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The reality of Adopting Preserving Mechanisms of Intellectual Capital: A Comparative Study between Saida's University, Alegria and Cankiri University, Turkey

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To all the professors whose guidance we benifited from.

Dedication

Praise be to God who without this work would
not have been

To whom was her love the secret to my success
for my mom

To my greatest bond, to my father

To those who loved me, to my aunt and sister

To who was my role model, to the strong
woman, to my idol, for the supervising
professor 'Chikhi Aicha

To the encyclopedia of knowledge, professor
Bouzian Othman

I dedicate this humble work.

Rachedi Kheira

Dedication

Praise be to God who without this work would
not have been

To whom was her prayer the secret to my
success, to my mother

To whom supported me with everything he had,
to my father

To every friend i made along the way and been
there through my complains

I dedicate this humble work.

Chohra Fatima

Abstract:

This study aims to verify the reality of intellectual capital maintaning (preserving) mechanisms at the University of Dr.Tahar Moulay of Saida Algeria and compare it to the Cankiri Karatekin University of Cankiri Turkey. To achieve the purpose and goal of this study, a questionnaire was built and distributed to a sample intentionally selected of the teaching staff of both universities, the Saida university sample consists of 45 respondents and Cankiri's sample consists too of 45 respondents, and by analyzing the questionnaire answers through the SPSS program. The results shows that both universities contains intellectual capital with its dimensions (human capital, structural capital and relational capital), it was also found that there is a significant impact of maintaining mechanisms on intellectual capital, while Saida university showed that only 36% of the development and the building of intellectual capital is due to the mechanisms of its preservation. The results of the University of Cankiri indicate that 64% of development and that the building of intellectual capital is due to the mechanisms its preservation.

Key words: Intellectual capital, human capital, structural capital, relational capital, maintaining mechanisms.

Abstrait:

Cette étude vise à verifier la réalité des mechanismes de maintien du capital intellectuel à l'université du Dr. Tahar Moulay de saida Algeria et à la comparer à l'université Cankiri Karatekin de Cankiri Turky. Pour attiendre le but de cette étude, un questionnaire a été construit et distribute à deux échantillons délibérément sélectionnés parmi le personnel enseignant des deux universités, Saida échantillon universitaire se compose de 45 répondants et l'échentillon de Cankiri comprend également de 45 répondants, et en analysant les réponses au questionnaire via le programme SPSS. Les resultants montrent que les deux universités contiennent du capital intellectuel avec ses dimensions (capital humain, capital structurel, capital relationnel), il a également été constaté qu'il y a un impact significatif de maintien des mecanismes sur le capital intellectuel, alors que l'université de Saida a montré que seulement 36% du développement et la construction du capital intellectuel est dus aux mecanismes de sa preservation. Les resultants de l'université de Cankiri indiquent que 64% du développement et de la construction de capital inettectuel sont dus aux mecanismes de sa preservation.

Mots clés: Capital intellectuel, capital humain, capital structurel, capital relationnel, mecanismes de maintien.

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Intellectual capital	IC
Human capital	HC
Structural capital	SC
Relational capital	RC

Introduction

Introduction:

Throughout history, the means of production have witnessed several developments in line with economical periods. Starting with Adam smith that classified land (or natural resources), machinery or tools, labor and money as the main production factors. Then the focus shifted to financial assets as major factors of production in the economic wheel. Next came the 1990's, knowledge got recognized on its own as a major production factor, this recognition born to the studies of Karl. E Sveiby and Affarsvarlden (Sweden's oldest business magazine) that noticed that high tech companies possess assets that wasn't discribed in the financial documents, they concluded that these invisible assets are knowledge assets and those assets could be located or found in the competencies of a company's people, in it's internal and external structures. Those components are now known as Human capital, structural (or organizational) capital, relational (or customer) capital. Then in 1991, Skandia (a Swedish financial services company) formally established an intellectual capital function and definded it as the gap between book value and market value.

Since knowledge resides in individuals (or human capital) and in a sense can't be owned by organization same as owning capital assets, the mangers seek to use those stars operators to the utmost without overdepanding on them, and to avoid alienating it human capital in fear of it's leakage and migration to competitors, maintaining mechanisms has been put into action, some are related to leadership and organizational culture and some focus only on the material incentives.

In this study, we focus on Saida and Cankiri University's intellectual capital and the types of preservation mechanisms that were adopted. So, in order to maintain intellectual capital and prevent its leakage to other universities, mechanisms have been put in place to protect it. **To what extent are those mechanisms applied at the universities under study (Saida's university, Algeria and Cankiri University, Turkey)?**

Our problematic splits to the following sub-questions:

- What does intellectual capital mean? And how interested are the two universities in the intellectual capital?
- How is the condition of intellectual capital and its components in both universities?
- Do the preservation mechanisms have a significant impact on intellectual capital?

A

Introduction

Study hypotheses:

The first main hypothesis: The University under study has IC with different dimensions according to the researched category.

The second main hypothesis: There is an effect of adopting mechanisms for preserving IC in the university under study according to the researched category.

- There is an effect of adopting mechanisms for preserving HC in the university under study according to the researched category.
- There is an effect of adopting mechanisms for preserving Sc in the university under study according to the researched category.
- There is an effect of adopting mechanisms for preserving RC in the university under study according the researched category.

The third main hypothesis: There are differences in the averages of respondents' responses about the IC at the university under study due to personal characteristics (gender, age, academic qualification, professional experience.

The forth main hypothesis: There are differences in the averages of respondents' responses about the maintaining mechanisms of the universities under study due to personal characteristics (gender, age, academic qualification, professional experience).

Study importance:

The importance of this study emerges in theory in an attempt to clarify the fundamentals of intellectual capital and how to maintain it, as a complementary study to the proposed recent studies in the field of intellectual capital. The latter still needs more depth, analysis and theoretical exploration, which will benefit researchers in conducting new research by reviewing the results of the current study and its findings.

As for the practical aspect, the importance of the study appears based on it being among the rare studies that dealt with the issue of the reality of adopting mechanisms for preserving intellectual capital, in terms of analyzing their reality and the mechanisms of their activation at the university.

Reasons for choosing the topic:

There are several reasons for choosing this topic, including the following:

- The lack of studies that dealt with such issues, especially those related to the preservation of intellectual capital.
- Newness and novelty of the topic, to escape from ruminant studies.

- Personal tendencies for such topics and studies.

Study objectives:

We conducted this research:

- See if the universities have proper maintaining mechanisms.
- Investigate if those mechanisms are working and have a real impact or not.

Methodology of the study:

This study is conducted at the University Dr Moulay Tahar Saida, Algeria and Cankiri Karatekin University, Turkey. The teaching team has been chosen as the population of this study.

The present study is a comparative and descriptive method in term of data collection and an applied research in terms of the purpose of this study. A questionnaire is the instrument of this study, the questionnaire was treated by SPSS software.

Research difficulties:

Any research topic on the way to preparation faces difficulties, as:

- Difficulty in reaching the institutions under study due to the outbreak of the new Corona Covid-19 pandemic.
- The difficulty of retrieving the questionnaire from the institutions under study due to the delay in their correspondence with us.
- Lack of references for previous studies related to the subject of the study.

The limits of the study:

Objective boundaries: The study aims mainly at the location of adopting mechanisms for preserving intellectual capital. This study defines maintenance mechanisms as the independent variable and intellectual capital as the dependent variable.

Spatial boundaries: The questionnaire was distributed within the universities that were studied and located in the state of Saida in Algeria and the state of Cankiri in Turkey.

Time limits:

The current study was implemented during the 2019/2020 academic year.

Research framework:

In order to address the problematic of the research and test the validity of the proposed hypoteses, the study was divided according to the IMRAD methodology, and it is one of the

most popular methods that facilitate the researchers to review and browse the various sections of the study. This method is based on:

- Introduction (I)
- Method (M)
- Result and Discussion (RAD).

So, the study is divided into two chapters as follows:

The first chapter is for the theoretical aspects related to intellectual capital and preservation mechanisms, first, we discuss the intellectual capital definition and its dimension presented in human capital, structural capital and relational capital while stating every dimension's definition, the components of every dimension. Then we touch on matters related to the preservation mechanisms of intellectual capital through stating the importance of intellectual capital, reasons to preserve it, then we reveiw the maintaining mechanisms, we also talk about the other side of preservation that is investing in intellectual capital, measurement related to intellectual capital and finaly we reveiw the the risks related to investments in intellectual capital.

The second chapter is dedicated to the practical aspects of the study. Starting with an introduction to saida university and the higher education system in algeria, and an introduction to Cankiri Karatekin university in Turkey, then we explain how we select the sample of the study and its size, how the questionnaire was disgned and how the data was analysed and the the results were discussed to test wether the hypotheses are accpeted or rejected.

Introduction

The general structure of the study:

Problematic

Field study

Theoretical study

Introducing both universities

Intellectual capital

Research methodology

Intellectual capital preservation

Finding & Discussion « Saida University »

Investements in intellectual capital

Finding & Discussion« Cankiri University »

Comparing the universities results

Previous studies

Discussing the results of the study

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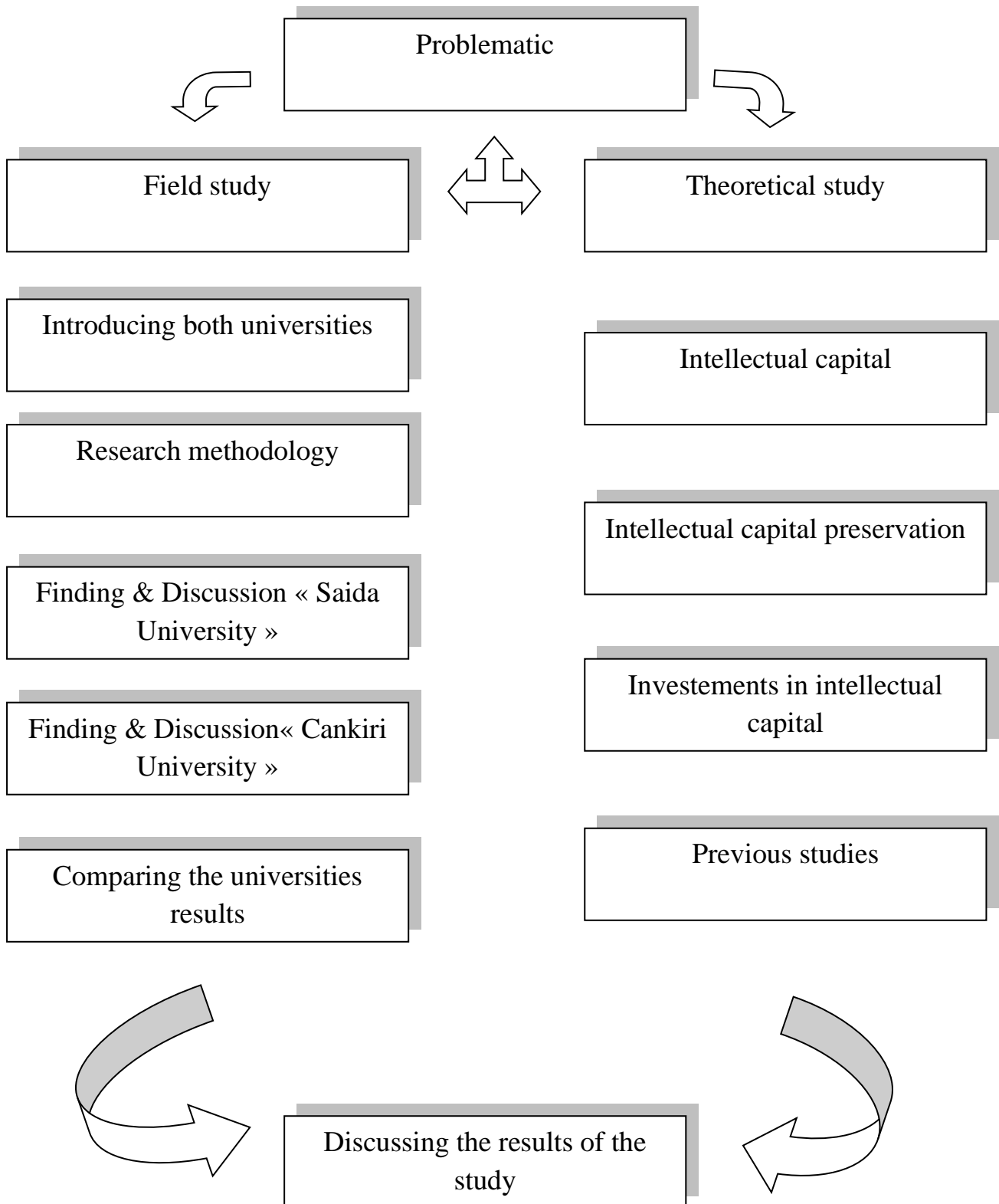
Chapter I

Chapter introduction:

Born to the age of information, knowledge assets or more known as intellectual capital has gained a lot of attention in light of it being considered the most important factor in the present-day economy and key to achieving competitive advantage in a globalized world. From this perspective, it is a must to understand the nature of intellectual capital, what it means to the organization, where it is located and how to retain it.

1- General overview of intellectual capital.

1-1- Defining intellectual capital.

