Expectations of the formation of intellectual capital in a university in central Mexico

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ABSTRACT

Within the framework of university governance, talent training is oriented towards the Sustainable Development Goals (SDGs), although during the period of the health crisis, the system changed from in-person to virtual. Immersive learning excluded guidelines for access to empirical knowledge and consolidated other forms of teaching. Therefore, the purpose of this work was to contrast an empirical model with the theory of intellectual capital. The results demonstrate the prevalence of the self-knowledge factor which would be related to the dimension of human capital. The formative implications of the findings suggest that pedagogical sequences should include values that guide people's knowledge as learning heuristics.

Keywords: Interacting Capital, Academic Training, University Governance

INTRODUCTION

The history of intellectual capital dates back to the last decades of the 20th century, when companies began to recognize the importance of intangible assets and not only tangible ones. Intellectual capital refers to the value of an organization's knowledge, skills, experiences and relationships that contribute to its ability to generate value. 1960s-1970s and emergence of the knowledge economy. In these decades, a change was observed in the global economy towards the importance of knowledge and information. Companies began to realize that knowledge and innovation were essential for competitive advantage.

1980s and development of the theory of intellectual capital. The term "*intellectual capital*" began to gain popularity in the 1980s. Authors such as Leif Edvinsson and Thomas A. Stewart played a fundamental role in the development of intellectual capital theory. Edvinsson, in particular, is known for his work at Skandia, a Swedish insurance company, where he applied intellectual capital concepts to improve organizational performance.

1990s and intellectual capital report. In 1991, the Swedish consulting firm Skandia published a report on intellectual capital that attracted international attention. This report highlighted the importance of intangible assets and advocated the need to measure and manage these assets effectively. In 1997 the book *"The Wealth of Knowledge"* by Thomas A. Stewart argued that knowledge and information were assets as valuable as tangible ones. The book contributed to global awareness about the importance of intellectual capital.

2000s and development of measurement models. During this decade, several models and methods were developed to measure intellectual capital. One of the best known is the Balanced Scorecard, which includes financial and non-financial perspectives, recognizing the importance of intangible assets.

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News and integration in business management. Intellectual capital has been increasingly recognized as a crucial component in strategic decision making and business management. Organizations are looking for ways to measure, manage and leverage their intellectual assets to improve innovation, efficiency and competitive advantage.

The history of intellectual capital reflects the transition from an economy focused on tangible assets to a knowledge economy, where information and knowledge are essential for business success. This change has led to greater awareness of the need to measure and manage intellectual capital effectively. The formation of intellectual capital has been a gradual process that has evolved as organizations have recognized the importance of intangible assets.

Background (19th and early 20th centuries): In the Industrial Revolution, the value of companies was strongly linked to their physical assets, such as land, buildings and machinery (Lirios et al., 2022). At that time, knowledge and information were not considered critical assets to the same extent as they are today.

1960s-1970s and knowledge economy: Over time, especially starting in the 1960s, the global economy experienced a shift towards the importance of knowledge and information. Human capital and innovation capacity were recognized as essential to business success. 1980s and beginnings of the concept of intellectual capital: During this decade, the first signs of recognition of the value of knowledge and experience began to emerge. However, the term "*intellectual capital*" was not yet widely used.

1990s and rise of intellectual capital: The 1990s were crucial for the development of the concept of intellectual capital. Swedish consulting firm Skandia played a key role in publishing a report in 1991 that highlighted the need to measure and manage intellectual capital. Figures such as Leif Edvinsson and Thomas A. Stewart contributed significantly to the conceptualization and dissemination of the term. In 1997 with the publication of the book "*The Wealth of Knowledge*" by Thomas A. Stewart, knowledge was a valuable asset and companies must recognize it and manage it effectively to prosper in the modern economy.

2000s onwards and integration into business management: As the new millennium progressed, the concept of intellectual capital became more fully integrated into business management. Organizations began to develop models and metrics to measure their intangible assets. Approaches such as the Balanced Scorecard were adopted, which incorporates financial and non-financial dimensions, including aspects related to intellectual capital.

Current status of intellectual capital as a strategic asset: Intellectual capital is considered an essential strategic asset for organizations. The ability to learn, innovate and adapt has become critical in an increasingly competitive and changing business environment.

