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Intellectual capital as a tool for achieving competitiveness: Vision and analysis

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Abstract---This study aims to highlight the role of intellectual capital in achieving competitiveness for organizations. The subject was studied by clarifying the conceptual framework of intellectual capital as well as the competitiveness achieved in the organization and integrating the relationship between intellectual capital and competitiveness through the general vision of the subject and its in-depth analysis. Previous studies on the subject were relied upon, as the first axis related to the theoretical framework of intellectual capital - creativity and competitiveness - was addressed. The study concluded that there is an integrated relationship between intellectual capital and competitiveness, as intellectual capital contributes to helping the organization achieve efficiencies as well as creativity and innovation that enable it to create value and achieve its goals to confront its competitors.

Keywords---Intellectual capital, competitiveness, creativity.

1. Introduction

The effective utilization and management of individuals' intellectual and cognitive energies, transforming them into intangible assets, has become the ultimate goal of every organization. This is achieved through the intellectual capabilities and potential that individuals provide, making intellectual capital the true and essential capital of the organization. Moreover, it serves as the sole foundation for

building its competitive advantage, ensuring its position and distinguishing it from other competing organizations.

Intellectual capital elevates an organization to a significant standing in scientific, economic, and social fields. It has also become a key factor in establishing a strong competitive ability, ensuring the organization's survival and continuity in a knowledge-driven environment that generates new values and knowledge, fostering creativity, innovation, and excellence.

1.1. Problem Statement

Based on the above, the following problem statement is proposed:

What is the role of intellectual capital in supporting and enhancing an organization's competitive advantage?

The following sub-questions fall under this problem:

- What is meant by intellectual capital in an organization?
- What does an organization's competitive advantage mean?
- Is there a relationship between intellectual capital and an organization's competitive advantage?

1.2. Hypotheses

To address the problem statement, the following hypotheses are proposed:

- Intellectual capital is a fundamental pillar of organizations due to the skills and innovations it provides, which create opportunities for organizational success.
- An organization's competitive advantage lies in its ability to face competitors in the same market and those operating in the same economic sector.
- There is a relationship between intellectual capital and an organization's competitive advantage through the creativity, skills, and values that intellectual capital contributes to maintaining the organization's competitiveness.

1.3. Significance of the Study

The significance and role of intellectual capital lie in creating value for organizations and enhancing their creative and competitive capabilities. Numerous studies have highlighted that intellectual capital is the main driver for achieving an organization's competitive advantage. Additionally, Algeria's new economic approach, which focuses on human resources, underscores the need for research and interest in intellectual capital and its role within Algerian economic organizations to strengthen their ability to compete both locally and internationally.

The pioneering role of intellectual capital became particularly evident during the COVID-19 pandemic, as it facilitated the rapid and intelligent development of creative and innovative solutions. This study also serves as an addition to previous research on human resource management in the business world, further

reinforcing the role of intellectual capital within organizations. By doing so, it enables individuals to attain high-ranking positions that ensure personal success while also enhancing and sustaining the organization's competitive advantage.

1.4. Study Objectives

This study aims to achieve the following objectives:

- Attempt to identify intellectual capital and its role in achieving an organization's competitive advantage.
- Provide an extensive analysis and develop the theoretical concept of intellectual capital as one of the key variables in human resource management.
- Highlight the cognitive role of human capital and the challenges it faces, addressing them through structural, social, and psychological capital.
- Emphasize and clarify the integrated relationship between intellectual capital and competitive advantage, enabling organizations to achieve their goals and strengthen their market position.

1.5. Study Methodology

To achieve the study's objectives, answer the previously mentioned questions, and comprehensively address the theoretical aspects, it is essential to adopt a scientific approach suitable for economic and social studies. Therefore, this study employs the descriptive-analytical method to describe and analyze the concepts and theoretical foundations related to understanding the role of intellectual capital in achieving and enhancing an organization's competitive advantage.