After knowledge has been recognized as a factor of production on its own suite to the era of knowledge economy (1990s), investments that used to go into equipment and other capital tools, now a major percentage of these investments go into knowledge upgrading and developing intellectual capital. Intellectual capital or non financial capital, intangible assets are defined by different scholars; some of them are stated below:

- **Edvinsson**: Skandia AFS intellectual capital is defined as « the possession of knowledge, applied experience, organizational technology, customer relationships, and professional skills that provide Skandia AFS with a competitive edge in the market ». (Edvinsson, 1997)
- **Thomas Stewart** explained that that intellectual capital is the organized knowledge that generates wealth. (Stewart, 1997)
- **OECD:** Intellectual capital is the intangible value contained in the heads and relationships of employees, management staff, customers and other stakeholders. IC encompasses not only the contents of employee's minds, but also the complex intangible structure that surrounds them and makes the organization function. (OECD, 1999)

  Also it is mentioned that the gap between book value and market value could be described as Intellectual capital.

1-2- Intellectual capital dimensions.

As mentioned before the scholars didn't come to the general definition to intellectual capital thus leading to different IC components.

1-2-1- Skandia AFS list of intellectual capital component was too long therefore it was reduced based on descriptive characteristics of its items to human capital and structural capital.The Skandia intellectual capital model is as follows:

Figure 1 : Skandia AFS intellectual capital model

Market value

Financial capital	Intellectual capital

Human capital	Structural capital

Customer capital	Organizational capital

Innovation capital	Process capital

Intellectual property	Intangible assets
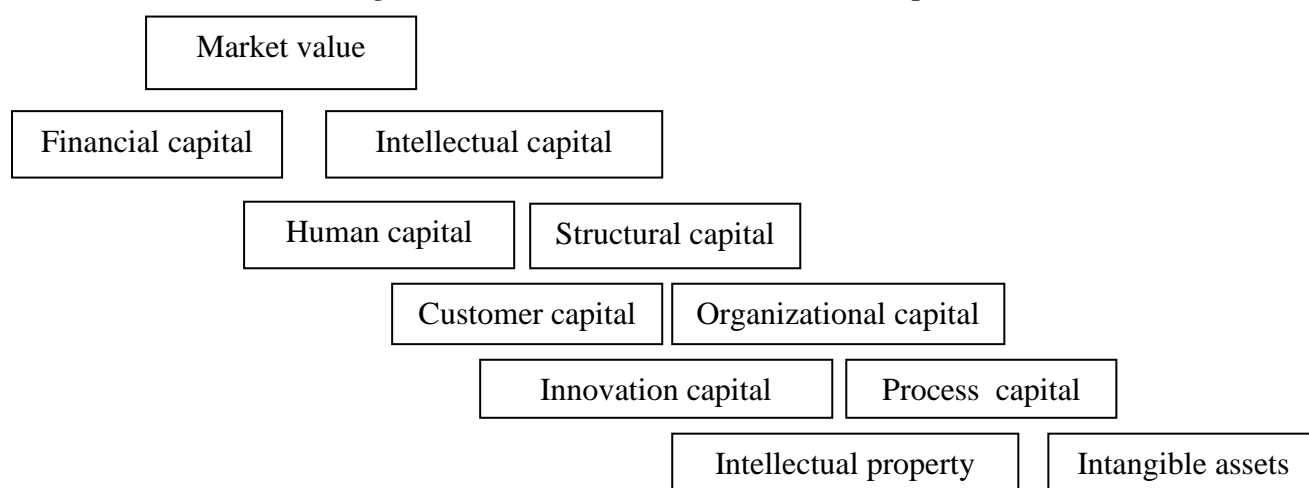
Source: Leif Edvinsson, Developing Intellectual Capital at Skandia, Long Range Planning, Vol 30, No3, page 369.

The model starts with the market value of the company that splits to financial capital, which is an asset item and intellectual capital, which is a debt item because it is borrowed from employees, stakeholders, customers…ect. Next, intellectual capital splits to human capital and structural capital, the last goes beyond human capital and it is what's left behind when the employees goes home. Within structural capital there is customer and organizational capital, which in turn contain process capital and innovation capital. Within innovation capital there is intellectual properties such as patents, trademarks and intangible assets.

1-2-2- T.Stewart saw that intellectual capital consists of 3 major components: (Stewart, 1997)

- The employees or the workers: provide knowledge or solutions to customers' problems that will lead to an increase in organization's profit.
- The working system: means the organizational structure of the organization or system in which the workers operate, it organizes them and leads to exchange and movement of knowledge through a system of information flow.
- The customers: they are the source of knowledge and information that is used in developing the organization's products.

1-2-3- Generally speaking is it agreed that intellectual capital compromises the following:

Table 1: an intellectual capital model.

Market value				
Financial capital		Intellectual capital		
Monetary resources	Physical resources	Human capital	Structural capital	Relational capital
		Education,	Legal structure,	Customer

	Experience, Innovation capabilities, Skills, Leadership… ect.	Culture, Database, Information system, Technology, Routines, Process.	relationship, Supplier relationship, Strategic partnerships, Relation between employees, Network and communication Reputation.

Human capital:

- **Differentiating human resources from human capital**.

The distinction between human capital and human resources is important because these two terms are often inappropriately used interchangeably. This creates enormous communication problems, so we distinguish these two concepts in some detail. Some prior work has advocated a level-based distinction where human capital exists only at the individual level and anything at a unit level is considered a human resource. While this conveniently simple, it obscures important theoretical issues. (Ployhart, Nyberg, Reilly & Maltarich, 2013)

- **The components of human capital:**

Human capital represents the total and qualitative sum of manpower available in society. The qualitative aspect represents the mental competencies and scientific levels of the population, and through the educational level, the qualitative aspect related to experience and knowledge is determined, while the quantitative aspect is calculated by the total size of the population. The components of human capital can be divided into knowledge and competencies. (Ben ahcen and bouhali, 2012)

1- **Efficiency**: It is the process of a competent worker who is able to move and employ the different functions of a particular system.
"Professional competence" applies in its broadest sense, which is the situation in which mobilization and coordination can take place, resources are used, and only appear while working.
2- **Knowledge**: It is the product of a large group of information that is processed, interpreted and analyzed. This information is extracted from another large database of different data.

- **The importance of human capital:**

The real importance of human capital does not lie in the inputs from it, but in what is achieved from outputs and results. For example, we find higher education that makes individuals who have a university achievement available to all companies and have no competitive advantage in their use. The level of results is superior to that of the competing companies. This is the true value. Likewise, the quantitative dimension in the number of employees and years of service and others are not critical dimensions in distinguishing the company's work and its superiority in competition. Rather, it is necessary to look and search for talented individuals: (najm, 2008)

1. It is considered one of the critical and individual sources that affect performance.
2. Help create new knowledge.
3. It is a resource that others can hardly imitate.
4. Assists in achieving the competitive advantage of an organization.
5. It helps increase the efficiency of asset use and achieves blind productivity and better customer service.
6. It has a direct impact on the ability of entrepreneurs and owners of new ideas in terms of securing the financing capital necessary to start new projects.

- **Human capital characteristics:**

Human capital is characterized by the characteristics of intangible capital, and it is difficult to measure accurately, ephemeral and lost, it is increased by use, it can be used in other states and in various operations and at the same time, it is embodied in persons who have a willingness to carry it, as it is if it had a big impact on the organization. (Wigg, 1977)

There are a number of characteristics of human capital: (el rachidan, 2005)

- Human money is inseparable from its owner.
- Human capital is not only a product of earshot and services only, but also consumes them.
- The productivity of labor in human capital does not depend only on the technical aspects; there are motivations, motives, and individual and external incentives together.
- Human capital cannot be used as a protection against ideas and future uncertainty especially in the absence of social security systems and in the case of illnesses, work or permanent impairments.
- With the death of a person, human capital (with the exception of inventions registered in the names of persons concerned and their use after them) vanishes,

unlike physical capital that can be converted into raw materials again after being sold as waste or scrap.

- **Human capital indicators:**

It is the most important indicator that he mentioned: (al anzi and Ahmed, 2009)

1. Capacity of employees: strategic leadership of the organization's management, level of employee quality, employees 'learning ability, efficiency of employee training operations, workers' ability to participate in decision making.
2. Creativity of employees: the creativity and creativity of workers, the income generated from the original ideas of workers Personnel attitudes.
3. Personnel attitudes are consistent with the organization's values, the degree of employee satisfaction, the turnaround rate, and the average length of service for the organization's employees.

Structural capital:

- **Definition of Structural capital:**
- It is what's left behind when the employees goes home, and it encompasses culture, management style, information systems, data base, technology, process, routines, patents, trademarks, organizational structure.
- Structural capital includes the enabling structures that allow an organization to exploit intellectual capital. Structures range from the tangible elements provided by an organization such as patents, trademarks and databases to intangible success such as culture, transparency and trust among employees. It has been agreed that it also means that it is knowledge in the organization, independent of people, that includes patents, contacts and databases. On the other hand, it declares that structural capital is an unthinkable asset. This is all that remains when employees return to their homes, such as databases, customer files, guides, brands and organizational structure. This capital is caused by the products or systems that the company has created over time and will stay with the organization when people leave. Thus, organizations with strong structural capital will have a supportive culture that allows their employees to try new things, learn and practice them. On the other hand, structural capital represents competitive intelligence, formulas, information systems, patents, policies, and processes that result from products or systems that the company has created over time. Structural capital also includes all stores of non-human knowledge in organizations, which include databases, organizational charts, process and strategy guides, routines and anything that is more valuable to the company than its material value.(Abdul Rahim, Mohd Kamal & Mat ,2011)

- **The role of the structural capital:**

In the current fast evolving economical situation, there is an urgent need to evaluate SC to be able to boost the organizations' business performance. The long-term survival of an organization depends on how it invests and improves its structural capital. The idea of structural capital has a variety of implications for an organization. These implications, if recognized and managed properly, would make the company stronger on the long term, especially given the current market conditions. The main roles are developing structural capital and asset extraction capturing human and relational capital .Strong structural capital in an organization involves a culture of support that allows individuals to try new things and learn from mistakes. Structural capital has the potential to contribute to human capital development by facilitating the exchange of knowledge. The structural capital includes policies and organizational culture. If these policies are favorable for environment friendly culture and knowledge, then the human and relational capital can be developed and extracted more efficiently. By using a variety of information and communication technology, individuals are able to connect with other people or groups and share knowledge. The structural capital is a tool that can be used to facilitate this contact. (Gogan, Duran& Draghici, 2015)

Relational capital:

- **Definition of Relational capital:**

The stock of knowledge in relationships and networks such as relationships with customer, partners, alliances, providers, governmental institutions.

- **Dimensions of relational capital:**

Its dimensions are: Relationships with customers, Relationships with suppliers, the strategic alliances that the institution establishes with institutions operating in the same field.

The term relationship includes the emergence of several feelings: mutual attraction, respect, appreciation of interconnectedness that are grouped in two or more parties, where relationships are assumed to have occasional or continuous interactions including exchanges of a different nature in a certain period of time in which the objective treatment of real events has taken place. That is why the institutions seek, as far as possible, to build individual relationships with each customer in the long term, as they are considered a source of income. (Ben Chaoury, 2009)

In addition, the relationship that connects the customer with the institution provides: (Peelen, 2006)

1- Interaction between the two parties at least.
2- Continuity in the relationship because past interactions affect the present and the future, negatively and positively.
3- The effect of the interaction between the parties is related to real events and requires objective treatment by both parties.

➢ **First, the relationship with the customer:**

Rogers end Pepper defines the relationship with the customer as "The application of the concept of relationship marketing aims to satisfy the needs of each customer individually, by focusing on what the customer says and what the organization knows about him. (Ben salah, 2018)

▪ **The objectives of managing the relationship with the customer:**

Clients are the lifeblood of any institution, as they are its true and valuable asset and the leaders of the economy, as the institution seeks, through managing the relationship with the customer, to achieve the following: (ziyadat, el aouamra, 2012)

- Improving and increasing customer satisfaction and loyalty to the organization.
- Maximize customer lifetime value.
- Optimal utilization of customer sectors or parts.
- Targeting segments of profitable customers from the total customer portfolio (spending per customer).
- Increasing the effectiveness and efficiency of customer management.

➢ **Second, the relationship with suppliers:**

Swift knew it "A new concept has begun to invade the language of marketing, which means: the system of attracting, acquiring and retaining suppliers, through the analysis of their information and understanding their requirements, through a long-term process that takes into account strong relationships between suppliers and their established relationships with suppliers. ".(Jihan, 2006)

▪ **Importance of Supplier Relationship Management System:**

The markets have developed in the last two decades in a way that we have not seen before, and the institutions responsible for providing the same product increased, and competition intensified among them to attract and maintain customers. Hence the importance of obtaining programs that are able to set the lines to be followed to obtain more gains and the ability to communicate with the requirements of renewal and development, it is necessary to refer to

some details that demonstrate the importance of the Supplier Relationship Management System as follows: (amro, 2007)

1- In light of the intense competition in the markets, the Supplier Relationship Department has enabled it to gain an advantage in this competition, by identifying and understanding the types of suppliers and then achieving their goals.

2- Marketing research has shown that suppliers always want to establish relationships with some institutions, and are not inclined to change their dealings.

3- In light of the current financial crisis, which affected the economy as a whole, reducing expenses becomes a decisive and inevitable matter, which is what supplier relations management does through the correct orientation towards profitable suppliers.