The formation of intellectual capital has been a process that has evolved over time, from a time when tangible assets were predominant to today, where knowledge and information are recognized as key factors for business success. This shift has led to greater awareness and deliberate management of intellectual capital in organizations.

The migration of intellectual capital refers to the movement and transfer of knowledge, skills and human talent from one place to another, whether between organizations, sectors or even countries. The history of intellectual capital migration is complex and multifaceted, influenced by economic, social, political and technological factors.

Migration of talent in the Industrial Revolution: During the Industrial Revolution, there was a significant migration of workers and experts between regions and countries. The demand for specific skills in new industries led to the mobility of skilled workers.

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Development of Knowledge Centers: Over time, certain places became centers of knowledge and excellence in specific areas. Examples include Silicon Valley in technology, the city of Boston in biotechnology, and Cambridge in the United Kingdom in academic research.
Globalization and Technology: Globalization and the advancement of information technology have facilitated the migration of intellectual capital globally (Carreón-Guillén et al., 2020). Multinational companies hire experts from around the world, and professionals seek international opportunities to expand their skills and experiences.

Migration of Scientists and Academics: The mobility of scientists and academics has been a key characteristic in the history of the migration of intellectual capital. Researchers often move to institutions or countries where they find better resources, collaborations, and research opportunities.

Brain Drain and Brain Gain: In some regions, especially developing countries, there have been concerns about "*brain drain*" which refers to the loss of key talent migrating to more developed countries. On the other hand, some places experience a "brain gain" when they attract talent from around the world.

The migration of intellectual capital also poses ethical and political challenges (Aguayo et al., 2020). It can generate tensions between countries and organizations when they are perceived to be taking advantage of the intellectual resources of others. Today, the migration of intellectual capital is often linked to the development of innovation ecosystems. Cities and regions that encourage collaboration, research and investment attract innovative talent and companies. Educational institutions play a crucial role in the migration of intellectual capital by producing skilled professionals who can then contribute to various environments.

The migration of intellectual capital has been a constant phenomenon throughout history, driven by the search for opportunities, the demand for specialized skills and globalization. As organizations and countries compete for talent, effective management of this capital becomes essential for growth and innovation.

Intellectual Capital Theory is a conceptual framework used to understand and measure an organization's intangible resources, including the knowledge, experience, skills, and intellectual property that contribute to a company's value and competitive advantage. This approach recognizes that the value of a company is not only derived from its tangible assets, such as buildings, machinery or inventory, but also from its intangible assets, such as human capital, structural capital and relational capital. Three main components can be identified in the Theory of Intellectual Capital:

Human Capital: Refers to the knowledge, skills, experience and creativity of an organization's employees. It includes training, education and individual capabilities that contribute to the development of the company.

Structural Capital: Refers to the intangible resources of the organization that are not directly attributable to individuals, such as information systems, patents, databases, operating procedures, organizational culture, policies and manuals (Lirios et al., 2022).

Relational Capital: This component encompasses the company's relationships and connections with customers, suppliers, strategic partners and other external actors (Lirios et al., 2022). This is the network of relationships that the company has developed and that contributes to its value.

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The Intellectual Capital Theory is relevant because it helps organizations recognize the importance of intangible assets and manage them more effectively. Various models and methodologies are used to measure and manage intellectual capital, with the aim of improving strategic decision making, driving innovation, strengthening competitiveness and maximizing the long-term value of a company.

The theory of intellectual capital formation focuses on the process through which organizations create, develop and manage their intangible resources to generate value and competitive advantage. It focuses on how knowledge, skills and experience are acquired, accumulated and used within an organization. This theory recognizes that intellectual capital is not static, but is formed and evolves through different processes and activities. Some key aspects of the theory of intellectual capital formation include:

Organizational Learning: Refers to the ability of an organization to acquire knowledge, both from its external environment and from its own internal experiences. It involves processes of collecting, interpreting and applying information to improve performance and adaptability.

Knowledge Management: It consists of identifying, capturing, storing, sharing and using knowledge effectively within the organization. It involves creating systems, practices and culture that facilitate the sharing and utilization of knowledge to improve performance.

Innovation: Intellectual capital is strengthened through an organization's ability to generate new ideas, products, processes or services (Cruz Garcia et al., 2020). Innovation is essential for the growth and continued development of intellectual capital.