1.6. Study structure

The study is divided into three main sections: A conceptual introduction to intellectual capital, fundamentals of competitive advantage, and the relationship between intellectual capital and competitive advantage.

- The first section explores the concept of intellectual capital, its importance, the mechanisms for building it, and the methods for preserving it, along with an overview of some intellectual capital management models.
- The second section focuses on defining competitive advantage, identifying its indicators, and outlining the factors that contribute to achieving it.
- The third section examines the relationship between intellectual capital and an organization's competitive advantage.

2. Conceptual Introduction to Intellectual Capital

Intellectual capital is considered the true capital of an organization due to the valuable knowledge and exceptional capabilities it provides. It has become a key indicator of an organization's ability to survive and sustain itself in a knowledge-driven environment that continuously generates new values and insights. In this section, we will explore the concept of intellectual capital, its importance, the mechanisms for building it, and the methods for preserving it, followed by an overview of some intellectual capital management models.

2.1. The Concept and Importance of Intellectual Capital

This section addresses the definition of intellectual capital and its importance for organizations.

2.1.1. Definition of Intellectual Capital

There are multiple definitions of intellectual capital provided by researchers and economists. The most significant of these definitions will be presented in the following table.

Table 1: Concepts of Intellectual Capital

Researcher	Definition
Yahiaoui Fatima Zahra	A set of intangible assets owned by the organization that contribute to enhancing its products. (Yahiaoui, 2017, p. 191)
Djelali Ben Abbo, Habib Thabeti, Sara Boukesri	The total intellectual skills and capabilities possessed by an organization's employees, as well as the innovations and creativity used in offering new products and services. It also includes the organizational culture that helps create value. (Abbo, 2017)
Aissat Larbi	Intellectual capital is the backbone of the administrative process and the beating heart of knowledge, leading to a competitive advantage when managed and nurtured effectively. (Al-Arabi., 2017–2018, p. 54)
Youngliang Ding, Guanshong Li	Intellectual capital is not just a type of fixed asset within an institution but rather a form of vital capital distinct from material capital. It is an effective resource for utilizing knowledge and a key tool for achieving objectives. (Ding, 2010, p. 213)
Wahiba Jazar	Intellectual capital consists of knowledge-based assets within organizations that serve as a core capability influencing their sustainability and competitive advantage. (Jazar, 2022, p. 41)

Source: Prepared by the researchers based on the references cited in the text.

2.1.2. The Importance of Intellectual Capital

Knowledge is a crucial factor that enables an organization to gain a competitive advantage. Therefore, organizations must possess and effectively manage it, leading to what is known as intellectual capital. Investing in intellectual capital is of great significance for organizations, as it keeps individuals actively engaged, stimulates their abilities, and fosters continuous development. Consequently, this contributes to the ongoing improvement of the organization. (Yahiaoui, 2017, p. 192)

2.2. Mechanisms for Building Intellectual Capital

Building a strong intellectual foundation is one of the greatest challenges faced by modern organizations. The increasing need for knowledge reserves, skills, innovation, and creativity has driven organizations to seek effective mechanisms and methods for developing their own intellectual capital. Due to diverse organizational cultures, these approaches vary. The key mechanisms include:

- Expanding Intelligence: This involves a set of cognitive processes used to achieve success. Human intelligence operates based on three main factors: learning, reasoning, and symbol processing.
- Encouraging Innovation and Renewal: This refers to identifying and defining problems, filtering ideas, selecting the most effective ones, and addressing challenges and risks. It also involves leveraging opportunities, strengths, and weaknesses within the organization.
- Practicing Integration in Relationships: Building intellectual capital requires strengthening an integrated management team across the entire organization, from top to bottom. It also involves attracting and preparing future leaders using methods aligned with the nature of human resources. (Jazar, 2022, p. 61).

Developing distinguished intellectual capital is a collective responsibility of all organizational members. Therefore, it is crucial to adopt the appropriate methods and strategies for effective and sustainable intellectual capital development. The following section will present practical and effective methods for building intellectual capital.

