People's Democratic Republic of Algeria
Ministry of higher education and scientific research
University of Mohamed Khider- Biskra
Faculty of Economics, Commerce and Management Sciences
Management Sciences Department

Thesis Title

Intellectual Capital' effects on firms' strategic performance – An empirical study in Condor Electronics - Bordj Bou Arreridj-

Thesis Submitted in Partial Fulfilment of the Requirements for the degree of
LMD *DOCTORATE*
Section of Management
Option: *Human Resources Management*

Submitted by:
Nadia ADILA

Supervised by:
Prof. Adel BOUMEDJANE

Board of Examiners:

Prof. Djouhara AGTI	Professor	Mohamed Khider University of Biskra	Chairperson
Prof. Adel BOUMEDJANE	Professor	Mohamed Khider University of Biskra	Supervisor
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Academic year: 2022/2023

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For everyone who appreciates knowledge and learning and serves it even with a word

For those who trust that hope is life, and nothing is impossible with hope.

Thank you very much!

Abstract

The main objective of this thesis is to investigate and analyze the intellectual capital' effect on firms' strategic performance. We have adopted the three dimensions of intellectual capital (human, organizational, and relational capital) based on Kim, Yoo, & Lee (2011) to measure and determine the concept of intellectual capital, we have also adopted the balanced scorecard with its perspectives (Growth & learning, internal business process, customer, and financial perspective) based on Norton & Kaplan (1991) to determine the strategic performance dimensions. We have followed a mixed-methods research design of descriptive method according to the interpretative paradigm. The empirical study was performed in Condor Electronics-Bordj Bou Arreridj, on a random sample of (170) respondents. A systematic approach was adopted to explore the effect of intellectual capital on strategic performance in a variety of organizational contexts and publications. To achieve the outlined objectives, a bibliometric analysis was carried out on extensive research in the period (2003-2023) in the Scopus database, furthermore, analysing the empirical results by investigating empirically the effect of intellectual capital on strategic performance. Among the key findings: The analysis of empirical data revealed a significant positive effect of IC on firms` strategic performance whereas relational capital has the greatest effect on strategic performance, while bibliometric analysis shows that human capital is the most significant dimension of IC followed by organizational capital then relational capital. The main suggestions: Focusing on human capital management as the core asset of intellectual capital, particularly in terms of competencies-based view, knowledge, and experiences alongside organizational capital, which includes various collective practices at both the group and organizational levels. It is also important to develop relational capital within the firm as it has the most effect on the strategic performance of Condor Electronics. Furthermore, addressing the gap in measuring intellectual capital requires a multi-faceted and comprehensive approach to develop and align intellectual capital with quantitative and qualitative measures and strategic goals of the firm.

Keywords: Intellectual Capital, Strategic Performance, Resources-Based View, Balanced Scorecard, Condor Electronics.

الملخص

هدفت هذه الأطروحة الى دراسة وتحليل أثر رأس المال الفكري في الأداء الاستراتيجي للمؤسسات، حيث تم تبني ثلاثة أبعاد لرأس المال الفكري ممثلة في (رأس المال البشري، التنظيمي والعلائقي)، حسب مساهمات Kim, Yoo, & Lee (2011) بالإضافة الى تبني منظورات بطاقة الأداء المتوازن حسب مساهمات Kaplan & Norton (1991) كأبعاد للأداء الاستراتيجي.

وفقا للاطار التصوري التأويلي(البراديغم التفسيري) تم الاعتماد على المنهج الوصفي، وقد قمنا باجراء دراسة ميدانية في مؤسسة كوندور للإلكترونيات – برج بوعريريج، لعينة عشوائية شملت (170) مسيرا استخدمت فيها الاستبانة كأداة رئيسة للبحث، كما اعتمدت هذه الدراسة أيضا المقاربة النسقية المركبة (النظمية) لاستكشاف أثر رأس المال الفكري في الأداء الاستراتيجي ضمن أدبيات وسياقات تنظيمية وزمنية مختلفة. بغية تحقيق أهداف هذا البحث تم تدعيمها بإجراء تحليل ببليومتري في الفترة (2003-2023) في قاعدة بيانات Scopus ، وبتحليل النتائج الميدانية لأثر رأس المال الفكري في الأداء الاستراتيجي.