Organizational Culture: The culture of an organization plays a crucial role in the formation of intellectual capital (Hernández-Gracia et al., 2021). A culture that encourages learning, collaboration, creative thinking and experimentation tends to promote greater development of intellectual capital.

The theory of intellectual capital formation seeks to understand how organizations can more effectively manage their intangible resources to improve their performance and their ability to adapt to changing environments. This theory helps companies focus on strategies and practices that promote the creation and strengthening of intellectual capital, which can have a significant impact on their long-term competitiveness and success.

The theory of intellectual capital migration focuses on the phenomenon of movement or transfer of knowledge, skills, talent and experience from one organization to another, or even between different sectors, regions or countries. This concept is related to the idea that intellectual capital is not statically linked to a single entity, but can move and be shared between organizations. Some important aspects of intellectual capital migration theory include:

Talent Mobility: This aspect refers to the transfer of highly qualified individuals, with specific knowledge and skills, from one organization to another (Guillén et al., 2014). It may involve hiring experienced staff from one company by another, sharing talent across industries, or acquiring skills through work experience in different environments.

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Knowledge Transfer: It involves the exchange and dissemination of knowledge and best practices between organizations. This can occur through strategic partnerships, collaborations, acquisitions, external consulting, or even employee rotation between companies.

Impact on Innovation: The migration of intellectual capital can influence the innovation capacity of an organization, since the introduction of new perspectives, ideas and approaches from external sources can boost creativity and the development of new solutions (Lirios, 2009).

Attraction and Retention Factors: Organizations that want to attract and retain talent must consider how to offer an environment conducive to the development and retention of intellectual capital. This includes aspects such as organizational culture, growth opportunities, competitive compensation and professional development programs.

The intellectual capital migration theory recognizes the importance of human resource mobility and knowledge exchange in a dynamic business environment. Understanding how to manage, attract and retain intellectual capital becomes crucial for organizations seeking to stay competitive and adapt to changes in the market and industry. Intellectual capital is commonly broken down into three main dimensions that encompass different aspects of an organization's intangible resources. These dimensions are:

Human Capital: Refers to the knowledge, skills, experience and innovative capacity of the people who are part of the organization. This dimension includes education, training, creativity, technical and professional skills, as well as the leadership capacity of employees. Human capital is essential for the generation of ideas, innovation and the effective execution of tasks and strategies.

Structural Capital: This dimension encompasses intangible assets that are not directly linked to individuals, but are embedded in the systems, processes, technology, database, patents, organizational culture and other resources that allow the organization to operate efficiently. Structural capital provides the context and infrastructure so that human capital can work effectively and can be transformed into tangible value for the company.

Relational Capital: Refers to the relationships that the organization maintains with its key stakeholders, such as customers, suppliers, strategic partners, communities and other external actors. This dimension includes the quality of relationships, the company's reputation, customer trust and the network of contacts. Relational capital is vital to establishing strategic alliances, facilitating collaboration and maintaining a strong position in the market.

These three dimensions of intellectual capital do not exist independently, but are interconnected and complement each other. The effective combination of these dimensions and their appropriate management can generate sustainable value for an organization, helping to improve its competitiveness, innovation and ability to adapt to a constantly changing business environment. The formation of intellectual capital is based on the creation, development and management of intangible resources within an organization. Various dimensions or relevant aspects can be identified that contribute to this training:

Organizational Learning: This dimension focuses on an organization's ability to acquire, share, interpret and apply new knowledge effectively. It includes processes such as the

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identification of lessons learned, adaptation to changes in the environment, continuous improvement and the integration of new ideas for the growth and evolution of the company.

Culture of Innovation and Creativity: This dimension refers to the environment in which creativity, experimentation and innovation are encouraged and promoted. An organizational culture that encourages the generation of new ideas, the taking of calculated risks and learning from mistakes contributes significantly to the formation of intellectual capital.

Knowledge Management: The knowledge management dimension is related to the identification, capture, storage, distribution and effective use of information and knowledge within the organization. This may include implementing information systems, creating databases, documenting good practices and promoting collaboration platforms.

Development of Skills and Capacities: This dimension implies investment in the development of skills, competencies and capabilities of employees. It refers to continuous training, education programs, mentoring, training and other activities that contribute to strengthening the skills and knowledge of personnel.