➢ **Third: strategic alliances**
▪ **The concept of strategic alliance:**

Strategic alliance means "replacing cooperation with competition that may lead to the exit of one of the parties from the market. The alliance leads to control of risks and threats, and alliances share in profits, benefits and tangible and intangible gains."(El najar, 1998)

▪ **Axes of the strategic alliance:**

Strategic alliance is a power relationship, or negotiation relationship, and it is based around three main axes, namely: (el filalisous, 2000)

A) The project: It is a common general vision, meaning a strategy in the process of investigation. The intended goal of cooperation is to achieve common interests in the project, and strategic alliances are embodied in a joint development or exchange of resources in the broad sense, natural assets, human means, technological skills, knowledge in marketing.

B) Relationship: It is what binds the dealers, and this relationship is not of a material necessity, but rather is essentially human, so it is based on communication and information exchange, as for interaction that translates into the embodiment of the real.
Moreover, this distinctive relationship between two companies is based on a joint research of medium and long-term goals, according to conditions that allow the benefit of the same benefit for two partners.

C) The contract: the complex and ambiguous nature of alliances appears in the variety of forms that can be given to them. Exposing to cooperation and strategic alliances from the legal angle must examine two different aspects, namely:

- First: The legal method that the client institutions choose to regulate their relations with each other in the field of contracts or law Institutions.
- Second: The legal and regulatory legal framework among the institutions on the part of society as a whole. Especially from him competition law.

2- Intellectual capital preservation:

2-1- Intellectual capital importance:

It is known that the stock market stars attract more with their intangible assets than tangible one thus comes the importance of intellectual capital.

The following are some of what makes intellectual capital important to an organization:

- It is a sustainable asset.
- It grows in value over time.
- Achieving a lasting competitive advantage.
- Generating profits.
- Enhancing innovation and creativity.

2-2- Reasons for intellectual capital preservation:

The department of intellectual capital is concerned with how to provide these capabilities, maintain them, develop them and make the best use of them in a way that supports the competitive position of the organization, so we present the reasons for preserving the intellectual capital in the following points: (arob, 2015)

First - Competitive Advantage: Organizations are looking for a competitive advantage, and the intellectual capital is one of the basic components of this feature, as it enhances the organization's performance and makes it able to respond to the ever-changing competitive environment, and given the importance of individuals as a competitive advantage, they are called the "internal customer" so it must be known. On their personalities, motivations, attitudes and aspirations, in order to know how to motivate them, preserve them and extract the maximum of their energies to serve the organization.

Second - Great wealth: Intellectual capital must be preserved because it is wealth, and this wealth comes from multiple sources, the first of which is that a person in his eighty years of age does not lose more than three percent of his brain power, and this means that 97% of brain capacity will remain Effective vitality, and this person is normal, so how is it the case for an intellectual capital who remains invested in this capacity at this age? Isn't it really wealth? The second source of their wealth is their ability to register patents whose value is enormous.

Third - High expenses: The acquisition and development of intellectual capital represents a high cost that organizations bear, which are spent in many aspects, including: selection, appointment, and when the organization is keen to preserve the capabilities of its intellectual capital, it guarantees that thousands of knowledge will not be outdated. Respond, and keep pace with the accelerating innovation.

Fourth - a survival factor: the intellectual capital and its preservation is an important factor for the survival and continuity of the organization, because it represents the excellent category that has accumulated scientific and practical experience.

Fifth - The cost of consultation: The process of making organizations educated requires spending a large cost for the purposes of consultation provided by organizations and offices specializing in this field, and this is one of the reasons for preserving the intellectual capital.

2-3- Intellectual capital maintaining mechanisms:

In the view point of the importance of intellectual capital in the organization, mechanisms have been put in place to preserve it, including the following:

- Alalawneh & Bourini focused more on the preservation of human capital in their study for the importance of human capital in health sector. They recognized many ways to maintain human capital such as acheiving job satisfaction, working diligence, non-absenteeism, but their main focus was aspects of acheiving job satisfaction.

  Alalawneh & Bourini also linked between solving or overcoming the challenges facing human resources and the preservation of human capital, leading to the following points:

  - The more incentives (physical and moral) are appopriate to the amount of work the more the employee is satisfied and it increases it sense of justice and loyalty which leads to him staying with the organization.
  - Leaders impacts employee's sense of belonging, motivation to get work done and impact their job satisfaction thus acheiving low turnover propensity.
  - The working environment which suffers from strong control, bullying and lack of freedom, will lead to a decrease in the desire to work making the employees leave their job.
  - There are also other maintaining mechanisms such as :
  - Addressing the aging of knowledge: it means that individual's knowledge and skills are not up to date which requires an upgrading measurement. (harhouch ,2003)
  - Confronting organiztional frustration: it's the mental state in which the employee feels trapped or limited that leads to absenteeism, stress, high level of turnover, dissatisfaction …ect.

- Reducing work stress: Work stress is a self-adaptive response resulting from any action, situation, or event which places a special burden on an individual, and work pressures affect performance, the psychological happiness of the individual, and his health. To reduce them, the causes that lead to them, represented in the ambiguity of roles, assume more responsibilities than they should, lack of social support, role conflict, and stressful life events.
- Promoting organizational excellence: it means all means and methods that increase the number of intellectual contributions to the organization's workers by absorbing useful knowledge and new ideas in their minds by encouraging creativity, innovation, teamwork and respect for opinions, and this would increase the number of distinguished In the organization, and among the means of measuring organizational excellence: the number of patents, the number of new or development ideas, the number of research and studies
- Reducing opportunities for organizational alienation: Organizational alienation is a psychological and social condition that controls the individual, which is a lack of adaptation to the environment and the environment, or a situation that represents a weak ability to adapt to new environmental conditions, and it can be measured and determined through personal interviews, survey form, rates Turnover, lower productivity.

3- Investments in intellectual capital:

3-1- Definition:

- In the modern economy, major investments goes into competence development or knowledge upgrading, and according to Moayyad A. Al-Fawaeer « the investments of the intellectual capital falls within the input generated by organizations of talent and cutting edge technology and used by individuals efficiently will acheive competitive advantage that will be valuable and unique, and difficult to obtain for competitors ». (Al fawaeer, 2013)

Investments in intellectual capital falls within the development of knowledge, skills, technology, promotion of creative ideas, and establishing organizational culture that promotes knowledge sharing and knowledge creation.

- Investments areas : (Mafragy & Salh, 2003)
- Investment in research for advanced expertise.
- Investment in strenghthening the capacity of individual employees.
- Investment in creating group of individuals that operates learning and sharing knowledge.
- Use brainstorming method to stir creative ability and generate the largest number of ideas.

- Set up a system to gather the views of employees and their development proposal.
- Ongoing training and development.
- Reduce the chances of organizational expatriation.

3-2- Measuring intellectual capital :

There was a need to build a measurement system because what you can manage you can measure and what you can measure gives you a clear insight on whether your investment is generating value and profit or not.

According to Sveiby (2001) the suggested measuring approaches for non-financial capital falls in the following:

1- **Direct intellectual capital method**; this method estimates the value of intangible assets by identifying its various components, after indentification those components can be evaluated either individually or as an aggregated coefficient.

2- **Market capitalization method**; calculating the defference between a company's market capitalization and its stockholders equity as the value of its intellectual capital.

3- **Return on assets method**; the average of pre-tax earnings of a company for a period of time divided by the average tanible assets of the company, the resulting ROA percentage is compared with its industry average. The difference is multiplied by the company's average tangible assets to calculate average annual earnings from intangibles assets. Dividing the pervious average earnings by the company's averge cost of capital provides an estimate of the value o its intangible assets.

4- **Scorecard method**; the various components of intellectual capital are indentified and their indicators are generated and reported in scorecards or as graphs. This methos is similar to direct intellectual capital approach, expect there is no estimate made of the value of the intangible assets.

Figure 2 : Sveiby suggested measuring approaches for intagnible assets

Source: Sveiby, K.E. A knowledge-based theory of the firm to guide in strategic formulation, journal of intellectual capital, Vol. 2, 2001, page 58.

3-3- Risks of investing in intellectual capital:

Risk is uncertainty about outcomes or events, it impairs forecasting and planning activities; an organization's investment in intellectual capital involves: (Bhattacharya, Wright, 2000).

- Short-term deterioration of profit, which in turn reduce the value of the balance sheet, thereby reducing the book value of the organization. (Edvinsson, 1997)
- Intangible assets are extremely hard to measure, potentially leading to difficulties in determining development costs.
- Property rights over intangible assets are not fully secured by the organization, except legally protected intellectual property such as patents and trademarks.
- The returns from human capital performance are uncertain and may differ over time.
- As the environment changes, organizations can adapt by developing new technologies or acquiring them, but if employees cannot adapt their skills and knowledge it represents a risk.
- The risk of human capital loss, such as employee turnover.

4- Prior studies:

We collected the following prior studies that dealt with the subject of the current study or some aspects related to it, as follows:

4-1- **Studies in Arabic:**

4-1-1-Intellectual capital and its role in the quality of institutional performance, "An applied study on the education program of the UNRWA in the Gaza Strip."

Sample: 268 managers.

The aim of this study is to identify the reality of the intellectual capital in the educational program of the United Nations Relief and Works Agency for Refugees in the Gaza Strip and to identify the reality of the quality of institutional performance in the educational program of the UNRWA in the Gaza Strip.

Exposing the relationship between the components of the intellectual capital and the quality of institutional performance in the educational program of the UNRWA in the Gaza Strip and to determine the impact of the intellectual capital components on the quality of institutional performance in the UNRWA education program And the employment of refugees in the Gaza Strip.

Results:

- The availability of the Intellectual Fund components in the program has reached a great degree.
- The availability of quality standards for institutional performance in the program has reached a significant degree.
- The existence of a strong positive correlation between the components of intellectual money families and the quality of institutional performance in the UNRWA education program in the Gaza Strip.
- The quality of institutional performance in the program is fundamentally and statistically influenced by each of the variables (Structural Money Catching, Human Capital Capitalization, and Relational Money Catching).

4-1-2-The role of intellectual capital in achieving the competitive advantage of economic institutions in light of the knowledge economy, a case study of the cement company, Ain Al-Touta, Batna.

Sample: 90 tires from the cement company, Ain Al-Touta.

Study variables:

- The independent variable: is the intellectual capital and is represented in human capital, structural capital, client capital.
- The dependent variable: is the competitive advantage and it includes the following dimensions: quality, efficiency, creativity, and responsiveness.

The objectives of the study:

This study seeks to:

- Ensuring the existence of a relationship and impact between the intellectual capital represented by its components (human, structural, and cliental) and Competitive advantage, and to determine the correlational relationships between the study variables.
- Knowing the level of availability of the requirements for intellectual capital in the company under study.
- Highlighting the role of intellectual capital and its components in achieving the company's competitive advantage.
- Knowing the efficiency of the company under study in using its intellectual capital.

Where the conclusions were drawn:

- The company in question has the human capital requirements.
- The company under study has the requirements of the client's capital to realize that it contributes to achieving distinction.
- The company in question has the structural capital requirements.

4-2- **Studies in English:**

4-2-1- The study of Alalawneh & Bourini (2019) titled: **Human Resources Challenges and Their Impact on the Preservation of Human Capital**, Field Study in Private Hospitals in Irbid Governorate - (Jordan).

The sample: 200 people randomly selected from the staff of the private hospitals of the governorate of Irbid.

This study aims to identify the challenges facing human resources and their impact on the preservation of human capital in the private hospitals of the governorate of Irbid.

The result of this study showed a statistically significant impact on human resource that face challenges in preserving human capital in the private hospitals of Irbid's Governorate. The study recommended addressing the challenges facing human resources through increased wages, incentives, rewards, comprehensive health insurance, providing an appropriate work

environment and ideal administrative leadership that will lead to career stability Thus, achieving the competitiveness of the hospital.

4-3-   The relationship of the current study with previous studies:

Through the review of previous studies, we find that they did not link intellectual capital with the mechanisms of preserving it, except for the study of "Alalawneh & Bourini" which is consistent with the current study in the aspect of mechanisms for human capital preservation. Our current study is distinguished from previous studies that it tried to link the intellectual capital with Mechanisms to preserve it by addressing the fundamentals of intellectual capital, its components, the reasons for preserving it, and investing in it. The previous studies have contributed to the enrichment of the current study and the benefit from it was as follows:

-   Obtaining Arab and foreign references that are directly related to the subject of the study;
-   Building a questionnaire consistent with the study problem and its objectives;
-   Choosing the statistical methods that are appropriate for processing data and information of the current study.

Chapter conclusion:

From this chapter we conclude that intellectual capital is the knowledge that generates wealth and helps in transforming raw material into something (product or service) more valuable and it only grows in value over time while providing the organization with a competitive advantages, thus comes the important to invest into it and obtain or set mechanisms that serves at preserving this capital.

Chapter II

Chapter introduction:

After discussing in the previous chapter, the most important theoretical foundations of the research topic, in this chapter we will match the theoretical side on the practical side to study the extent to which mechanisms are adopted to preserve the intellectual capital in Saida University and Cankiri university, through knowing the views of both faculties as a targeted research community in order to know the extent to which these institutions adopt mechanisms to preserve intellectual capital.

1- An overview of the two universities.

1-1- An overview of Saida university, Dr.Moulay Tahar:
1-1-1- Higher education and the scientific research in Algeria:

The constitution of Algeria in the article 53 stipulates that the state is the organizer of the education system, the right of free education is guaranteed for all Algerians, and thus basic education is compulsory.

The executive decree of the 29th of August 2003 modified by the executive decree of the 27th of September 2007 regulates the organization and the functioning of higher education institutions.