كان من أهم النتائج المتوصل اليها:

أن هناك أثر لرأس المال الفكري في الأداء الاستراتيجي للمؤسسة. حيث تظهر نتائج الدراسة الميدانية أن رأس المال العلائقي له التأثير الأكبر في الأداء الاستراتيجي يليه رأس المال البشري، بينما يظهر التحليل الببليومتري أن رأس المال البشري هو البعد الأكثر أهمية لرأس المال الفكري يليه رأس المال التنظيمي ثم رأس المال العلائقي.

قدمت هذه الدراسة مقترحات أهمها: ضرورة الاهتمام أكثر بإدارة رأس المال البشري باعتباره الأصل الجوهري في رأس المال الفكري سيما ما تعلق بالتوجه بالكفاءات والمعرفة والخبرات الى جانب رأس المال التنظيمي الذي تتجسد فيه مختلف الممارسات على المستوى الجماعي والمنظمة ككل، وتعزيز رأس المال العلائقي للمؤسسة باعتباره الأكثر تأثيرا في الأداء الاستراتيجي لمؤسسة كوندور للاكترونيات. بالاضافة الى معالجة الفجوة في قياس رأس المال الفكري من خلال مقاربة شاملة ومتعددة الجوانب لتطوير ومواءمة رأس المال الفكري مع القياسات الكمية والنوعية، والأهداف الاستراتيجية للمؤسسة.

الكلمات المفتاحية: رأس المال الفكري، الأداء الاستراتيجي، المقاربة المبنية على الموارد، بطاقة الأداء المتوازن، مؤسسة كوندور للإلكترونيات.

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Introduction

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Statement of the problem

The more you know, the most powerful you are. And the fastest you learn, the fastest you earn. In nowadays firms in a very dynamic and complicated organizational environment of a knowledge-based economy, the capabilities and resources are strategic keys for firms' success.

The increased intensity of competition in the local and global markets prompted firms to think about tools in which to improve strategic performance, to ensure continuity, survival, and entrepreneurship. These firms tended towards real capital and the most important competitive resource, which is intellectual capital, as a crucial resource to achieve economic growth. It was necessary to manage this vital resource by attracting human capital, developing, and maintaining it because it is a vital strategic resource to create strategic value and sustained competitive advantage, in addition to investing in it, to achieve the strategic goals of the firm.

The resource-based view has become among the most known and popular theoretical approaches in management literature, as the core of this approach is that effective management of the firm's internal resources is what creates value for the firm. Resources that are rare, valuable, non-imitation, or non-substitution, achieve excellent performance and sustainable competitive advantage. Through the effective use of resources, the firm can take advantage of the opportunities available in the business environment, whether internal or external and why not create new opportunities through the firm's capabilities to effectively manage those resources. In other words, having better resources and capabilities than competitors do not mean achieving higher performance, but through core competencies that allow those resources to be used and managed effectively.

Over recent years, there have been intense discussions about the importance of intellectual assets or knowledge resources, as intellectual capital is an important, necessary, and decisive factor for achieving competitive advantage. In order to remain at the forefront and achieve leadership in business, firms need to develop an approach to managing their intellectual capital as a crucial factor in achieving the strategic performance of the firm.

The concept of both capacity and resources remains not agreed-upon and comprehensive, as the capacity could include the ability to expect and foresight the developments and changes in the business environment, or the ability to use and manage the resources, the ability to resolve the circumstances facing the firm. While the resources can be tangible or intangible, this may contribute to creating weak and strong points within the firm. Resources can be tangible and/or intangible since in the knowledge economy intangible assets have become the critical resource for value creation. Information technology also plays an important role in achieving high performance, not through its ownership, but through the firm's capabilities to use it as a resource.

As previously mentioned, the intellectual capital within the firm can significantly improve strategic performance through the distinctive combination of its components (Human capital, organizational capital, and relational capital), so it is vital to manage these components – especially human capital- towards achieving the firm's strategic goals.