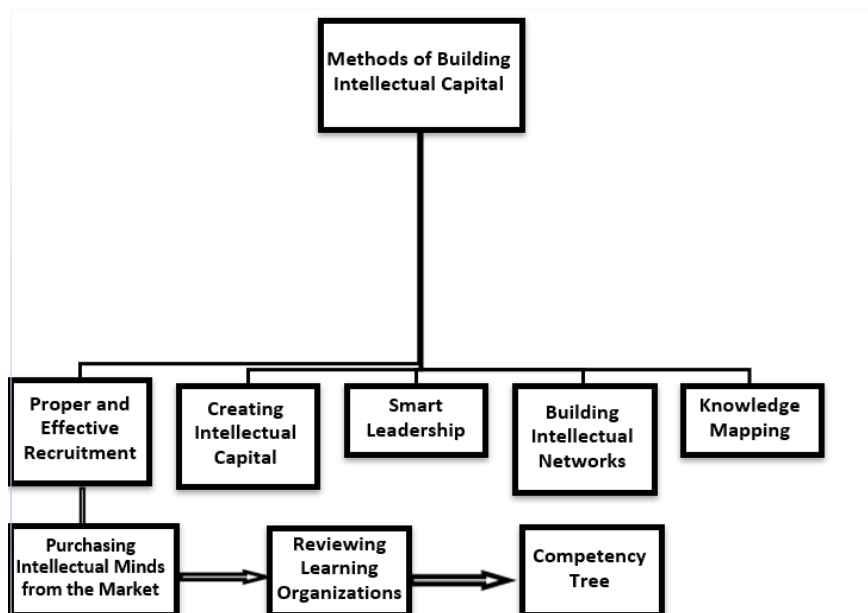


Figure 1: Methods for Building Intellectual Capital

Source: Prepared by the researchers based on (Jazar, 2022, p. 61).

We observe from the diagram on methods for building intellectual capital that there are five main effective approaches to achieving the goal:

- Proper and Effective Recruitment, which refers to searching for individuals with the capabilities and high skills that match the organization's activities and operations. This method consists of three main approaches:
 - Purchasing Intellectual Minds from the Market, meaning attracting rare minds.

- Competency Tree, which means searching for the knowledge component and the behavioral component.
- Reviewing Learning and Knowledge Organizations, through various universities and institutes to discover and recruit talents.
- Creating Intellectual Capital, which means forming its own intellectual capital.
- Knowledge Mapping, which refers to providing a visual presentation of the critical knowledge leading to achieving the organization's goal.
- Building Intellectual Networks, which means forming a team similar to a spider web, where an innovative group interacts and learns from one another.
- Smart Leadership, which means using leadership styles capable of creating influence and experiences within the organization.

2.3. Methods for Preserving Intellectual Capital

Preserving intellectual capital refers to the total administrative policies and procedures adopted by an organization to maintain its knowledge stock of skills, expertise, and knowledge through various methods and means. The most notable of these include: (Youssef, 2016/2017, p. 39)

- Activating material and moral incentives;
- Addressing organizational advancement;
- Combating organizational frustration;
- Reducing opportunities for organizational alienation;
- Enhancing organizational excellence.

2.4. Intellectual Capital Management Models

Managing intellectual capital is an extremely challenging task because most intellectual assets do not favor management and control; rather, they tend to resist in many cases. There are several models for managing intellectual capital, the most important of which will be illustrated in the following table.