Knowledge Transfer: This dimension focuses on how knowledge is shared and transferred within the organization, either formally through training programs or informally through interactions between colleagues. Facilitating the effective transfer of knowledge is essential for the formation and accumulation of intellectual capital.

These dimensions are interrelated and complement each other in the process of forming the intellectual capital of an organization. Attention to and strategic management of these dimensions can enhance a company's ability to adapt, innovate, and compete in an ever-changing business environment.

The migration of intellectual capital involves the movement or transfer of knowledge, skills, talent and experience from one place to another, whether between organizations, industries, regions or countries. Important dimensions related to intellectual capital migration include:

Talent Mobility: This dimension refers to the physical or virtual transfer of highly qualified individuals, experts in a specific field or with specialized skills, from one organization to another. It may include the hiring of key personnel, the rotation of employees between companies, the exchange of talents between industrial sectors or the arrival of external experts to provide specific knowledge.

Knowledge Transfer: This is the exchange and dissemination of knowledge and experiences between organizations. This can occur through collaborations, strategic alliances, acquisitions, consultancies, mentoring programs or exchange of good practices. The effective transfer of knowledge is essential for the mutual enrichment and growth of the organizations involved.

Impact on Innovation: The migration of intellectual capital can have a significant impact on the innovation capacity of a receiving organization. Incorporating new perspectives, ideas and approaches from external sources can boost creativity and facilitate the generation of new innovative solutions or products.

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Attraction and Retention Factors: This dimension focuses on understanding and strengthening the aspects that attract and retain talent in an organization. It includes factors such as an attractive organizational culture, professional development opportunities, competitive benefits, work-life balance policies, among others, that influence people's decision to migrate or remain in a company.

Networks and Collaborations: The migration of intellectual capital is also related to the formation and maintenance of networks and collaborations between individuals, companies and other key actors. These networks can facilitate ongoing knowledge sharing, support innovation, and create opportunities for professional and business growth.

These dimensions show the complexity and variety of aspects involved in the intellectual capital migration process, highlighting the importance of strategically managing the flow of knowledge and talent between different entities to benefit growth and innovation in organizations.

There are several models and approaches to measure and manage intellectual capital in an organization. These models provide conceptual frameworks to identify, evaluate and enhance intangible resources. Some of the best known models are:

Skandia Navigator Model: Developed by Skandia Insurance Company, this model is based on five main perspectives: Human Capital, Structural Capital, Customer Capital, Process Capital and Financial Capital. It provides a framework for evaluating and managing intangible assets in these areas.

Integrated Command Model: Although originally focused on measuring organizational performance through four perspectives (Financial, Customer, Internal Processes, and Learning and Growth), it has also been adapted to include intellectual capital indicators, recognizing the importance of intangible assets. in business success.

Model of knowledge capital and human resources focused on value creation. Approaches such as the "*Intellectual Capital Index*" and the "*Knowledge Tree*" are examples of their contributions to this field.

Competitive Intelligence and Organizational Dynamics Model: It focuses on knowledge management, the detection of environmental signals, competitive analysis and the adaptability of the organization to maintain a sustainable competitive advantage.

IC Model 3 (Cuban Intellectual Capital Index): Developed in Cuba, this model includes three main components: Human Capital, Structural Capital and Relational Capital. It seeks to measure the value of intellectual capital in Cuban organizations. These models provide theoretical frameworks and methodologies to identify, measure and manage the intangible assets of an organization. However, it is important to note that there is no single model that is applicable to all organizations, and companies often adapt and combine different approaches to meet their specific needs and particular business contexts.

The formation of intellectual capital is addressed through different models that offer perspectives to understand how intangible resources are created, developed and managed in an organization. Some of the prominent models in this field include:

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Knowledge creation model consists of four modes of knowledge conversion: Socialization (exchange of tacit knowledge), Externalization (converting tacit knowledge into explicit), Internalization (incorporating explicit knowledge into tacit knowledge) and Combination (integration of explicit knowledge).

Organizational learning model is based on individual and organizational learning, focusing on the detection and correction of errors through the design of policies and practices that encourage continuous learning.

Knowledge Management Model emphasizes the creation, identification, capture, storage, distribution and application of knowledge within the organization. Its approach focuses on the systematic management of these processes to improve decision making and organizational performance.