Algerian firms are living in light of an economic crisis, events that necessitate modernizing, by focusing on investing intangible assets and human capital. Perhaps, amid these challenges

posed by the continuous developments in the business environment and conjunction with the knowledge-based economy, firms are in dire need of turning more toward their human resources and intellectual assets. Especially with what is included in the approach of resources, competencies, and knowledge that values the critical importance of the internal resources of the organization, especially its human capital, as the latter would create value embodied in the organizational capital as well as its relational capital, to form that integration and harmonization between these various intangible assets. An added value to the firm through which strategic goals and competitive excellence can be achieved.

Despite the research and studies concerned with the issue of intellectual capital, no unified model for intellectual capital has been reached, as well a lack of agreement on accurate measurement indicators of strategic performance. Thus, there have been many views and dissertations regarding defining and giving a clear vision of intellectual capital and its impact on the strategic performance. Moreover, intellectual capital measurement is one of the main challenges, while it is difficult to manage immeasurable capital, it is not easy to measure strategic performance, therefore, a measurement model must be developed to align the internal resources and privacy of each firm in order to achieve their strategic goals.

Because we believe that the human mind's power is unlimited, and the most important resource to invest in intangible assets to reach strategic goals, we are seeking this thesis to explore and identify the effect of IC on a firm's strategic performance.

From the foregoing, the main question of this study can be put forward as follows:

Does intellectual capital affect firms` strategic performance?

We outline the sub-questions as follows:

- **Does human capital affect firms` strategic performance?**
- **Does organizational capital affect firms` strategic performance?**
- **Does relational capital affect firms` strategic performance?**
- **Is there a significant difference in the respondents' perceptions about the level of strategic performance due to organizational and profile variables?**

Literature reviews

Previous studies are included based on research in previous literature reviews on the subject of this thesis, by selecting the most relevant modern studies that are directly related to the main question of the thesis and its research variables. From which we proceed to setup the thesis model by determining the dimensions and using its results as justifications to substantiate the results of our study and our choice of this subject, focusing on its limits to build research models more expanded to develop in future researches. We mention a main set of these studies, its goals, and main results, as follow:

Introduction

Intellectual capital studies

1) Huang, H., Leone, D., Caporuscio, A. and Kraus, S. (2021), "Managing intellectual capital in healthcare organizations. A conceptual proposal to promote innovation", Journal of Intellectual Capital, Vol. 22 No. 2, pp. 290-310.

This study aims to add a stream of literature about intellectual capital in healthcare organizations, by exploring how knowledge-based activities are designed to promote innovation and create value for the healthcare sector, this study revealed that the main source to create value is a knowledge-based orientation of the healthcare sector.

2) Baima, G., Forliano, C., Santoro, G. and Vrontis, D. (2021), "Intellectual capital and business model: a systematic literature review to explore their linkages", Journal of Intellectual Capital, Vol. 22 No. 3, pp. 653-679.

This study aims to investigate two main questions: how the literature addressing intellectual capital and business model has evolved so far in the business and management domains? What are possible future research trends of business and management studies regarding intellectual capital and business model? this study suggested a future business approach to develop a management model in order to well algin the intellectual capital with a business model.

3) J. Barrena-Marctínez, et al. (2020). "Joint forces: Towards an integration of intellectual capital theory and the open innovation paradigm". Journal of Business Research. 112. P261–270.

This study has two main goals: providing a theoretical model that presents how IC and open innovation overlap and testing the theoretical model by analyzing how firms' IC affects open innovation-related performance. This study revealed the crucial effect of IC open innovation-related performance.

4) Kim, Yoo & Lee. (2011 Oct). "The HOINCAP scale: measuring intellectual capital in the hotel industry". The Service Industries Journal. Vol. 31, No. 13, 2243–2272.

This study aims to develop a measurement scale (named hereafter the HOINCAP scale) to identify the dimensions and sub-dimensions of intellectual capital in the hotel industry. The main result of this study is suggesting three dimensions of HOINCAP (human, organizational, and customer capital).

Strategic performance studies

5) Thneibat, et al. (2023). "The impact of supply chain integration on strategic performance: The mediating role of strategic vigilance". Uncertain Supply Chain Management. 11. P 325–330.

This study aims to identify the impact of supply chain integration through strategic performance and the mediating role of strategic vigilance in industrial companies. This concluded that the supply chain can affect strategic performance by enabling strategic vigilance as a mechanism that leads to effective strategic decision-making, execution, and strategic performance.