Algeria has a large array of university types going from universities to schools to"école normale" and "école supérieures". Higher education also includes university centers, higher national school (école normale supérieures). In addition, the university of continuing education (université de la formation continue UFC) created in 1990 dedicated to enabling the non-holders of baccalaureate to reach university and get their diploma. The university sector comes after compulsory education that takes place until the age of 17.

There have been two main reforms of the sector: the 1971 reform that changed the structure of the universities from institutes to faculties, and the LMD reform that started in 2004 and was finalized in 2010. The introduction of the reform signified the change of the degree system into Licence degree (reduced from 4 to 3 years of study), the Master's degree replacing the Magister degree and the doctorate.

Through this part, an overview of El Taher Moulay Saida University will be presented through a presentation the stages of its development, and to some quantitative statistics on the evolution of the number of permanent professors and to the pedagogical structures available at the university level.

1-1-2- Stages of development of saida university:

The higher education in Saida opened its doors in the year 1986, after transforming the administrative training center into a general school for teacher training, according to Decree No. 86/254 dated 07/10/1986 to form secondary education professors in the basic public specialties (physics, chemistry, mathematics).

Due to the strategic location of saida state, it is considered a window on the south and close to the northern coast. It was inevitable that it had to develop and expand to attract all baccalaureate holders in the region, and indeed it had that, according to Decree No. 98/222 dated 07/07/1998 it has been converted into a university center do 03 institutes, which are as follows:

- Institute of Exact Sciences.
- Electro technical Institute.
- Irrigation Institute.

And thanks to the efforts made by various parties, the university center has become containing 05 institutes, so that each institute contains a group of departments and that was based on the executive decree No. 06/256 dated August 06, 2006:

- Science and Technology Teaching Assistant.
- Institute of Natural and Life Sciences.
- Institute of Letters and Languages.
- Institute of Legal and Administrative Sciences.
- Institute of Economic and Commercial Sciences and Management Sciences

Thanks to the political will of the higher authorities in the country on the one hand, and the interest of the university family on the other hand, the higher education in Saida witnessed a remarkable development through what is observed from each university entrance from the opening of new people, the double reception of students, the employment of qualified employees in addition to receiving basic structures in support of the training process. And get the qualitative training. According to Executive Decree No. 09-10 of 01/04/2009, which includes the transfer of the University Center in Saida to * Tahar Moulay University *, four quantities have been established as a result:

- Faculty of sciences and technology.
- Faculty of Economic Sciences, Business Sciences and Management Sciences.
- Faculty of Law and Political Science.
- Faculty of Letters, Languages, Humanities and Social Sciences.

Faculties, fields and divisions located at the level of Saida University:

The following will display an information card for a saida university related to: Faculties, fields, and divisions

Faculties	Fields	Divisions
Faculty of sciences	Mathematics and computer science	Mathematics
	Material science	Physics
		Chemistry
	Nature and life sciences	Environment and surroundings
		Biology

Technology	Science and Technology	Irrigation
		Civil engineering
		Electro technologist electronics
		Wired and wireless communication
		Methods engineering Mechanical engineering
		Electrical engineering
		Media automated
Human and social sciences	Social science	
	Humanities	
Literature and languages	Language and Arabic literature	
	French language	
	English	
	Arts	Theatrical arts
Law and Political science	Law	
	Political science	
Economic and commercial sciences and management sciences	Economic and commercial sciences and management sciences	Economic science
		Commercial science
		Management science

Source: Department of development and prospects of the vice-presidency of the university directorate for development and guidance at Saida University.

Quantitative statistics about Saida University:

The University of Taher Moulay Saida is available with scientific competencies, of professors who are trained in hierarchical levels.

In terms of educational structures, the university has 24 stadiums (capacity 5640), 142 halls for applied work (capacity 4,970), in addition to 05 university libraries (capacity 1100) and 14 internet halls (capacity 360), and in order to keep pace with the university's changes occurring locally and globally, and to link more with its external environment through programming research that is compatible with the requirements of development, 15 accredited research laboratories have been established distributed among the college.

Table 2: Evolution of the number of permanent professors

college year	Professor of higher education	Professor Lecturer "A"	Lecturer B	Assistant Professor A	Assistant Professor B	Other	Total
2001-2002	1	7	/	40	52	8	108
2002-2003	1	7	/	50	59	4	121
2003-2004	2	8	/	67	86	2	165
2004-2005	2	15	/	84	94	2	197
2005-2006	4	16	/	105	99	1	225
2006-2007	4	18	/	125	113	1	261
2007-2008	5	21	/	152	121	1	300
2008-2009	6	23	16	173	129	1	348
2009-2010	9	29	38	162	180	1	419
2010-2011	10	37	47	177	198	1	470
2011-2012	13	44	56	185	239	1	538
2012-2013	16	53	62	287	176	/	594
2013-2014	20	64	84	315	149	/	632
2014-2015	23	77	99	336	127	/	622

Source: Department of Development and Prospects of the Vice-Presidency of the University Directorate for Development and Guidance at Saida University.

Table 3 : Accredited research laboratories by faculties

Faculties	Faculty of sciences	Technology	Economic and commercial sciences and management sciences	Faculty of Law and Political Science	Literature and languages	Human and social sciences
Number of accredited research laboratories	5	3				

Source: Department of Development and Prospects of the Vice-Presidency of the University Directorate for Development and Guidance at Saida University.

1-2- An overview of Cankiri Karatekin University:

Founded in 2007, Cankiri Karatekin University is a non-profit higher education institution and has a ranking of No. 97 in Turkey and No. 5646 among world universities. The number of students at the university is 10,000-14,999 and the number of teachers is 400-499. Cankiri Karatkin University is accredited by the Turkish Ministry of Higher Education and the YÖS exam is required for entrance into the university. Located in the Turkish city Cankiri, 130 km

away from Ankara the capital, continues its activities with Uluyazi campus locted 3.5 km from the city center.

Cankiri University has a selective admission policy based on entrance examinations, and a 693 total teaching staff (2019/2020 academic year).

The university of Cankiri Karatekin encompasses eight faculties:

- Faculty of Literature.
- Faculty of Science.
- Faculty of Forestry.
- Faculty of Fine Arts.
- Faculty of Economics Administrative.
- Faculty of Islam.
- Faculty of Engineering.
- Faculty of Health.

Faculties, fields and divisions located at the level of cankiri Karatekin University

Faculties	Fields
Faculty of Arts	English Language Literature
	Turkish Language Literature
	Persian Language Literature
	Arabic Language Literature
	Archeology
	Psychology
	Sociology
	Information and Document Management
	Geography
	History
	Educational Sciences
	Philosophy
Faculty of Sciences	Mathematics
	Statistics
	Chemistry
	Physics
	Life Sciences.

Faculty of Administrative and Economic Sciences	Public Administration
	Economics
	International Relations
	Political Science and Management of Political Institutions
	Banking and Finance Administration
	International Trade
	Labor Economy and Economic Industrial Relations
	Social Service
	Business Administration
Faculty of Arts	Painting
	ceramic designs
	music
	sculpture
	film and television
	anthropomorphic sculptures
Faculty of Forestry	rest Engineering
	Natural Architecture
Faculty of Engineering	mechanical engineering
	civil engineering
	chemical engineering
	electrical and electronics engineering
	foodstuff engineering
	computer engineering
	materials engineering
University institutes	Turkish Institute
	Institute of Fine Arts
	Institute for Social Materials
	Science Institute

2-   Research Methodology.

The present study is a comparative and descriptive method in term of data collection and is an applied research in terms of the purpose of the study.

The research was carried out during the period extending from February 2020 to July 2020.

2-1-   Sample selection and Size.

This study is conducted at the university Dr. Moulay Tahar Saida in Algeria and Cankiri Karatekin university in Turkey. The teaching team has been chosen as the population of this study since they are considered the core base of knowledge in the university and are affected by policies and the organizational structure.Out of total number of the population, we intentionally choose Saida's sample to be 45 respondents and Cankiri's university to be also 45 respondents.

Initially, the questionnaire was supposed to be printed and distributed to the sample, but due to covid-19 complication it was shared by the researchers through personal e-mails in a form of Google form. After that, and from a total of 100 respondents, a total of 90 questionnaires were filled out. 10 questionnaires were excluded due to incomplete or inappropriate filling. Thus, the response rate is 78%.

Objective boundaries: The study aims mainly at the location of adopting mechanisms for preserving intellectual capital.

Spatial boundaries: The questionnaire was distributed within the universities that were studied and located in the state of Saida, Algeria, and the state of Cankiri in Turkey.

Human limits: This study is based on the opinions and answers of a group of professors, whose number is estimated at 115.

Time limits: The time domain for this study is the period extending from the date of commencing the field work until the completion of data collection, analysis and interpretation, and then coming up with results and answers to the questions raised to confirm without the assumptions of the study.

-In general, this period took more than four months, and it was divided into four basic stages:

1. The first stage: This is the first and introductory step in this study, through which the initial contact was made with the field of study site, and the duration of this stage (about a month, before the Corona virus pandemic).

2. The second stage: during which the form addressed to the institution under study was prepared, as well as the interview questions and it took nearly a month for it to be formulated in its final form.

3. The third stage: during which the forms were distributed to Shankiri University, but we were unable to conduct an interview with the frameworks of this institution, due to the conditions that the institution is going through due to COVI D-19 disease.

4. The fourth stage: in which the forms were distributed to Saida University in an electronic way, which required about two weeks.

5. The fifth stage: in which the process of unpacking and analyzing the data obtained began, and interpreting it to come up with results that confirm or deny the study hypotheses.

2-2-   Questionnaire design.

The instrument of this study is a questionnaire, the questionnaire was distributed among an expert group and they were asked to comment on it and the recommended modifications were implemented. The questionnaire consists of 24 questions divided into three parts. The questions were in different styles, including multiple choices and a five point Likert Scale.

- The first part includes four demographic/personal questions.
- The second part consists of 11 questions related to intellectual capital. It helps to evaluate the teaching staff awareness of the university's intellectual capital.
- The third part consists of 09 questions concerning the maintaining mechanisms.

Table 4 : Questionnaire design

The axes	Dimensions	
Personal data	Gender	
	Age	
	Academic qualifications	
	Professional Experience	
The first axis: Dependent variable (Intellectual capital)	Human capital	It contains 03 phrases
	Structural capital	It contains 04 phrases
	Relational capital	It contains 04 phrases
The second axis: Independent variable (Maintaining mechanisms)	It contains 9 phrases	

Source: Prepared by students

The questionnaire was distributed to two samples from both universities as follows:

Universities	Number of Distributed forms	The number of retrieved forms	The number of uncovered forms	Number of forms, canceled/approved
Cankiri university	57	51	6	45
Saida university	58	53	4	45

Source: Prepared by students

The questionnaire was treated by SPSS software "Statistical Product and Service Solutions version 23" an IBM product. Every item was measured by five points Likert scale which ranged from 1 up to 5, as shown in the next table:

Table 5: five points Likert Scale.

Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Likert Scale	1	2	3	4	5
Interval	1.00- 1.79	1.80 - 2.59	2.60 - 3.39	3.40 - 4.19	4.20 – 5.00
Level	Low [1- 2.59 [		Moderate [2.60 – 3.39 [	High [3.40 – 5]	

This study has identified two main variables, maintaining mechanisms as the independent variable and intellectual capital as the dependent variable.
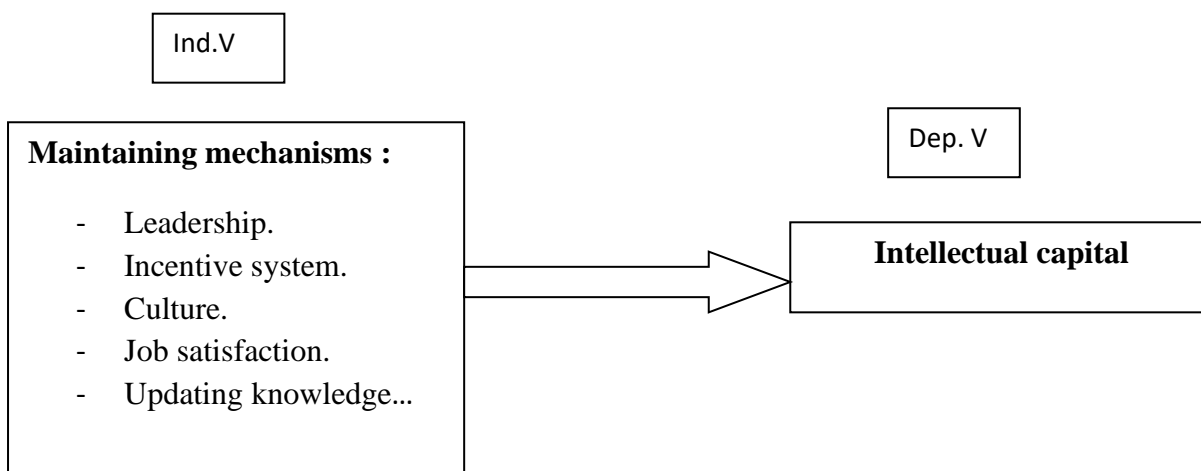
Figure 3 : Research model

2-3- Statistical methods used:

To answer the research questions and test the validity of the hypotheses, descriptive and analytical statistical methods were used using the program (spss.v23), which consists of a descriptive statistical scale to describe the study population, depending on:

1-Percentages and Frequencies: To describe the responses of the study population.

2-Arithmetic mean: It is one of the measures of central tendency, and it is used to obtain the average of the answers of the respondents.