Sanchez and Heene's Knowledge Path Model: This model describes how organizations can create, transfer and use knowledge . It is based on three processes: Knowledge Generation (creation of new knowledge), Knowledge Transfer (knowledge exchange) and Knowledge Utilization (effective application of knowledge).

Gold, Malhotra and Segars Knowledge Conversion Model: Proposes an approach that considers the conversion of knowledge from tacit to tacit, tacit to explicit, explicit to explicit and explicit to tacit. These processes are called socialization, externalization, combination and internalization, respectively.

These models offer conceptual frameworks to understand how intellectual capital is formed and managed in an organization. Each model has its own characteristics and approaches, and companies can select and adapt those that best fit their specific needs and business context.

The migration of intellectual capital, which refers to the movement or transfer of knowledge, skills and talent between different entities or organizations, is not usually associated with specific models as in the case of the formation or measurement of intellectual capital (Aldana-Balderas et al., 2018). However, there are approaches and strategies that organizations can use to manage and leverage the migration of intellectual capital. Some of these approaches include:

Knowledge Management and Talent Retention Programs: Organizations can implement specific knowledge management programs that facilitate the retention and sharing of knowledge among employees. These programs could include the creation of shared databases, mentoring systems, internal training programs, and other initiatives that encourage knowledge sharing.

Strategic Alliances and Collaborations: Establishing strategic alliances with other organizations or educational institutions can facilitate the transfer of knowledge and talent. These collaborations may include personnel exchange agreements, joint research and development projects, shared training programs, among others.

Recruitment and Retention Policies: Developing recruitment policies that encourage the acquisition of key talent and the retention of talented employees can contribute to the effective migration of intellectual capital (Sanchez, Guillen & Garcia-Lirios, 2023). Offering attractive benefits, career growth opportunities, and a stimulating work environment can help retain valuable talent in the organization.

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Professional Networks and Communities of Practice: Encouraging participation in professional networks, interest groups and communities of practice can facilitate the transfer of knowledge and experiences between individuals and organizations. These networks can be both internal (within the organization) and external (with other organizations or professionals in the same sector).

While there are no specific models recognized for the migration of intellectual capital, these strategies and approaches can help organizations more effectively manage the movement and transfer of knowledge, skills and talent between different entities, thereby maximizing the value of their assets intangible assets.

Measuring intellectual capital involves evaluating and quantifying an organization's intangible assets, such as knowledge, skills, innovation and relationships, which significantly contribute to its value and performance (Espinoza Morales et al., 2022). There is no one-size-fits-all approach to measuring intellectual capital, as it can be complex due to the intangible nature of these assets. However, several approaches and methodologies are used to address this measurement:

Financial and monetary approaches: These approaches attempt to quantify the value of intellectual capital by assigning monetary values to intangible assets (Morales & García Lirios, 2023; Morales & Lirios, 2023). Some methods include estimates based on the acquisition cost of intangible assets, valuation of trademarks, patents or other intellectual property assets, and determining the market value of the intellectual property.

Performance-based approaches: They focus on identifying and measuring key performance indicators related to intellectual capital. This may include metrics such as retention rate of key employees, time spent on training and development activities, number of patents or innovations produced, customer satisfaction derived from interaction with employees, among others.

Scorecard and dashboard approaches: They use indicator systems or control boards that integrate multiple metrics related to intellectual capital, such as customer satisfaction, the level of staff knowledge, operational efficiency, the quality of innovation and the relationship with the stakeholders (Aguayo et al., 2019).

Survey and qualitative evaluation methodologies: They are based on questionnaires, surveys or qualitative evaluations to collect information on the perception of employees, clients or stakeholders about the contribution of intellectual capital in the organization. This can provide subjective but important insight into the valuation of intellectual capital.

Specific evaluation models: They use conceptual frameworks such as the Skandia Navigator, Balanced Scorecard adapted to intellectual capital, and other models designed to measure and manage the organization's intangible assets (Chirinos Araque et al., 2018).

It is important to highlight that the measurement of intellectual capital can be complex and may vary depending on the context and objectives of the organization. Often, a combination of several approaches can provide a more complete view of the value and contribution of intellectual capital to a company. Measuring the formation of intellectual capital involves evaluating and quantifying the process of creation, development and management of intangible

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resources in an organization. Although measuring the formation of intellectual capital can be challenging due to the intangible nature of these assets, there are several approaches and methodologies that can be used to address this measurement:

Learning and Development Indicators: Measure participation in training and training programs, evaluate the acquisition of specific skills and knowledge through pre- and post-training evaluations, and analyze the effectiveness of professional development programs.