Table 2: Illustrates: Models of Intellectual Capital Management

Model	Management Approach
Stewart Model	This model encourages: Utilizing ideas presented for the benefit of the organization; Providing resources, assisting in building an internal network of relationships, and enhancing and supporting job opportunities; Creating an atmosphere of freedom for ideas and innovation while combating constraints that kill ambition and hinder creativity; Establishing an excellent database to maintain an efficient information system.
Daniel Model	This model emphasizes: Starting with strategy by defining the role of knowledge in business and illustrating the impact of intellectual investments on product development; - Assessing competitors' strategies and intellectual assets, i.e., understanding and evaluating the competitive environment containing intellectual capital; Creating a dedicated file for intellectual assets: What do you own? What do you

Model	Management Approach
	use? Where does it belong?; Evaluating intellectual assets and their costs, and identifying their needs to maximize their value; Compiling a knowledge portfolio, repeating the process, and classifying intellectual assets based on their value and importance.
Ghen Model	This model is divided into four interconnected elements: Human Capital: The capabilities, creativity, and attitudes of employees; Customer Capital: Market capability, market density, and customer loyalty; Innovation Capital: Achievements in innovation, innovation mechanisms, and a culture of ideas; Structural Capital: General culture, organizational structure, organizational learning, processes, and information systems.

Source: Prepared by the researchers based on (Youssef, 2016/2017, p. 34).

3.Fundamentals of Competitiveness

Competitiveness is no longer just a necessity limited to institutions or companies; it has become an imperative for the survival of an entire nation and an urgent and inevitable need for countries that seek to persist, develop, and advance. Today, competitiveness has become a matter of national security, as countries that lack competitive capability no longer have a presence on the international stage, and institutions without competitiveness have no place among other organizations at the local level. Thus, competitiveness has become a pressing necessity for individuals, institutions, organizations, and nations. (Hindi, 2020, p. 13).

3.1. Definition of Competitiveness

Competitiveness is defined as: "The way in which an institution or a country can employ specific measures and procedures that distinguish it from its competitors and enable it to achieve superiority and excellence over them." This definition highlights that competitiveness—whether for an institution or a country—refers to the methods and strategies used to outperform competitors.

Competitiveness can also be defined as: "The institution's ability to face other competing institutions in the same market for the same types of goods and services, as well as its ability to achieve efficiencies equal to or greater than those of its competitors." This definition implies that an institution possesses competitiveness if it can compete against rivals in the same market and those producing the same goods and services.

At the macro-economic level, competitiveness is defined as: "A country's ability, through its national industries, to produce competitive goods and services in international markets." The Organization for Economic Co-operation and Development (OECD) defines it as: "The degree to which a country, under free and fair market conditions, can produce goods and services that successfully penetrate international markets while simultaneously maintaining and expanding the real incomes of its citizens in the long run." These definitions indicate that a country's competitiveness is viewed from two perspectives (Asia, 2010, p. 17):

- The ability of its domestic goods and services to compete in foreign markets.

- The ability to increase citizens' welfare by raising their incomes.

3.2. Competitiveness Indicators and Factors for Achieving It

Competitiveness indicators vary depending on the level of analysis, and competitiveness relies on several factors for its realization. These elements will be explained in detail as follows:

3.2.1. Analysis of Competitiveness Indicators

There are multiple indicators used to assess an institution's competitiveness across different aspects of its activities, including:

- Commercial competitiveness
- Research competitiveness
- Organizational competitiveness
- And others...

Table 3: Illustrates: The types of these capabilities and their indicators

Type M \ Type Q	Quantitative Indicators	Qualitative Indicators
Commercial Competitiveness	Market coverage ratio, market shares of the company, profit margin ratio per product, sales growth rate.	The degree of differentiation of the company's products and services from competitors, customer loyalty, customer renewal, and the importance of after-sales services.
Research Competitiveness	The share of research and development in the company's capital, research and development expenses, the number of patents filed, and the number of researchers in the company.	The rate of product renewal in the company, the degree of process innovation, the adoption of new methods and materials, and the design of new equipment and techniques.
Technical and technological competitiveness	Qualification level, technological advancement and progress, average age of machines and equipment, technological monopoly.	Production capacity, reason for utilizing this production capacity, specialization and competencies of the workforce.
Organizational competitiveness.	The type of organizational structure adopted by the institution, the suitability and alignment of the strategic structure, the degree of decentralization within the institution, the quality of the information system, and the value of management control.	