3-Standard Deviation: To find out the dispersion of the values around their mean.

4- The Alpha-Cronbach parameter: it measures the degree of validity of the questionnaire questions and it takes values ranging from zero to one. If there is no consistency in the data, the value of the parameter is equal to zero and vice versa, if there is complete stability of the data, the value of the parameter is equal to one.

5-Correlation coefficient: Correlation coefficients are used to measure the degree of correlation between two variables to measure the quality and degree of relationship between the study variables.

6-Simple linear regression test: this aims to identify the relationship between the independent variable and the dependent variable, by relying on the coefficient of correlation R, to clarify the type of relationship between the two variables.

7-The one-way analysis of variance test: used to find out the extent of statistically significant differences between the average answers about the study axes according to each age - the number of years of experience – qualifications.

3-   Findings and Discussion.

3-1-   Saida's University.

a.   Reliability and Validity

To verify the validity of the study instrument, the researchers used Alpha-Cronbach coefficient for questionnaires axes and internal consistency. The value of Alpha Cronbach 82% is considered a good percentage (>0.7) for the purpose of generalizing the results of the study. Furthermore, the Cronbach coefficient for each axis is presented in the following table:

Table 6: Alpha-Cronbach coefficient for the stability for all the subjects in the questionnaire as a whole

Variables	**Alpha Cronbach**
Intellectual capital	0.70
Maintaining mechanisms	0.774
ALL	0.824

Source: Prepared by students, depending on the output of spss.

b. Correlation Analysis:

If the Pearson value < 0.05 the correlation is not significant, when Pearson value is> 0.05 the correlation is significant.

Table 7: Correlation coefficient of Intellectual capital and its dimension.

		Intellectual capital	Human capital	Structural capital	Relational capital
Intellectual capital	Corrélation de Pearson	1	,7 40	,70 1**	,8 5 5**
	Sig. (bilatérale)		,360	,000	,000
	N	45	45	45	45
Human capital	Corrélation de Pearson	,7 40	1	-,227	-,071
	Sig. (bilatérale)	,360		,134	,643
	N	45	45	45	45
Structural capital	Corrélation de Pearson	,7 0 1**	-,227	1	,359*
	Sig. (bilatérale)	,000	,134		,016
	N	45	45	45	45
Relational capital	Corrélation de Pearson	,8 5 5**	-,071	,359*	1
	Sig. (bilatérale)	,000	,643	,016	
	N	45	45	45	45

**. La corrélation est significative au niveau 0,01 (bilatéral).

*. La corrélation est significative au niveau 0,05 (bilatéral).

Source: Prepared by students, depending on the output of spss

Through the table, we note that the correlation coefficient between intellectual capital and human capital is 74%, which indicates a strong correlation, while the relationship between intellectual capital and structural capital recorded a strong correlation of 70% and finally 85.5% the relationship between intellectual capital and capital Relational is very powerful. And it is what confirms that these are the components that explain intellectual capital. Thus,

the dimensions of each axis have a statistically significant correlation coefficients and high validity coefficients.

Table 8: Correlation coefficient of Maintaining mechanisms and its component:

		Maintaining mechanisms
Maintaining mechanisms	Corrélation de Pearson Sig. (bilatérale) N	1 45
The salary is appropriate to the amount of work	Corrélation de Pearson Sig. (bilatérale) N	,684[**] ,001 45
Promotion prospects are fair/acceptable	Corrélation de Pearson Sig. (bilatérale) N	,628[**] ,000 45
I feel appreciated/recognized	Corrélation de Pearson Sig. (bilatérale) N	,669[**] ,000 45
The supervisors encourages participations (ideas/problem solving)	Corrélation de Pearson Sig. (bilatérale) N	,624[**] ,000 45
I feel a sense of belonging to my work place	Corrélation de Pearson Sig. (bilatérale) N	,878[*] ,011 45
The university has a positive environment (support, healthy workplace...)	Corrélation de Pearson Sig. (bilatérale) N	,704[**] ,000 45
The university encourages research and helps in publishing articles	Corrélation de Pearson Sig. (bilatérale) N	,669[**] ,000 45
The university seeks to preserve its experienced and distinguished teachers	Corrélation de Pearson Sig. (bilatérale) N	,671[**] ,000 45
The university training programm matches the market criteria	Corrélation de Pearson Sig. (bilatérale) N	,734[**] ,000 45

Source: Prepared by students, depending on the output of spss

From the table, we notice the strong correlation between maintaining mechanisms and the phrase "salary appropriate to the amount of work" 68.4%, and secondly the link between the phrase "promotion prospects fair / acceptable with an average score of 62.8%. After that, the percentage of correlation between maintenance mechanisms and the phrase" I feel

appreciated / appreciated " 66.9%, while supervisors encourage participation (ideas / problem solving) 62.4% Moreover, "I feel I belong to my workplace" is important for Pearson Labs at 87.8%, and "University has a positive environment" at 70.4%. The phrase "University encourages research and helps publish articles" is associated with 66.9%. Finally, at 67.1%, "The University endeavors to maintain excellent and experienced teachers" is associated with maintaining mechanisms, while "Market-standard University Training Program" is 73.4%, and this confirms that each of these phrases express the mechanisms for preserving intellectual capital. Thus, the dimensions of each axis have a statistically significant correlation coefficients and high validity coefficients.

Thus, and through the results of the correlation coefficients for all the two axes of the study, it became clear that there is a positive and reliable relationship between the paragraphs and dimensions and that the relationship is significant, and thus the constructive validity of the questionnaire is achieved.

c. Description and analysis of the questionnaire:

In the following, we try to identify the nature of the opinions of the individuals of the study sample, by presenting and analyzing the data obtained about the study variables and their main dimensions.

1- Statistical description of the study sample according to personal variables:

This is by analyzing the personal and job characteristics of the respondents according to the variables: gender, age, experience, Qualifications.

1-1- Distribution of the sample members by gender:

Table 9: Distribution of sample individuals according to gender

		Fréquence	Percentage	Percentage valid	Percentage cumulé
Valid	Male	30	65,2	66,7	66,7
	Female	15	32,6	33,3	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

Source: Prepared by students, depending on the output of spss

Figure 4 : distribution of sample individuals according to gender
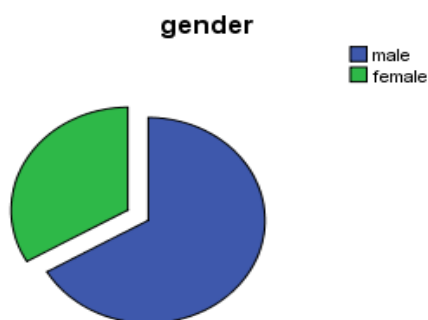
gender

□ male
□ female

Through the table 9, for the information related to gender, it becomes clear to us that the sample includes 30 individuals are males by 65,2% and the rest are females by 32.6% (15 female).

1-2- **Distribution of the sample members by age**

Table 10: Distribution of sample individuals according to age

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	from 25 to 29 years	9	19,6	20,0	20,0
	from 30 to 34 years	17	37,0	37,8	57,8
	from 35 to 40 years	15	32,6	33,3	91,1
	older than 40 years	4	8,7	8,9	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

Source: Prepared by students, depending on the output of spss

age

□ from 25 to 29 years
□ from 30 to 34 years
□ from 35 to 40 years
□ older than 40 years
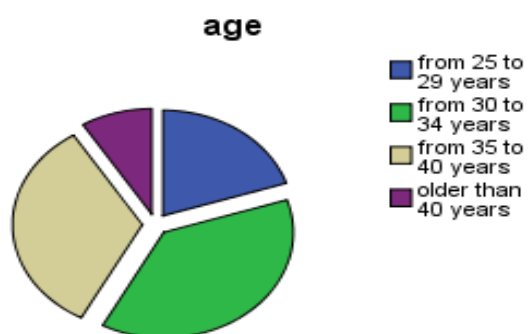
Figure 5 : distribution of sample individuals according to age

We note that only 9 people between the ages of 25 to 29 years are 19.6%, and only 4 people are over the age of 40, and 32.6% of the respondents are between the ages of 35 to 40 years old. The age group from 30 to 34 years has the highest percentage. 37% with 17 individuals and this group is considered the most demanding of work and the ability to raise profitability due to the nature of the physical and mental structure.

1-3- Distribution of sample individuals according to qualification:

Table 11 : Distribution of sample individuals by qualification

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	M.A	27	58,7	60,0	60,0
	Ph.D	18	39,1	40,0	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

Source: Prepared by students, depending on the output of spss
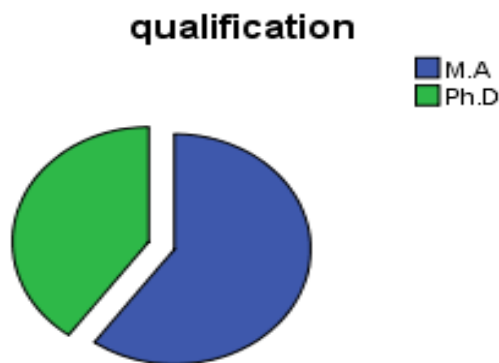
Figure 6 : distribution of sample individuals according to qualification

We note that, 27 people have the Magister degree making it 58.7% of the respondents and 39.1% of the respondents hold a Ph.D degree (18 person).

1-4- Distribution of sample individuals according to work experience

Table 12: Distribution of sample individuals according to work experience

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	less than 5 years	7	15,2	15,6	15,6
	from 5 to 10 years	16	34,8	35,6	51,1

	from 10 to 15 years	11	23,9	24,4	75,6
	more than 15 years	11	23,9	24,4	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

Source: Prepared by students, depending on the output of spss
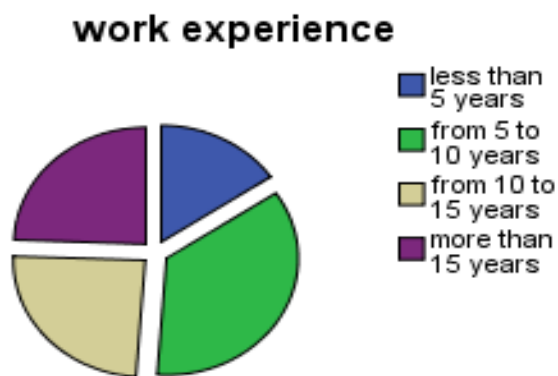
Figure 7 : distribution of sample individuals according to work experience

34.8% of the respondents have been with the university from 5 to 10 years of experience, while 24.4% have been with it between 10 to 15 years and more than 15 years, while 15.2% have been less than 5 years period time with the university.

2- Descriptive Analysis:

In order to describe the response and attitude of the respondents toward each question in the survey, the mean and the standard deviation were measured. The mean shows the central tendency of the data and the standard deviation measures the dispersion of values around the mean.
The level of each item was measured by the following:

Level	Low [1- 2.59 [	Moderate [2.60 – 3.39 [	High [3.40 – 5]

2-1- Descriptive statistics for Intellectual capital dimension:

Table 13: Central tendencies of respondent's responses to the dimensions of Intellectual capital axis

Order	Dimension	Mean	Standard Deviation	Level
1	Human capital	4.29	0.46	High
3	Structural capital	2.61	0.59	Moderate
2	Relational capital	2.77	0.77	Moderate

Intellectual Capital	3.13	0.41	Moderate

Source: Prepared by students, depending on the output of spss

Table 13 shows that the mean of the responses of the sample members on the dimensions of the Intellectual capital axis ranged between 2.61-4.29 with an average (moderate) rating on all dimensions. Human capital ranked first with high ratings and mean of 4.29, while Relational capital ranked second with an average of 2.77 and the third and final rank was for Structural capital with 2.61. Overall the level of awareness of Intellectual capital in Saida's university is average (moderate). The results can be explained by a higher level of interest in the University for Human Capital and sharpening their skills and experience, this interest is due to the nature of the service provided Saida's university (higher education) that is characterized by fully relying on the teaching staff.

2-2- Descriptive statistics of Maintaining mechanism components:

Table 14: Central tendencies of respondents' responses to Maintaining mechanisms paragraphs

Order	Dimension	Mean	SD	Level
1	The salary is appropriate to the amount of work	2.40	0.87	Low
2	Promotion prospects are fair/acceptable	2.30	0.95	Low
9	I feel appreciated/recognized	1.80	1.05	Low
5	The supervisors encourages participations (ideas/problem solving)	2.15	0.97	Low
7	I feel a sense of belonging to my work place	1.90	0.87	Low
6	The university has a positive environment (support, healthy workplace...)	1.91	0.96	Low
8	The university encourages research and helps in publishing articles	1.84	0.73	Low
3	The university seeks to preserve its experienced and distinguished teachers	2.26	1.09	Low
4	The university training program matches the market criteria	2.25	1.11	Low
	Maintaining mechanisms	2.09	0.95	Low

Source: Prepared by students, depending on the output of spss

Table 14 shows the responses of the respondents to the "maintenance mechanisms" items, which ranged between 1.8 – 2.4 with a weak classification for all of the items.

With an average of 2.4 the phrase "Salary is appropriate for the amount of work" indicating that the average respondents are not satisfied with their salaries. In second place is the phrase "Promotion prospects are fair/acceptable" with an average of 2.3 indicating employees' lack of confidence in the fairness of promotion opportunities. Moreover, third with an average of 2.26 with the phrase "the university seeks to maintain its distinguished and experienced

teachers", which shows the university to some extent lack of awareness of the star performers. In fourth place, "The university training program matches the market criteria" with an average of 2.25, which indicates that the university lacks an efficient and effective training program.