Innovation Measurement: Evaluate the generation of new ideas, products, processes or services as a result of training and learning within the organization. This may include metrics such as the number of patents, the rate of introduction of new products or services, or the improvement in operational efficiency as a result of new practices learned.

Surveys and Performance Evaluations: Use surveys or performance evaluations to measure the impact of training on employee performance, job satisfaction, talent retention, and work quality (Aguayo et al., 2022).

Analysis of Competencies and Abilities: Evaluate and measure the set of skills, competencies and knowledge acquired by employees through training and development programs (Meriño et al., 2018). This may include identifying and evaluating key competencies for specific roles within the organization.

Knowledge Management Indicators: Evaluate the effectiveness of knowledge management processes, such as the capture, storage, distribution and effective application of knowledge acquired through training programs.

Return on Investment (ROI) Metrics in Training: Calculate the value generated by the investment in training programs, comparing the cost of training with the benefits or improvements in performance, productivity or innovation.

Measuring intellectual capital formation can be multidimensional, using a combination of quantitative and qualitative indicators to capture the effectiveness and impact of training and development programs on the growth and evolution of an organization's intangible assets. Measuring the migration of intellectual capital, which involves the movement or transfer of knowledge, skills and talent between different entities or organizations, can be a challenging process due to the complex and often intangible nature of these assets. However, there are approaches that can help measure and evaluate this phenomenon:

Analysis of Personnel Turnover: Measure the frequency with which key employees leave the organization and the impact of their departure on the transfer of knowledge and skills (Sanchez et al., 2023). A high level of turnover could indicate a significant loss of intellectual capital.

Evaluation of Professional Networks and Connections: Measure the quantity and quality of the connections and relationships that employees maintain inside and outside the organization. This may include evaluating the extent of the professional network, participation in communities of practice, among others.

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Exit Surveys and Interviews: Conduct surveys or interviews with employees who leave the organization to better understand what knowledge, skills or experiences they are taking with them and how these could have contributed to the intellectual capital of the organization.

Knowledge Transfer Analysis: Evaluate the effectiveness of knowledge transfer programs or mechanisms within the organization, such as training sessions, mentoring or collaborative projects, measuring the quantity and quality of shared knowledge. Evaluation of Joint Projects or Initiatives: Measure the success or impact of projects in which an exchange or collaboration between organizations has occurred, analyzing the results obtained and the knowledge shared during the process.

Innovation Impact Analysis: Evaluate how the migration of intellectual capital has contributed to innovation within the organization. This can be measured by the number of new ideas, products, processes or improvements derived from the knowledge or skills transferred.

Measuring the migration of intellectual capital can be complex and often requires a multidimensional approach using quantitative and qualitative indicators to capture the impact and effectiveness of the transfer of knowledge, skills and talent between entities or organizations.

However, the theories, dimensions, models and measurements of intellectual capital have not considered university governance as a mediator of the impact of public policies on the training and migration of talents. Therefore, the objective of this work was to compare a theoretical model derived from the literature review with respect to an empirical model derived from the sample's responses to an instrument that measures the process in question.

Are there significant differences between the theory of migration and formation of intellectual capital with respect to the responses of a sample of students assigned to public health institutions and organizations?

Hypothesis. Given that the anti-pandemic strategies of confinement and social distancing impact training and guided the migration of talents, significant differences are expected with respect to the criteria of a sample of students at a university in central Mexico.

METHOD

A cross-sectional, exploratory and psychometric study was carried out with a sample of 100 students (M = 20.1 SD = 3.4 years and M = 8 '902.00 SD = 345.00 admission) assigned to the public health system.

The Intellectual Training Scale was used, which includes four dimensions related to self-knowledge (My university trains talents who know their abilities), collaboration (My university encourages collaborative projects), innovation (My university has funds for innovative projects) and management (My university supports the production of knowledge).

The surveys were administered at the public university facilities, after guaranteeing confidentiality through email and a Delphi study for discussion and evaluation of the items. The data were processed in JASP version 17 for the estimation of reliability, adequacy, sphericity, linearity, validity, fit and residual coefficients. The demonstration of the hypothesis is established with the interpretation of the values close to unity as evidence of acceptance of the hypothesis.