Type M \ Type Q	Quantitative Indicators	Qualitative Indicators
Financial Competitiveness	Balance: Volume of private funds / Debt level, Working capital, Treasury. Profitability: Profit, Self-financing capacity, Role of capital, Cost of borrowed capital, Return on invested capital and private capital.	
Strategic and Operational Competitiveness	Cost Reduction / Time Reduction	Competitive Advantage: Product quality, quality of after-sales services, low selling price, consumer service price.

Source: (Zakia, 2007, p. 102).

From the above, we conclude that the various approaches a company can focus on to improve and develop its competitiveness involve relying on both quantitative and qualitative indicators. This includes strategic and operational competitiveness, which can be achieved by reducing costs and lead times as quantitative indicators, and by establishing a competitive advantage (such as product quality, quality of after-sales services, low selling prices, and consumer service pricing) as qualitative indicators, among others.

On the other hand, the competitiveness indicators of a company differ from those of a sector, which in turn differ from the competitiveness indicators of a country, as follows:

A. Regarding the company

The following diagram illustrates this:

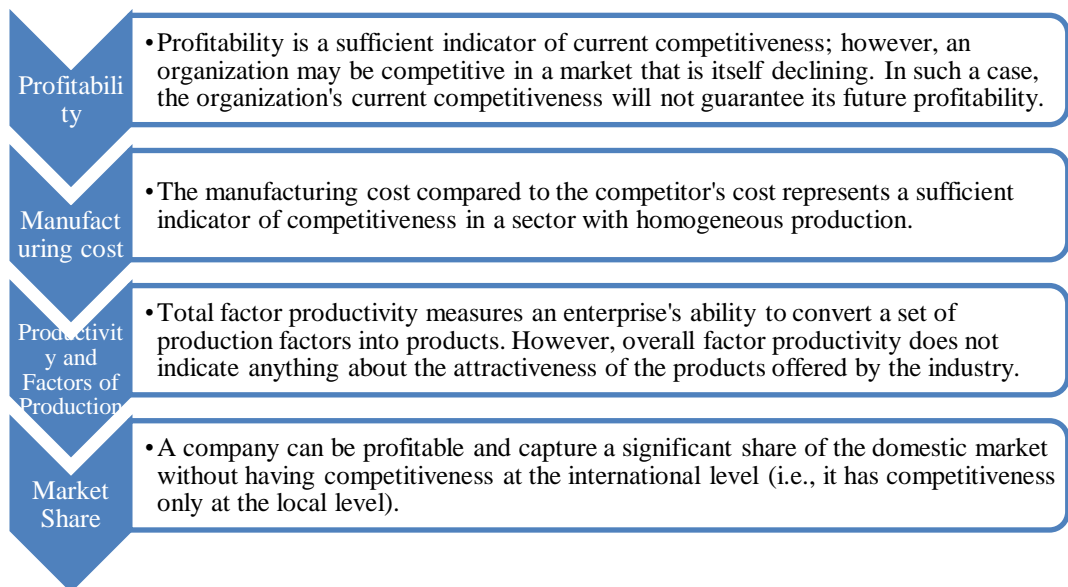


Figure 2: illustrates the competitiveness indicators of the company.

Source: Prepared by the researchers based on (Asia, 2010, p. 20).

We conclude that the indicators of an institution's competitiveness lie in profitability and manufacturing costs, which serve as sufficient indicators of competitiveness in a productive activity. Additionally, total factor productivity measures the institution's ability to transform a set of production factors into final products.

B. Regarding the Economic Activity Sector (Industry)

Determining competitiveness at the sector level requires that differences between institutions within the sector be minimal. These differences include production factors, production lifespan, and other elements. The evaluation of a sector's competitiveness is carried out by comparing it with a similar sector in another country, using key indicators illustrated in the following figure.