Furthermore, in fifth place come the phrase "Supervisors encourage participation (ideas / problem solving)" with an average of 2.15, which indicates that the university does not encourage creativity and innovation, in sixth place "The university has a positive environment (support, a healthy workplace ...) " with an average of 1.91, which indicates that the environment does not meet the required standards. Moreover, in the seventh place "I feel a sense of belonging to my work place" with an average of 1.9, indicating that the employees are not satisfied with their workplace. Ranking in the eighth place, "The university encourages research and helps publish articles" with an average of 1.84 indicating a lack of support in publishing articles. In the last place ranking ninth, the phrase "I feel appreciated/recognized" with an average of 1.8 indicating the absence of feeling appreciated by the employees.

d. Testing the Validity of the hypotheses:

The first main hypothesis:

H0: the university under study does not have IC with different dimensions according to the researched category

H1: the university under study has IC with different dimensions according to the researched category.

One-sample T-Test:

Table 15: statistical means through the test one-sample T-Test for Saida's sample

	N	Mean	Std. Deviation	Std. Error Mean	Sig
Intellectual capital	45	3,1333	,40960	,06106	.000

Source: Prepared by students, depending on the output of spss

We note from the table that the average value of all the questionnaire statements was estimated at 3.133 with a standard deviation of 0.40960, which means that the group studied in the university under study possesses intellectual capital in all its dimensions, and that the value of the level of moral significance sig = 0.00 is less than 0.05 The level of moral significance adopted Here we reject the null hypothesis and accept the alternative hypothesis that says the university in question have an intellectual capital in all its dimensions.

The second main hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving IC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving IC in the university under study according the researched category.

Regression analysis:

Table 16: Regression results, the effect of maintaining mechanisms on intellectual capital

Récapitulatif des modèles

Modèle	R	R-deux	R-deux ajusté	Erreur standard de l'estimation
1	,678ª	,360	,447	,30458

a. Prédicteurs : (Constante), Maintaining mechanisms
Source: Prepared by students, depending on the output of spss

It can be seen from the table that the value of the correlation coefficient R = 0.678 and this indicates the existence of a moderate correlation between the intellectual capital and the mechanisms for its preservation, and the value of the determination coefficient is R s=0.360, which means that only 36 % of the development and building of intellectual capital is due to the mechanisms of its preservation.

Table 17: Anova results

Modèle		Somme des carrés	Ddl	Carré moyen	F	Sig.
1	Régression	3,393	1	3,393	36,574	,000
	Résidu	3,989	43	,093		
	Total	7,382	44			

a. Variable dépendante : Intellectual capital

b. Prédicteurs : (Constante), Maintaining mechanisms
Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0.000 which is less than 0.05 the approved level of meaning adopted, and for this we reject the null hypothesis and accept the hypothesis that states that there is statistically significant effect of adopting the mechanisms of preserving the intellectual capital for the study group at the university.

The first sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving HC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving HC in the university under study according the researched category.

Table 18 : Regression results, the effect of maintaining mechanisms on human capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,530ª	,206	,003	,49165

a. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R = 0.530, which indicates the existence of a moderate correlation between human capital and its conservation mechanisms, and the value of the coefficient of determination R s = 0.206, meaning that only 20% of the development and building of human capital is due to the mechanisms of its preservation.

Table 19 : Anova results

human capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3,339	15	,223	,881	,000
Within Groups	7,328	29	,253		
Total	10,667	44			

Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0.000, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving human capital for the study group at the university.

The second sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving SC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving Sc in the university under study according the researched category.

Table 20 : Regression results, the effect of maintaining mechanisms on structural capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,814ᵃ	,3 22	,654	,45322

a.   Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R = 0.814, which indicates the existence of a strong correlation between structural capital and its conservation mechanisms, and the value of the coefficient of determination R s = 0.322, meaning that only 32% of the development and building of structural capital is due to the mechanisms of its preservation.

Table 21: Anova results

ANOVAᵃ

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17,312	1	17,312	84,282	,000ᵇ
	Residual	8,832	43	,205		
	Total	26,144	44			

a. Dependent Variable: structural capital

b. Predictors: (Constant), Maintaining mechanisms

Through the table of analysis of variance, it is clear that the significance level sig = 0.000, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving structural capital for the study group at the university.

The third sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving RC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving RC in the university under study according the researched category.

Table 22 : Regression results, the effect of maintaining mechanisms on relational capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,777[a]	,11 4	,595	,44623

a. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R = 0.777, which indicates the existence of a strong correlation between relational capital capital and its conservation mechanisms, and the value of the coefficient of determination Rs = 0.114, meaning that only 11% of the development and building of relational capital is due to the mechanisms of its preservation.

Table 23 : Anova results

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13,049	1	13,049	65,535	,000[b]
	Residual	8,562	43	,199		
	Total	21,611	44			

a. Dependent Variable: relational capital

b. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0.00, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving relational capital for the study group at the university.

The third main hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 at the level of significance in the mean of respondents' responses about the IC at the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

The first sub hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to gender

 H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to gender.

Table 24 : The results of T student of the group test in the mean responses of the respondents attributed to the gender variable

Group Statistics						
	Gender	N	Mean	Std. Deviation	Std. Error Mean	sig
Intellectual capital	Male	30	3,1091	,40824	,07453	,987
	Female	15	3,1818	,42223	,10902	

Source: Prepared by students, depending on the output of spss

 Through the table it becomes clear that the level of significance for the axis of intellectual capital sig = 0.987 which is greater than the level of the approved significance 0.05, so there are no differences in the answers of the sample members due to the variable of gender , and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the gender and this is due to the fact that the professors, whether a woman or a man, perform the same tasks and the same responsibilities and work under the same conditions in the physical environment such as relationships within work.

The second sub hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to age.

 H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to age.

Table 25 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the age variable

Intellectual capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,442	3	,147	,871	,464
Within Groups	6,940	41	,169		
Total	7,382	44			

Source: Prepared by students, depending on the output of spss

It is evident from the table that the significance level of the intellectual capital axis sig = 0.464, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of age, and this

indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the age and this is due to the fact that procedures in place do not differ for the ranks of professors or if there are younger or older, regardless of being a Lecturing Professor A or Lecturing Professor B, and they perform under the same conditions.

Third sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to qualification.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to qualification.

Table 26 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the qualification variable

Intellectual capital

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,264	1	,264	1,593	,214
Within Groups	7,118	43	,166		
Total	7,382	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the intellectual capital axis sig = 0.214, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of qualification, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the qualification and this due to the fact that professors whether a holds a Doctoral degree (Ph.D) or Magisterium (M.A) performes the same tasks and the same responsibilities.

Forth sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to experience.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to experience.

Table 27 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the work experience variable

Intellectual capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,547	3	,182	1,093	,363
Within Groups	6,835	41	,167		
Total	7,382	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the intellectual capital axis sig = 0.363, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of experience, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the experience and this due to the fact that that procedures in place do not differ whether a professor have been for the university for a short period of time or longer.

The forth main hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms in the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

The first sub hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the maintaining mechanisms at the university under study due to gender.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to gender.

Table 28 : The results of T student of the group test in the mean responses of the respondents attributed to the gender variable

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Sig
Maintaining mechanisms	Male	30	2,5259	,59438	,10852	,828
	Female	15	2,7481	,53033	,13693	

Source: Prepared by students, depending on the output of spss

From the table, it is clear that the level of significance for the axis of maintaining mechanisms sig=0.828 which is greater thatn the level of approved significance (0.05), which means there are no differences in the answers of the sample members due to the variable of gender. This indicates that the respondents does not differ according to gender and this is due to the fact that the professors whether a man or woman are impacted with the same preservation measures and perform in the same physical environment, the same conditions and have the same responsabilities.

The second sub-hypothesis

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to age.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about maintaining mechanisms at the university under study due to age.

Table 29 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the age variable

Maintaining mechanisms

	Somme des carrés	Ddl	Carré moyen	F	Sig.
Inter-groupes	13,728	18	,763	,905	,580
Intragroupes	21,917	26	,843		
Total	35,644	44			

Source: Prepared by students, depending on the output of spss

It is evident from the table that the significance level of the maintaining mechanisms axis sig = 0.580, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of age, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the age and this is due to the fact professors are impacted with the same preservation measures and those procedures do not differ for professors age or their ranks, regardless of being a Lecturing Professor A or Lecturing Professor B, and they perform under the same conditions.

The third sub-hypothesis

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to qualification.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about maintaining mechanisms at the university under study due to qualification.

Table 30 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the qualification variable

Maintaining mechanisms

	Somme des carrés	Ddl	Carré moyen	F	Sig.
Inter-groupes	4,217	18	,234	,925	,560
Intragroupes	6,583	26	,253		
Total	10,800	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the maintaining mechanisms axis sig = 0.560, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of qualification, and this indicates that the respondents in the study sample in the university agree about the answers, and that the preservation mechanisms do not differ in impact according to professors qualification, whether the professor holds a Doctoral (Ph.D) degree or Magisterium (M.A).

The fourth sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to experience.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the maintaining mechanisms at the university under study due to experience.

Table 31 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the experience variable

Maintaining mechanisms

	Somme des carrés	Ddl	Carré moyen	F	Sig.
Inter-groupes	22,478	18	1,249	1,325	,251
Intragroupes	24,500	26	,942		
Total	46,978	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the maintaining mechanisms axis sig = 0.251, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of experience. This indicates that the respondents in the study sample in the university agree about the answers and that they do not differ according to the experience and that the preservation mechanisms do not differ whether a professor have been with the university for a short period of time or longer.

3-2- Cankeri Karatekin University
a. Reliability and Validity

To accredit the study instrument, the researchers used Alpha-Cronbach coefficient for questionnaires axes and internal consistency.

Table 32: Alpha-Cronbach coefficient for the stability for all the subjects in the questionnaire as a whole

Variables	**Alpha Cronbach**
Intellectual capital	0.779
Maintaining mechanisms	0.810
ALL	0.886

Source: Prepared by students, depending on the output of spss

We note from the table that the values of the Cronbach alpha stability coefficients for all study variables are acceptable and good, for the two axes in a row, which is greater than 0.60, so that the value of the intellectual money variable was 0.779, while the second variable, which is the mechanisms for preserving intellectual capital, was 0.810 (greater than the statistically acceptable ratio). It can be relied upon and which indicates the reliability of the study tool for the purposes of scientific research.

b. Correlation Analysis:

This is done by examining the correlation coefficient between each term and the axis it belongs to.

1- Correlation between intellectual capital and its dimensions.

Table 33: Correlation coefficient of Intellectual capital and its dimension

		Intellectual capital	Human capital	Structural capital	Relational capital
Intellectual capital	Corrélation de Pearson	1	,657	,912[**]	,908[**]
	Sig. (bilatérale)		,445	,000	,000
	N	45	45	45	45
Human capital	Corrélation de Pearson	,657	1	-,155	-,126
	Sig. (bilatérale)	,445		,310	,409
	N	45	45	45	45
Structural capital	Corrélation de Pearson	,912[**]	-,155	1	,780[**]
	Sig. (bilatérale)	,000	,310		,000
	N	45	45	45	45
Relational capital	Corrélation de Pearson	,908[**]	-,126	,780[**]	1
	Sig. (bilatérale)	,000	,409	,000	
	N	45	45	45	45

**. La corrélation est significative au niveau 0,01 (bilatéral).
Source: Prepared by students, depending on the output of spss

From the table above, the correlation coefficiant between Intellectual capital and Human capital is 65.7% which presentes an above average correlation, while there is a strong correlation between Intellectual capital and Structural capital at 91.2% and lastly the correlation between Intellectual capital and Relational capital is 90.8% which also a strong correlation.

Thus, the dimensions of each axis have a statistically significant correlation coefficients and high validity coefficients.

2- The correlation between maintaining mechanisms and it components
Table 34: Correlation coefficient of Maintaining mechanisms and its component:

		Maintaining mechanisms
Maintaining mechanisms	Pearson correlation	1
	Sig. (bilatérale)	
	N	45

The salary is appropriate to the amount of work	Pearson correlation	,471**
	Sig. (bilatérale)	,001
	N	45
Promotion prospects are fair/acceptable	Pearson correlation	,685**
	Sig. (bilatérale)	,000
	N	45
I feel appreciated/recognized	Pearson correlation	,696**
	Sig. (bilatérale)	,000
	N	45
The supervisors encourages participations (ideas/problem solving)	Pearson correlation	,601**
	Sig. (bilatérale)	,000
	N	45
I feel a sense of belonging to my work place	Pearson correlation	,273
	Sig. (bilatérale)	,069
	N	45
The university has a positive environment (support, healthy workplace...)	Pearson correlation	,662**
	Sig. (bilatérale)	,000
	N	45
The university encourages research and helps in publishing articles	Pearson correlation	,741**
	Sig. (bilatérale)	,000
	N	45
The university seeks to preserve its experienced and distinguished teachers	Pearson correlation	,871**
	Sig. (bilatérale)	,000
	N	45
The university training program matches the market criteria	Pearson correlation	,613**
	Sig. (bilatérale)	,000
	N	45

**. La corrélation est significative au niveau 0,01 (bilatéral).

Source: Prepared by students, depending on the output of spss

From the table above, we notice the correlation between Maintaining mechanisms and the phrase 'The salary is appropriate to the amount of work' is 47.1%, and with 'Promotion prospects are fair/acceptable is 68.5%. Next, the correlation between maintaining mechanisms and the phrase 'I feel appreciated/recognized' sits at 69.6%, while the supervisors encourages participations (ideas/problem solving) sits at 60%. Furthermore, the phrase 'I feel a sense of belonging to my work place' is significant as Pearson's coefficient 27.3%, and 'the university has a positive environment' at 66.2%. The phrase 'the university encourages research and helps in publishing articles' is correlated at 74 %. Finally, at 87.1% the phrase ' the university seeks to preserve its experienced and distinguished teachers' is correlated to maintaining mechanisms at 87%, while 'the university training program matches the market criteria' is at 61.3%. Thus, the dimensions of each axis have a statistically significant correlation coefficients and high validity coefficients.