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RESULTS

Reliability (alpha of 0.780 and omega of 0.765), adequacy (KMO = 0.825) and sphericity [x2 =2842.941 (190 df) p=0.001] allowed factor analysis. Four factors were established that explain 80% of the total variance. The first factor was made up of items r2, r5, r6, r8, r10, r12, r14 and r18, explaining 31%. The second factor was established with the indicators r1, r3, r4, r6 and r19. The third factor was configured by the items r6, r19, and r20. The fourth factor is binding with the variables r7 and r17. In this sense, the eigenvalues suggested four factors (see Fig. 1).

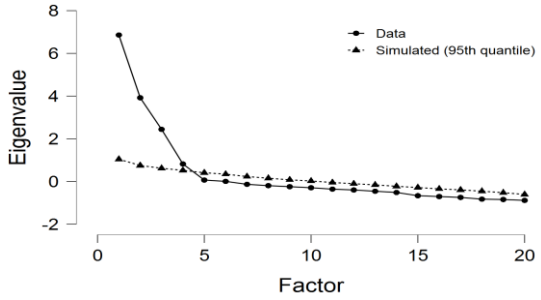

Figure 1
OWN VALUES

Regarding the factor structure, it was configured with the four suggested factors and the 20 corresponding indicators (see Fig. 2). The structure explains the variance around expectations, although the first factor was negatively associated with r3. The second factor was negatively associated with item r9 and r18. The third factor was negatively linked to r11, r13, and r17. The fourth factor was negatively correlated with r10.

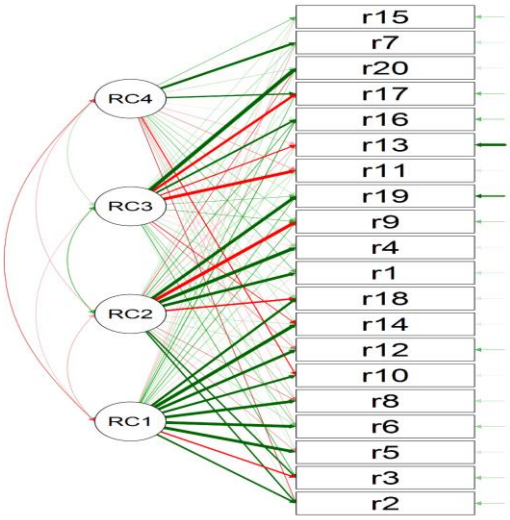

Figure 2
PATH DIAGRAM

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DISCUSSION

The contribution of this work lies in the establishment of an empirical model that was contrasted based on the theory of intellectual capital with the assessments of students from a public university in central Mexico. The results show the prevalence of four factors related to self-knowledge, collaboration, innovation and management, which explain 80% of the total variance. Such findings fit the theory of intellectual capital which notes three predominant dimensions: human, structural and relational capital (Garcia, 2019). In this sense, self-knowledge defined as the continuous learning of emotions and intentions related to the human being is related to human capital that emphasizes subjective values, since emotionality or rationality suppose principles that guide them. The managerial factor understood as the resources that a person has to carry out an objective or achieve a goal is associated with structural capital that emphasizes the resources that an organization has to carry out its mission and vision. The collaborative and innovative factors defined as high risk propensities in correspondence with maximum profits are governed by the relational capital of institutions and organizations. In this way, the structure found is significantly linked to the theory of intellectual capital. The implications for the training of talents represent areas of opportunity, since while academic training is theoretical, professional and work training is practical. Consequently, it is necessary to investigate the training structure in these areas and contrast them with the theory of intellectual capital. Furthermore, the sample size must be sufficient to explain a greater percentage of the variance, as well as the expansion of the scale and the factors (Esquer et al., 2023).

CONCLUSION

The objective of the present study was to contrast the hypothesis related to the significant differences between the theory of intellectual capital and an empirical model observed in a sample of public university students. The results corroborate the dimensions of human, structural and relational capital. The percentage of explained variance reached 80% and the predominant factor was self-knowledge, but the extension of the instrument and the size of the sample limit the results. It is recommended to expand the study in order to increase the percentage of explained variance, refine the instrument for measuring academic, professional and labor training, as well as achieve representativeness of the results through a proportional, stratified and random selection of the sample.

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