6) Pflugfelder, N.S. (2021), "Knowledge management as a driver of performance in ambulatory healthcare – a systematic literature review through an intellectual capital lens", Journal of Intellectual Capital, Vol. 22 No. 2. P403-432.

This study is to investigate how Knowledge Management and Intellectual capital can increase the organizational performance of ambulatory healthcare providers and how such performance can be assessed. This study also suggested a model in which knowledge management can effect the performance in ambulatory healthcare based on a systematic literature review and focusing on intellectual capital.

7) Behrouzi and Ma'aram. (2019 Oct). "Identification and ranking of specific balanced scorecard performance measures for hospitals: A case study of private hospitals in the Klang Valley area, Malaysia". The International Journal of Health Planning and Management. 34(4). P 1364-1376.

This paper aims to highlight and rank a specific and relevant set of performance measures for private hospitals, depending on balanced scorecard performance perspectives (financial, customer, internal business processes, and learning and growth). The main result of this study includes implementing a measurement BSC approach in hospitals as a major sector needs to be studied extensively in terms of performance measurement.

8) Yan. (2008 Oct). "Performance evaluation of enterprise knowledge management based on balanced scored card". IEEE International Conference on Service Operations and Logistics, and Informatics, IEEE/SOLI 200812.

This study aims to highlight the meaning of knowledge management in the context of the knowledge economy and to analyze the relationship firm's core competency and knowledge management, besides assessing the knowledge management performance of the firm based on a balanced scorecard (financial perspective, customer perspective, internal process perspective, and learning & growth perspective). This study constructs a hierarchy analysis model and calculates the quantized results using the results to evaluate the performance of the firm`s KM.

IC & strategic performance studies

There have been several studies that have addressed the relationship between intellectual capital and firm performance. The most relevant studies are as the following:

9) Duodu and Rowlinson. (2021). "Intellectual Capital, Innovation, and Performance in Construction Contracting Firms". Journal of Management in Engineering. 37 (1).

This study aims to explore the relationship between intellectual capital and firm performance in construction firms, and exploitative innovation as the mechanisms through which intellectual capital evolves to affect firm performance. The main results of this study are revealing that human capital, social capital, and relational capital affect firm performance, but organizational capital does not.

10) Gravili, Manta, Cristofaro et al. (2020). "Value that matters: intellectual capital and big data to assess performance in healthcare. An empirical analysis on the European context". Journal of Intellectual Capital. 22(2). P1469-1930.

This study aims to analyze and measure the effects of intellectual capital with its dimensions on healthcare industry organizational performance and understand the role of data analytics and big data in healthcare value creation, through the assessment of determined variables of intellectual capital. This study seeks to identify the guidelines and suggests propositions for a more efficient response in terms of services provided to citizens and, specifically, patients, as well as predict effective strategies to improve the care management efficiency in terms of cost reduction. The main findings of this study: a data-driven model is a new approach to IC assessment. Moreover, there is a positive effect of HC, RC, and SC on the performance, while the physical assets positively mediate this relationship. This study also highlights the crucial role of IC in the healthcare sector.

11) Huang & Huang. (2020 June). "External and internal capabilities and organizational performance: Does intellectual capital matter? ". Asia Pacific Management Review. 25 (2), P 111-120.

This study aims to adopt a holistic model to examine how different capabilities account for organizational performance, and how intellectual capital mediates between organizational capabilities and performance. This study has revealed that market knowledge, relationship, and innovative capabilities, have significant effects on IC, while customer knowledge capabilities have no significant effects, also, IC has a mediating role in the relationships of organizational capabilities to organizational performance.

1) Jalloh, Habib et Kabia. (2015 August). "Intellectual capital: The pathway towards sustainable competitive advantage". International Journal of Economics, Commerce, and Management. 3(8). P238-362.

This study aims to critically examine literature reviews of intellectual capital, and analyze the relationship between intellectual capital and competitive advantage, besides the effect of (knowledge capital, social capital, and organizational/structural capital) as a competitive strategy and an indispensable source of sustainable competitive advantage. This study also has revealed the significant effect of IC as a pathway to sustainable competitive advantage.