Thus, and through the results of the correlation coefficients for all the two axes of the study, it became clear that there is a positive and reliable relationship between the paragraphs and dimensions and that the relationship is significant, and thus the constructive validity of the questionnaire is achieved.

c. Description and analysis of the questionnaire:

In the following, we try to identify the nature of the opinions of the individuals of the study sample, by presenting and analyzing the data obtained about the study variables and their main dimensions.

1- Statistical description of the study sample according to personal variables:

This is by analyzing the personal and job characteristics of the respondents according to the variables: gender, age, experience, Qualifications.

1-1- Distribution of the sample members by gender:

Table 35: Distribution of sample individuals according to gender

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	Male	18	39,1	40,0	40,0
	Female	27	58,7	60,0	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		

Total		46	100,0		

Source: Prepared by students, depending on the output of spss
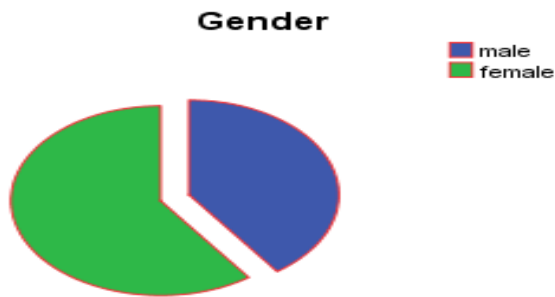
Gender

■ male
■ female

Figure 8 : distribution of the sample individuals according to gender

Through the table number of information related to gender, it is clear to us that the sample includes 27 individuals, who are 58.7% females and the rest are 39.1% males (18 males). This indicated that the university opens all horizons and facilitates all procedures for the category of women.

1-2-   Distribution of the sample members by age:

Table 36: Distribution of sample individuals according to age

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	from 25 to 29 years	7	15,2	15,6	15,6
	from 30 to 34 years	7	15,2	15,6	31,1
	from 35 to 40 years	10	21,7	22,2	53,3
	older than 40 years	21	45,7	46,7	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

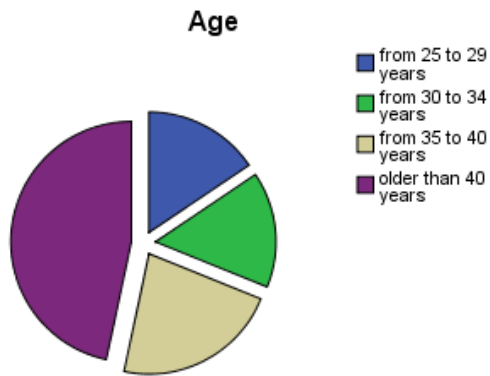Source: Prepared by students, depending on the output of spss

Figure 9 : distribution of sample individuals according to age

Furthermore, 45.7% of the respondents are over the age of 40, 21.7% are between 35 to 40 years, and 15.2% for both groups of 25 to 29 years and between 30 to 34 years. 21 persons out of 45 are older than 40 years.

1-3- Distribution of sample individuals according to qualification:

It was noted that 100% of the respondents hold a Doctoral degree.

1-4- Distribution of sample individuals according to experience:

Table 37: Distribution of sample individuals according to work experience

		Fréquence	Pourcentage	Pourcentage valide	Pourcentage cumulé
Valide	less than 5 years	12	26,1	26,7	26,7
	from 5 to 10 years	18	39,1	40,0	66,7
	from 10 to 15 years	11	23,9	24,4	91,1
	more than 15 years	4	8,7	8,9	100,0
	Total	45	97,8	100,0	
Manquant	Système	1	2,2		
Total		46	100,0		

Source: Prepared by students, depending on the output of spss

Work experience

Figure 10: distribution of sample individuals according to experience

We note that, 39.1% have been with the university from 5 to 10 years of experience, 26.1% of less than 5 year period, 23.9% have 10 to 15 years of experience, and 8.7% have been for more than 15 years with the university.

2- Descriptive Analysis:

In order to describe the responses and attitude of the respondents toward each question in the survey, the mean and the standard deviation were measured. The mean shows the central tendency of the data and the standard deviation measures the dispersion.
The level of each item was measured by the following:

Level	Low [1- 2.59 [	Moderate [2.60 – 3.39 [	High [3.40 – 5]

2-1- Descriptive statistic for Intellectual capital dimension:

Table 38: central tendencies of respondent's responses to the dimensions of Intellectual capital axis

Order	Dimension	Mean	Standard Deviation	Level
1	Human capital	4.33	0.49	High
2	Structural capital	3.81	0.77	High
3	Relational capital	3.80	0.70	High
	Intellectual Capital	3.95	0.50	High

Source: Prepared by students, depending on the output of spss

The table above shows that the mean of the responses of the sample members on the dimensions of the Intellectual capital axis ranged between 3.80-4.33 with a high rating on all

dimensions. Human capital ranked first with a mean of 4, 33, the second rank was for Structural capital with an average of 3, 81, and the third rank Relational capital came with an average of 3.80. The mean of intellectual capital reached 3.95 with a higher rating.

The results can be explained by a higher level of interest in human capital by the management team of Cankiri's university, because higher education service is characterized by fully relying on the teaching team (human capital) while providing the necessary structure, process, systems, culture (structural capital).

2-2- **Statistic descriptives of Maintaining mechanism components:**

Table 39: central tendencies of respondents' responses to Maintaining mechanisms paragraphs

Order	Dimension	Mean	SD	Level
3	The salary is appropriate to the amount of work	3.8667	0.89443	High
2	Promotion prospects are fair/acceptable	3.9111	1.08339	High
4	I feel appreciated/recognized	3.7556	0.93312	High
9	The supervisors encourages participations (ideas/problem solving)	3.3111	1.08339	Moderate
7	I feel a sense of belonging to my work place	3.6444	0.90843	High
6	The university has a positive environment (support, healthy workplace...)	3.6667	0.9232	High
8	The university encourages research and helps in publishing articles	3.5111	1.12052	High
1	The university seeks to preserve its experienced and distinguished teachers	3.9556	1.10691	High
5	The university training program matches the market criteria	3.7556	0.90843	High
	Maintaining Mechanisms	3.7086	0.63090	High

Source: Prepared by students, depending on the output of spss

The table above show that the means of respondents responses to the Maintaining mechanisms paragraphs ranged between 3.31- 3.95 with higher ranking on most paragraphs.

The paragraph "The University seeks to preserve its experienced and distinguished teachers"ranked first with an average of 3.95 that relates to Cankiri's university awareness of the importance of the star performers (teachers). Ranked second the paragraph "Promotion prospects are fair/acceptable"with an average of 3.9 which refers to the teaching staff confidence in the fairness of the administrations in the context of promotions.

Furthermore, with an average of 3.86 "The salary is appropriate to the amount of work"is ranked third and there is a higher agreement on the salary matching the work performed, ranking fourth on appreciation "I feel appreciated/recognized" with 3.75 men. On staying up

to date knowledge concerning the paragraph "The university training program matches the market criteria" ranked fifth with an average of 3.75 and a division rate around 0.90. On confronting organizational frustration ranked sixth with an average of 3.66 "The University has a positive environment (support, healthy workplace...), sense of belonging came seventh with an average of 3.64. Eight "The University encourages research and helps in publishing articles"with an average of 3.51. The ninth and final rank came "The supervisor encourages participations (ideas/problem solving) with a range of 3.31.

d. Testing the Validity of the hypotheses:

The first main hypothesis:

H0: the university under study does not have IC with different dimensions according to the researched category

H1: the university under study has IC with different dimensions according to the researched category.

One-sample T-Test:

Table 40: statistical means through the test one-sample T-Test for Cankiri's sample

	N	Mean	Std. Deviation	Std. Error Mean	Sig
Intellectual capital	45	3,9515	,50266	,07493	.000

Source: Prepared by students, depending on the output of spss

We note from the table that the average value of all the questionnaire statements was estimated at 3, 9515 with a standard deviation of 0. 50266, which means that the group studied in the university under study possesses intellectual capital in all its dimensions, and that the value of the level of moral significance sig = 0.00 is less than 0.05 The level of moral significance adopted Here we reject the null hypothesis and accept the alternative hypothesis that says the university in question have an intellectual capital in all its dimensions.

The second main hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving ICin the university under study according the researched category.
H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving IC in the university under study according the researched category.

Regression analysis:

Table 41: Regression results, the impact of preservation mechanisms on intellectual capital

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,805ᵃ	,648	,640	,30164

a. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

It can be seen from the table that the value of the correlation coefficient R = 0.805 and this indicates the existence of a strong correlation between the intellectual capital and the mechanisms for its preservation, and the value of the determination coefficient is R s=0.648, which means that 64 % of the development and building of intellectual capital is due to the mechanisms of its preservation.

Table 42: Anova results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7,205	1	7,205	79,183	,000ᵇ
	Residual	3,913	43	,091		
	Total	11,117	44			

a. Dependent Variable: intellectual capital

b. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

Through the table for the analysis of variance, it becomes clear that the significance level sig = 0.000 and it is less than 0.05 the level of the concerned significance adopted, and for this we reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect of adopting the mechanisms of preserving the intellectual capital of the subject group in the university of study.

The first sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving HC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving HC in the university under study according the researched category.

Table 43 : Regresion results, the impact of preservation mechanisms on human capital

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,755ᵃ	,54 4	,001	,46150

a. Predictors: (Constant), Maintaining mechanisms
Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R= 0.755, which indicates the existence of a strong correlation between human capital and its conservation mechanisms, and the value of the coefficient of determination Rs = 0.544, meaning that only 54% of the development and building of human capital is due to the mechanisms of its preservation.

Table 44 : Anova results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,224	1	,224	1,054	,000[b]
	Residual	9,158	43	,213		
	Total	9,383	44			

a. Dependent Variable: Human capital

b. Predictors: (Constant), Maintaining mechanisms
Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0.000, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving human capital for the study group at the university.

The second sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving SC the university under study according the researched category.
H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving SC the university under study according the researched category Table 45 : Regression results, the impact of preservation mechanisms on structural capital

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,505[a]	,5 95	,238	,51530

a. Predictors: (Constant), Maintaining mechanisms
Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R= 0.505, which indicates the existence of a moderate correlation between structural capital and its conservation mechanisms, and the value of the coefficient of determination Rs = 0.595, meaning that only 59% of the development and building of structural capital is due to the mechanisms of its preservation.

Table 46 : Anova results

ANOVAᵃ

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3,907	1	3,907	14,713	,000
	Residual	11,418	43	,266		
	Total	15,325	44			

a. Dependent Variable: Structural capital

b. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0.000, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving structural capital for the study group at the university.

The third sub hypothesis:

H0: There is no statistically significant effect at the level of significance 0.05 of the adoption of mechanisms for preserving RC in the university under study according the researched category.

H1: There is a statistically significant effect at the level of significance 0.05 of adopting mechanisms for preserving RC in the university under study according the researched category.

Table 47: Regression results, the impact of maintaining mechanisms on relational capital

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,669ᵃ	,447	,434	,58401

a. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

It is clear from the table that the value of the correlation coefficient R= 0.669, which indicates the existence of a moderate correlation and influence between relational capital and its conservation mechanisms, and the value of the coefficient of determination Rs = 0.447, meaning that only 44.7% of the development and building of relational capital is due to the mechanisms of its preservation.

Table 48 : Anova results

ANOVAª

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11,862	1	11,862	34,779	,000
	Residual	14,666	43	,341		
	Total	26,528	44			

a. Dependent Variable: Relational capital

b. Predictors: (Constant), Maintaining mechanisms

Source: Prepared by students, depending on the output of spss

Through the table of analysis of variance, it is clear that the significance level sig = 0. 000, which is less than 0.05, the approved level of the adopted meaning, and for this we reject the null hypothesis and accept the hypothesis that there is a statistically significant effect of adopting the mechanisms of preserving relational capital for the study group at the university.

The third main hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC and maintaining mechanisms in the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

H1: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to personal characteristics (age, gender, academic qualification, professional experience)

The first sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to gender.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to gender.

Table 49: The results of T student of the group test in the mean responses of the respondents attributed to the gender variable

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Sig
Intellectual capital	Male	18	3,7525	,53720	,12662	,295
	Female	27	4,0842	,43956	,08459	

Source: Prepared by students, depending on the output of spss

Through the table it becomes clear that the level of significance for the axis of intellectual capital sig = 0.295 which is greater than the level of the approved significance 0.05, so there

are no differences in the answers of the sample members due to the variable of gender , and this indicates that the respondents in the study sample in the university agree about the answers and this is not It differs according to the gender and this is due to the fact that the professors, whether a woman or a man, perform the same tasks and the same responsibilities and work under the same conditions in the physical environment such as relationships within work.