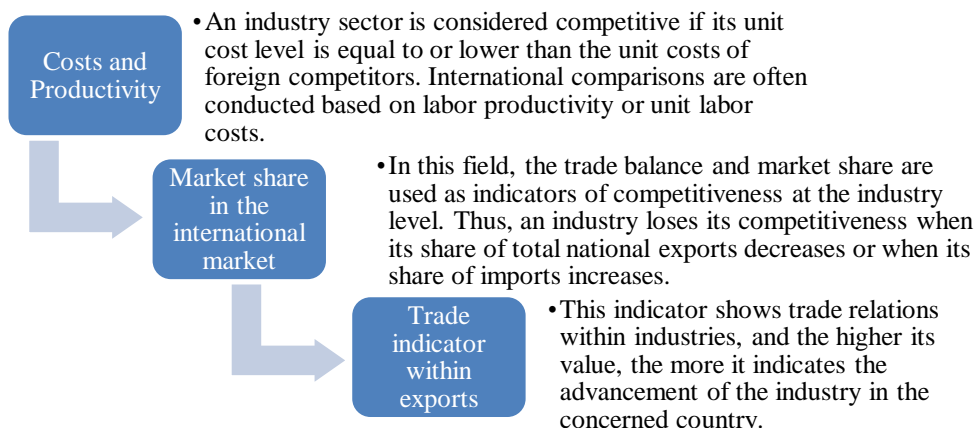


Figure 3: Illustrates the indicators used in economic activity.

Source: Prepared by the researchers based on (Asia, 2010, p. 20).

It is evident that the indicators used in economic activity include costs and productivity, where the unit cost level should be equal to or lower than that of foreign competitors. On the other hand, market share in the international market and domestic market share serves as indicators of competitiveness at the sector level.

C. At the national level

There are several proposed indicators for national competitiveness, and the most important ones are outlined in the following table:

Table 4: Illustrates: The proposed indicators for national competitiveness

Indicators	Proposed Indicators for National Competitiveness
Real Per Capita Income	The growth of real per capita income and productivity are interconnected concepts. Real per capita income depends on total factor productivity, capital, natural resources, and trade limits. An increase in total factor productivity raises individual income, which in turn enhances the country's wealth in natural resources and capital, while also improving trade.

Indicators	Proposed Indicators for National Competitiveness
Trade Outcomes: Various measures include	Trade Balance: A trade deficit indicates weak national competitiveness, while a surplus reflects strength.

Source: Prepared by the researchers based on (Asia, 2010, p. 20).

A deficit in the trade balance may arise from a budget deficit or a low savings rate combined with a low level of private investment in the overall economy. A twin deficit occurs when the current account deficit is accompanied by a budget deficit (Al-Ghazali, 2003, p. 23). The competitiveness indicators for the enterprise, the sector (industry), and the country can be summarized as follows:

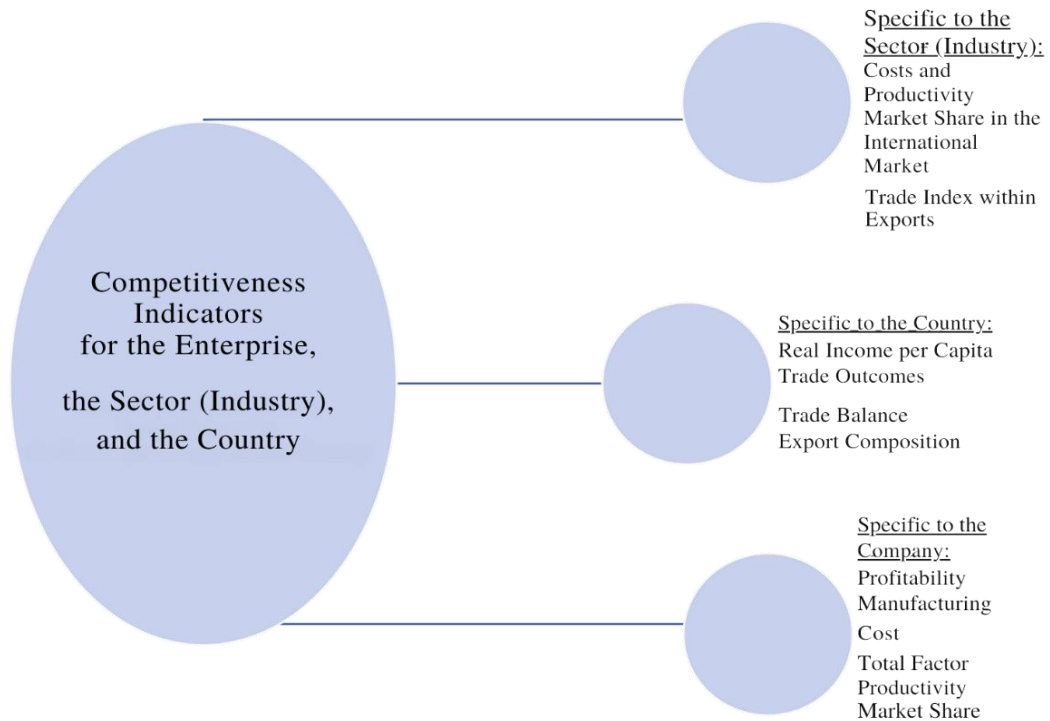


Figure 4: Competitiveness indicators of the institution and sector (industry), country

Source: Prepared by the researchers based on the above

The previous figure accurately illustrates the competitiveness indicators and their status at different levels, including the enterprise, the sector, and the country. These indicators serve as the fundamental sources and key drivers for enhancing competitiveness.

3.2.2. Factors for Achieving Competitiveness

There are several factors for achieving competitiveness (Asia, 2010, p. 23):

- Low-Cost Production Processes: An enterprise with a highly efficient production system or access to low-cost resources can manufacture products at a lower cost, thereby gaining a competitive edge over its rivals.

- **Technological Innovation:** The significance of technological innovation lies in the fact that the industrial environment and market are unstable due to constant changes. Competing enterprises within the industrial sector do not merely wait for changes to occur and then react; rather, they actively participate in and drive these changes. For this reason, technological innovation plays a crucial role in ensuring the sustainability of any enterprise operating in a competitive industry.
- **Commitment to International Quality Standards:** Over time, quality has become a strategic variable within enterprises. It is no longer a passing trend or an exclusive domain of large corporations but rather an unavoidable managerial necessity, especially given the current conditions of modern markets. However, measuring and defining product quality can sometimes be challenging. No matter how technologically advanced or superior a product may be, it holds little significance if consumers do not recognize its value.
- **Enhancing Workforce Skills and Increasing Productivity through Training and Motivation:** Modern enterprises no longer rely on cheap, unqualified labor. Instead, they place great emphasis on training employees, adapting them to technological advancements, and motivating them to perform at the required level, ensuring positive outcomes.
- **Marketing Capabilities:** The marketing function is one of the key pillars of an enterprise's competitiveness. It provides the ability to adapt to environmental changes and consumer preferences through market studies and consumer behavior analysis.
- **Competitive Intelligence:** It plays a prominent and effective role in enabling an enterprise to achieve the desired level of adaptability by providing valuable information about current and potential competitors.

From the above, it is clear that enterprises have multiple alternatives to achieve competitiveness, such as cost efficiency, quality, skilled labor, and others. They can focus on all or some of these factors simultaneously as a strategy to enhance their ability to compete in an intensely competitive environment.

4. The Relationship Between Intellectual Capital and Competitiveness

After discussing the general and theoretical concepts of both intellectual capital and competitiveness as key goals for any successful organization striving for excellence, innovation, and value creation, it is essential to clarify the relationship between these two variables and how intellectual capital contributes to achieving and strengthening competitiveness.

Human capital is a fundamental and essential component of intellectual capital, serving as its core foundation. It represents the intellectual strength of an organization and is the most challenging aspect of intellectual capital to manage, attract, and retain in a way that ensures the organization's competitive edge.

