - | - | - |

**Table 20 - Weights of the Criteria for Political Capital**

| | | |
|---|---|---|
| **0.485** | Understanding of High Human Values | Weights of Criteria |
| **0.356** | Respect for Others' Differences | |
| **0.159** | Self-Awareness | |

Spiritual capital, as one of the important dimensions of intellectual capital in organizations, refers to elements such as values, ideals, spiritual feelings, and concepts like respect for others' differences and understanding of high human values. This capital generally aids the organization in enhancing employee morale and motivation, fostering a positive organizational culture, and strengthening spiritual connections among members. Here, the prioritization of the core themes of spiritual capital has been conducted using the Analytic Hierarchy Process (AHP). The core themes include understanding high human values, respect for others' differences, and self-awareness, with the weights of the criteria as follows:

1. **Understanding High Human Values (Weight: 0.85):** This theme refers to the organization's ability to comprehend and reinforce human values and ideals, which contributes to creating spirituality and motivation among employees and enhancing interpersonal relationships.
2. **Respect for Others' Differences (Weight: 0.56):** This theme pertains to the organization's ability to create a diverse and inclusive environment that acknowledges individual and cultural differences, thereby promoting a sense of connection and belonging within the organization.
3. **Self-Awareness (Weight: 0.59):** This theme involves the organization's and individuals' ability to understand and be aware of themselves and their relationships with others, which can help foster greater harmony and cohesion within the organization.

These prioritizations indicate that, within the spiritual capital model, **understanding high human values** is recognized as the most important factor, while **self-awareness** has the lowest weight.

**Prioritization of the Fundamental Themes of Psychological Capital**

**Table 21 - The Integrated Fuzzy Comparison Matrix of Psychological Capital**

| Optimism | | | Effort and Perseverance | | | Flexibility | | | Self-efficacy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9184.0 | 603.01 | 421.06 | 462.18 | 953.02 | 642.04 | 089.21 | 528.10 | 049.11 | 1 | 1 | 1 |
| 9215.0 | 691.07 | 532.00 | 756.17 | 272.13 | 882.02 | 1 | 1 | 1 | 953.02 | 654.04 | 478.07 |
| 2599.1 | 953.02 | 685.00 | 1 | 1 | 1 | 133.15 | 785.09 | 569.02 | 556.17 | 049.11 | 683.06 |
| 1 | 1 | 1 | 459.19 | 049.11 | 793.07 | 879.16 | 445.17 | 085.12 | 372.22 | 658.11 | 088.19 |

**Table 22 - Fuzzy AHP Model of Psychological Capital**

| Normalized Preferences | Preference Degree | Si's Preference Degree over Sk | | | Fuzzy Compound Expansion | | | Fuzzy Sum of Each Row | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2502.0 | 790.0 | 790.0 | 000.1 | 000.1 | 4237.0 | 2454.0 | 1430.0 | 4703.5 | 0843.4 | 1131.3 |
| 2080.0 | 657.0 | 657.0 | 956.0 | 885.0 | 3587.0 | 2174.0 | 1329.0 | 6314.4 | 6185.3 | 8929.2 |
| 2250.0 | 710.0 | 710.0 | 000.1 | 931.0 | 3834.0 | 2276.0 | 1350.0 | 9501.4 | 7882.3 | 9378.2 |
| 3168.0 | 000.1 | 000.1 | 000.1 | 000.1 | 5198.0 | 3096.0 | 1823.0 | 7117.6 | 1529.5 | 9677.3 |
| 1 | - | - | - | - | - | - | - | - | - | - |

**Table 23 - Weights of the Criteria for Psychological Capital**

| | | |
|---|---|---|
| 0.250 | Self-Efficacy | Weights of Criteria |
| 0.208 | Flexibility | |

| | | |
|---|---|---|
| 0.225 | Effort and Perseverance | |
| 0.317 | Optimism | |

Psychological capital is a vital aspect of intellectual capital in organizations, encompassing personal characteristics such as self-efficacy, flexibility, effort and perseverance, and optimism. This capital plays a significant role in enhancing individual and organizational performance and success. Here, the prioritization of the core themes of psychological capital has been conducted using the Analytic Hierarchy Process (AHP). The core themes include self-efficacy, flexibility, effort and perseverance, and optimism, with the weights of the criteria as follows:

1. **Self-Efficacy (Weight: 0.50):** Self-efficacy refers to an individual's belief in their ability to perform tasks and achieve success. This trait can enhance motivation and individual performance.
2. **Flexibility (Weight: 0.08):** Flexibility denotes an individual's ability to adapt and adjust to various situations and conditions. This trait can strengthen the organization's capability to handle changes.
3. **Effort and Perseverance (Weight: 0.25):** Effort and perseverance refer to an individual's ability to work with motivation and persistence. This trait can boost both individual and organizational efficiency and performance.
4. **Optimism (Weight: 0.17):** Optimism represents a positive attitude and hopefulness about the future and potential success. This trait can increase individual motivation and resilience.

These prioritizations indicate that, within the psychological capital model, **self-efficacy** is recognized as the most important factor, while **flexibility** has the lowest weight.

## Conclusions and Suggestions

The model presented for evaluating the intangible assets of the Ministry of the Interior, using fuzzy inference and the Analytic Hierarchy Process (AHP), has yielded significant results. These findings, based on the integrated fuzzy comparison matrix, have provided a comprehensive understanding of the importance of various intangible assets. Six types of capital were examined: intellectual, social, cultural, political, spiritual, and psychological capital. The integrated fuzzy comparison matrix initially indicated that cultural capital, with a weight of 0.249, holds the highest importance among intangible assets. This underscores the critical role of cultural capital in the Ministry of the Interior's organizations. Social capital, with a weight of 0.198, and political capital, with a weight of 0.195, follow in importance. These results highlight the vital role of social connections and political influence in the Ministry's organizations. Intellectual capital, with a weight of 0.184, is ranked next. This suggests

that while innovation and technical knowledge are important, they are considered less of a priority compared to cultural and social capital. Spiritual capital, with a weight of 0.116, and psychological capital, with a weight of 0.057, has the lowest priority among intangible assets. This may indicate that the Ministry's organizations pay less attention to the spiritual and psychological aspects of managing intangible assets.

The method used in this study, which combines fuzzy inference with the AHP, successfully modeled the uncertainties and ambiguities in expert evaluations, providing reliable results. This method is particularly effective in environments where data is uncertain and fuzzy. In conclusion, the model presented can be used as a reliable and effective tool for evaluating and managing intangible assets within the Ministry of the Interior. It helps managers identify and prioritize intangible assets more accurately and scientifically, leading to better decisions aimed at improving organizational performance. Moreover, the fuzzy AHP model clearly demonstrated that cultural capital should be given the highest priority in evaluating intangible assets for the Ministry of the Interior. This capital significantly impacts knowledge management and organizational culture, making it crucial. The evaluations also show that social and political capital affect organizational structure and performance from various perspectives and should be considered in intangible asset management. While intellectual and spiritual capital also holds their importance, they are ranked lower in the prioritization of criteria compared to other forms of capital that could enhance the measurement and management of intangible assets. These results affirm that the use of the fuzzy AHP method in this study has not only determined the various priorities but also accurately assessed the importance of each. Based on these analyses and results, the fuzzy AHP model can be a reliable tool for managers and policymakers in the Ministry of the Interior and similar organizations, aiding in the improvement of strategies and decision-making related to intangible assets. This model will help them utilize precise data and scientific methods to enhance organizational performance and efficiency and to manage resources more effectively.

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