The second sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to age.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to age.

Table 50 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the age variable

intellectual capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,615	3	,205	,801	,501
Within Groups	10,502	41	,256		
Total	11,117	44			

Source: Prepared by students, depending on the output of spss

It is evident from the table that the significance level of the intellectual capital axis sig = 0.501, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of age, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the age and this is due to the fact that procedures in place do not differ for the ranks of professors, regardless of being young or older in age.

The third sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to experience.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to experience.

Table 51 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the work experience variable

intellectual capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,176	3	,059	,220	,882
Within Groups	10,941	41	,267		
Total	11,117	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the intellectual capital axis sig = 0.882, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of experience, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the experience and this due to the fact that that procedures in place do not differ whether a professor have been with the university for a short period of time or longer.

The forth sub-hypothesis:
H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the IC at the university under study due to qualification.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the IC at the university under study due to qualification.

Table 52 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the qualification variable

intellectual capital

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	,002	1	,002	,009	,924
Within Groups	11,115	43	,258		
Total	11,117	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the intellectual capital axis sig = 0.924, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of qualification, and this indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the qualification, regardless of the degree the professor holds, and performes the same tasks and the same responsibilities.

The fourth main hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms and maintaining mechanisms in the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms and maintaining mechanisms at the university under study due to personal characteristics (age, gender, academic qualification, professional experience).

The first sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the maintaining mechanisms at the university under study due to gender.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to gender.

Table 53 : The results of T student of the group test in the mean responses of the respondents attributed to the gender variable

	Gender	N	Mean	Std. Deviation	Std. Error Mean	Sig
Maintaining mechanisms	Male	18	3,5926	,79942	,18842	,111
	Female	27	3,7860	,49010	,09432	

Source: Prepared by students, depending on the output of spss

It is clear that the level of significance for the axis of maintaining mechanisms sig=0.111 which is greater thatn the level of approved significance (0.05), which means there are no differences in the answers of the sample members due to the variable of gender. This indicates that the respondents does not differ according to gender and this is due to the fact that the professors whether a man or woman are impacted with the same preservation measures and perform in the same physical environment, the same conditions and have the same responsabilities.

The second sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to age.

H1: There are statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about maintaining mechanisms at the university under study due to age.

Table 54 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the age variable

Maintaining mechanisms

	Somme des carrés	ddl	Carré moyen	F	Sig.
Inter-groupes	17,767	15	1,184	,898	,574
Intragroupes	38,233	29	1,318		
Total	56,000	44			

Source: Prepared by students, depending on the output of spss

It is evident from the table that the significance level of the maintaining mechanisms axis sig = 0.574, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of age, which indicates that the respondents in the study sample in the university agree about the answers and that they do not differs according to the age. This is due to the fact professors are impacted with the same preservation measures and those mechanisms do not differ for professor's age or their ranks.

The third sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to qualification.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about maintaining mechanisms at the university under study due to qualification.

Table 55 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the qualification variable

Maintaining mechanisms

	Somme des carrés	ddl	Carré moyen	F	Sig.
Inter-groupes	1,894	15	,126	,912	,561
Intragroupes	4,017	29	,139		
Total	5,911	44			

It is clear from the table that the significance level of the maintaining mechanisms axis sig = 0.561, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of qualification. This indicates that the respondents in the study sample in the university agree about the answers, and that the preservation mechanisms do not differ in impact according to professor's qualification, regardless of the degree they hold.

The fourth sub-hypothesis:

H0: There are no statistically significant differences at the level of significance 0.05 in the averages of respondents' responses about the maintaining mechanisms at the university under study due to experience.

H1: There are statistically significant differences at the level of significance 0.05 in the mean of respondents' responses about the maintaining mechanisms at the university under study due to experience.

Table 56 : The results of the mono-analysis of variance one way anova of the group test in the mean responses of the respondents attributed to the experience variable

Maintaining mechanisms

	Somme des carrés	Ddl	Carré moyen	F	Sig.
Inter-groupes	7,261	15	,484	,458	,943
Intragroupes	30,650	29	1,057		
Total	37,911	44			

Source: Prepared by students, depending on the output of spss

It is clear from the table that the significance level of the maintaining mechanisms axis sig = 0.943, which is greater than the level of significance adopted 0.05, so there are no differences in the answers of the sample members due to the variable of experience. This indicates that the respondents in the study sample in the university agree about the answers and that they do not differ according to the experience, which indicates that the preservation mechanisms do not differ whether a professor have been with the university for a short period of time or longer.

4- Comparing the universities results:

a. Intellectual capital awareness:

Cankiri's university average Intellectual capital is around 3.95, while Saida'a mean may be smaller than the first university (3.13) but it's still a moderate score. These results could be explained by an overall good level of awareness of both universities with their Intellectual capital.

	Saida's university		Cankeri's university	
	Mean	**SD**	**Mean**	**SD**
Intellectual capital	3.13	0.41	3.95	0.50

b. Maintaining mechanisms application:

« The salary is appropriate to the amount of work »;

This mechanism recorded positive responses at Cankiri University, which means that the teaching staff realizes that the workload is proportional to the stipulated salary. While negative responses were recorded at Saida University, which indicates that faculty members are not completely satisfied with the salary offered to them.

« Promotion prospects are fair/acceptable »;

In second place to the applied mechanisms of the two universities, this phrase indicates confidence in the fairness of promotional opportunities that reduce employee discontent and frustrations. And the answers indicate that Cankiri University offers great opportunities for employee promotion, with negative responses to Saida University, which indicates that the university lacks fair opportunities for promotion.

« I feel appreciated/recognized »;

The result in the Cankiri survey indicates a feeling of distinction and recognition, and also indicates the presence of moral incentives alongside physical incentives (Sentences 1 and 2). The result in the Saida University poll indicates a negative or weak feeling of distinction and recognition.

« The supervisors encourage participations (ideas/problem solving) »;

Poor grades in this mechanism at Saida University could indicate strict administrative leadership that may lead to diminished willingness to work and affect faculty satisfaction and commitment. On the contrary, at Cankiri University we see that there is administrative leadership that supports creativity and other new ideas.

« I feel a sense of belonging to my workplace »;

At Cankiri University there is a high sense of belonging which helps in addressing organizational frustration and motivates teachers to come to work every day and get it done which leads to achieving job satisfaction and thus lower employee turnover. On the contrary, we see that saida university response indicate low sentiment, which increases organizational frustration.

« The university has a positive environment (support, healthy workplace...) »;

There is total agreement from respondents to assert that Cankiri University has a positive and healthy work environment, and it can also be related to having great colleagues and a manageable workload. Respondents agreed to stress that Saida University lacks a positive work environment.

« The university encourages research and helps in publishing articles »;

The results at Cankiri University indicate that faculty members do not find it difficult to publish their outputs, which may lead to higher university scores according to the outputs. The results indicate that the faculty at Saida University faces great difficulties in publishing articles.

« The university seeks to preserve its experienced and distinguished teachers »;

While cankiri's results show significant overlap and awareness of human capital, there was a difference in ranks between universities. At Cankiri University, it ranked first, while at Saida University it ranked seventh, indicating a big difference in maintaining the stars of performance in each university.

« The university training program matches the market criteria »;

This statement indicates an excellent application of the training program and equal training opportunities at Cankiri University, and the results at Saida University indicate the poor application of the training program and unequal training opportunities.

Chapter conclusion:

In this chapter, we project the theoretical side to the practical reality through the applied study that led us to learn about the reality of adopting the states of preserving the intellectual capital in saida University and comparing them to the University of Turkey, where the results of the study were presented and analyzed after analyzing the questionnaire, and processing it. Thus, it has become evident to us that there is a positive emotional correlation between intellectual capital (human capital, structural capital, relational capital) and the mechanisms for maintaining it.

Conclusion

Conclusion:

After knowledge got recognized on its own as a factor of production, the world shifted its focus to the knowledge era where companies acquired their competitive advantages by focusing on their Intellectual capital. And since labor market is now more dynamic and fast moving than ever, it is very important for companies or universities as per our case study to retain their intellectual capital and develop preservation mechanisms.

The main objective of this study is to investigate the application of maintaining mechanisms of intellectual capital in the universities of Saida-Alegria and Cankiri-Turkey in the field. Through this study, we have reached the following results regarding the proposed hypotheses:

As for **the first main hypothesis**, which revolves around the two universities containing intellectual capital in all its dimensions, it was proven in both studies with an arithmetic average of 3.95 in Cankiri University and 3.13 in Saida University. With regard to **the second main hypothesis,** which is "there is a statistically significant effect of adopting mechanisms for preserving intellectual capital in the university under study." Only the results were in Saida University. Therefore, the value of the coefficient of determination R s = 0.360, which means that only 36% of the development and that the building of intellectual capital is due to the mechanisms of its preservation. As for the results of the University of cankiri indicating that the value of the correlation coefficient R = 0.805 indicates that there is a correlation and an effect between Intellectual capital and its preservation mechanisms, the value of the coefficient of determination R s = 0.648, which means that 64.8% of development and that the building of intellectual capital is due to the mechanisms of preserving it.

As for **the third main hypothesis**, there are no statistically significant differences at the significance level of 0.05 in the average responses of the respondents about the intellectual capital at the University of Saida and Cankiri, attributed to personal characteristics (age, gender, academic qualification, professional experience). According to the results, the null hypothesis were accepted and the alternative hypothesis was rejected. This applies to all sub-hypotheses

With regard to **the fourth main hypothesis**, there are no statistically significant differences at the significance level of 0.05 in the average responses of the respondents about the maintaining mechanisms at the University of Saida and Cankiri, attributed to personal characteristics (age, gender, academic qualification, professional experience). According to

the results, the null hypothesis were accepted and the alternative hypothesis was rejected. This applies to all sub-hypotheses

Finally: Within the framework of the goal of this study and to provide an insight into its future, recommendations were made to the University of Saida to develop mechanisms to preserve intellectual capital and adopt them in the form of a strategy to face the risks of investing in intellectual capital, including the following:

- Balance your interest on all intellectual capital components rather than focusing only on one.
- Recognize your distinguished teachers and preserve them.
- Increase the level of empowerment.
- Increase the efficiency of training programs.
- Encourage innovation and article publishing.
- Achieving different levels of preservation are important, rather than relying on incentive system only.
- Provide a flexible structure that allows access and documentation to all information.
- Achieve job satisfaction, ideal administration, leadership, participatory culture.

While it was recommended to Cankiri University to maintain the current level and aim to exceed the preservation level achieved.

It is also proposed to encourage exchanging experiences between the two universities with regard to adopting mechanisms for preserving intellectual capital, and for Saida's university to take advantage of Cankiri's model for better preservation results.

In view of the importance of the topic from several aspects, we present suggestions regarding conducting a group of studies as follows:

- The role of mechanisms for preserving intellectual capital in developing intellectual capital.
- The role of intellectual capital in creating a distinction.
- Methods of measuring the intellectual capital in institutions.

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Appendix 1

University of Dr. Moulay Tahar -Saida-

College of Economic, Management and Commercial Sciences

Master Degree In: Business Management

A questionnaire survey of the reality of Adopting Preserving Mechanisms of Intellectual Capital: A comparative Study between Saida University, Algeria and Cankiri University, Turkey

Hello,

In preparation for our master's thesis at the college of Economic and Commercial Sciences and Management Sciences majoring in Business Management at Saida University for the academic year 2019/2020, we put in your hands this questionnaire through which we aim to know your views on the issue of the reality of adopting maintaining mechanisms for intellectual capital preservation.

Your honest and sincere answers to the questions on this form will contribute to obtaining important and accurate results that enhance the achievements of the research goals. Each answer will be used for scientific research purposes only and it will be completely anonymous.

Thank you very much for your time.

Remark: please read the following statements carefully and answer by (x) in front of the suitable answer.

Ph.D: doctoral degree.   M.A: Magisterium degree.

Gender	a- Male b- Female
Age	a- Between 25 and 29 years. b- Between 30 to 34 years. c- Between 35 to 40 years. d- Older than 40 years.
Qualification	a- M.A* b- Ph. D*
Work experience	a- Less than 5 years b- From 5 to 10 years c- From 10 to 15 years d- More than 15 years

> **Intellectual capital**

Number	Expression	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
i.	**Human capital**					
1	My knowledge grants me capability of doing my job					
2	My skills allows me to solve any problem related to my job					
3	My experince helps me in doing my job as best as i can					
ii.	**Structural capital**					
4	There is an effective policy to protect copyrights/patents					
5	The data base allows acces and documenting all information					
6	There is flexibility in work methods					
7	The university structure is flexible and provides delegation/empowerment					
iii.	**Relational capital**					
8	My university participates in conferences that contribute to acquiring new knowledge					
9	My university seeks to create relationships with local and foreign					

Number	Expression					
	universities					
10	My university seeks to build relationships with research institutes					
11	There is efficiency in solving complaints					

➤ **Maintaining mechanisms**

Number	Expression	Strongly agree	Agree	Neutral	disagree	Strongly disagree
1	The salary is appropriate to the amount of work					
2	Promotion prospects are fair/acceptable					
3	I feel appreciated/recognized					
4	The supervisors encourages participations (ideas/problem solving)					
5	I feel a sense of belonging to my work place					
6	The university has a positive environment (support, healthy workplace...)					
7	The university encourages research and helps in publishing articles					
8	The university seeks to preserve its experienced and distinguished teachers					
9	The university training programm matches the market creteria					

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