For intellectual capital to enhance competitiveness, certain factors must be present, including knowledge, experience, innovation, teamwork, and quality. Organizations must focus on strengthening and maintaining these elements to ensure their long-term competitive advantage.

It can be said that there is a strong complementary relationship between intellectual capital and competitiveness. Intellectual capital serves as an effective tool for achieving and enhancing an organization's competitive ability by adopting mechanisms to preserve it. Based on the discussion presented, we propose the following model, which illustrates the relationship between intellectual capital and an organization's competitiveness in creating value, fostering innovation, and achieving excellence.

The formation of intellectual capital results from the integration of four interconnected elements: human capital, structural capital, social capital, and psychological capital. Focusing on and maintaining these elements leads to high competitiveness, resulting in innovation, quality, efficiency, and value creation for the organization.

5. Conclusion

Studies on intellectual capital confirm its ability to positively and rapidly impact the fate of organizations. It plays a crucial role in achieving high competitiveness, which has driven organizations to strengthen and solidify all components of intellectual capital in pursuit of their goals. As a result, major corporations leverage and invest in this hidden wealth to attain success, innovation, and excellence in the business world. In the following section, we will examine the study's hypotheses, present the findings, and provide recommendations and suggestions based on the conclusions drawn from this research.

5.1. Hypothesis Testing

We will now examine the hypotheses related to this study:

- First Hypothesis: Intellectual capital is a fundamental pillar of organizations due to the skills and innovations it fosters, which enable organizations to seize opportunities for success. Therefore, large organizations strive to attract, train, and retain the best human resources to leverage intellectual capital, which contributes to skills development, creativity, and excellence. This confirms the validity of the first hypothesis.
- Second Hypothesis: An organization's competitiveness lies in its ability to face rivals in the same market as well as those operating in the same economic sector. Competitiveness is determined by the strategies and measures an organization employs to achieve superiority and distinction over its competitors. It also reflects an organization's ability to develop competencies equal to or exceeding those of its rivals. This confirms the validity of the second hypothesis.
- Third Hypothesis: There is a direct relationship between intellectual capital and organizational competitiveness, as intellectual capital contributes to innovation, skills development, and value creation, all of which sustain and enhance competitiveness. This relationship is integrative and complementary, ensuring coordination, as intellectual capital serves as the essential and dynamic core that guarantees and strengthens an organization's competitive advantage. This confirms the validity of the third hypothesis.

5.2. Study Findings

Through our analysis of this study, we have reached the following conclusions:

- Intellectual capital plays a crucial role in achieving and enhancing an organization's competitiveness and value creation. This is evident through the interactive impact of its dimensions, namely: structural capital, human capital, social capital, and psychological capital, which collectively contribute to developing a successful and effective intellectual capital that strengthens the organization's competitive edge.
- Intellectual capital represents a set of intangible values possessed by individuals and organizations, as it significantly contributes to the enhancement and sustainability of an organization's competitiveness.
- Organizations must recognize the importance of intellectual capital as a strategic choice to gain a strong competitive advantage that enables them to achieve their goals effectively.
- The adoption of intellectual and intangible assets, including intellectual capital, is essential for fostering innovation and value creation, ultimately ensuring the organization's long-term competitiveness.

5.3. Recommendations

- Prioritizing human capital by attracting, developing, and training talent to build effective intellectual capital that enhances the organization's competitiveness.
- Retaining qualified and experienced human capital and preventing its loss to competitors by improving job positions—ensuring the right person is in the right place—which maximizes the benefit of their expertise across the organization.
- Establishing clear promotion programs and mechanisms, which not only strengthen intellectual capital's trust in the organization but also foster competition, ambition, and creativity.
- Encouraging teamwork and collaboration within the organization to enhance performance, facilitate knowledge sharing, and develop skills, ensuring the presence of strong intellectual capital that contributes to maintaining organizational competitiveness.

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