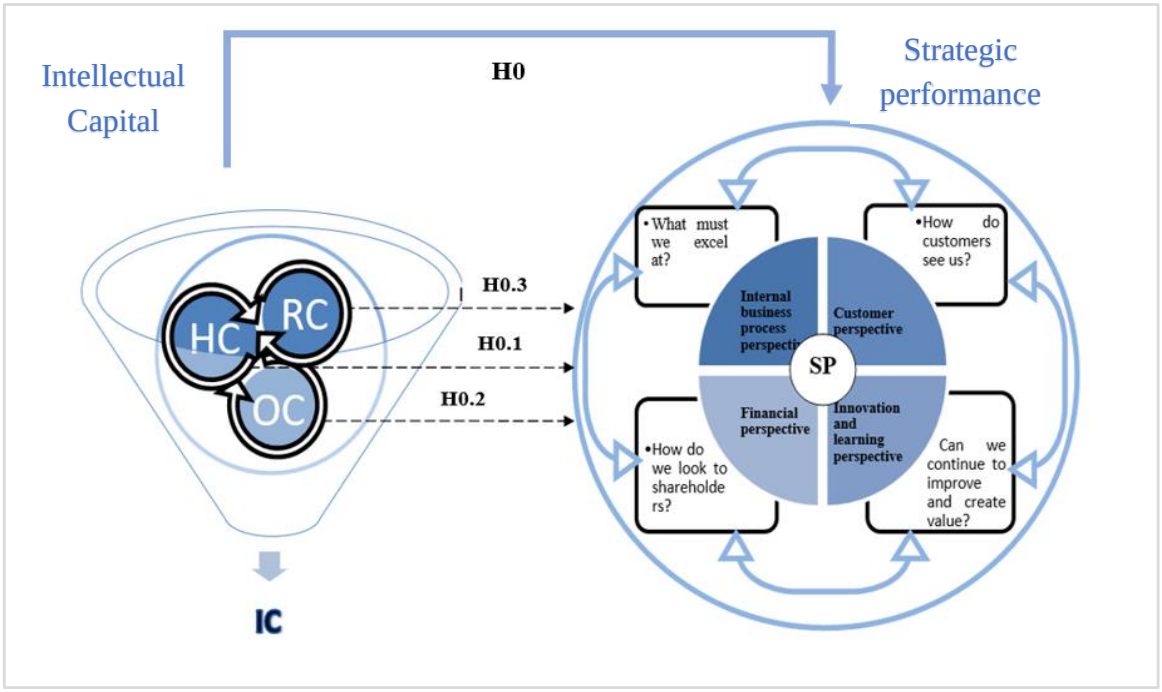
Research model and objectives

As indicated by the title of this thesis, Intellectual Capital ‘effects on firms’ strategic performance, therefore, a theoretical framework about ``intellectual capital``, ``strategic performance`` was performed, and an empirical study was applied, this led to an exploratory model of strategic performance in the economic firm.

This thesis provides an innovative model for firms, based on the resources and the capacities they have. Through these interactions, it is possible to generate added value for those firms through the transfer of inner knowledge, organizational learning, and sharing knowledge within the firm besides the strategic management models.

Therefore, this analytical approach is reflected in the thesis core model, aiming to contribute to developing this field research.

Figure 1: Model of the study



Source: Elaborated by the researcher

Based on the model suggested in figure 1, and after the found gap in the theoretical framework, of intellectual capital and strategic performance, we refer through this proposed model to the dynamic interaction among and between the intellectual capital to generate intellectual capital. Furthermore, creating the strategic value that appears in the firm's strategic performance through the perspectives of the balanced scorecard and the objective for each perspective in order to achieve the strategic goals, in addition to the integrated and dynamic relationship between these perspectives.

The main objective is to "explore and analyze the intellectual capital effect on strategic performance", and based on the main objective of this thesis, the following specific objectives were defined:

- Identify the main trends of literature and theoretical aspects of both variables, intellectual capital and strategic performance.
- Analyse literature reviews of our thesis subject in a specific period to generate clusters, which is an added value to the thesis.
- Direct attention to the importance of intellectual capital, especially with the resources-based view adoption for creating strategic value.
- Assess the level of intellectual capital from the point of view of the respondents in the form of our empirical study.
- Analyze the effect of each dimension of intellectual capital on strategic performance in the firm.

- Identify the intellectual capital 'dimension which has a highest significant impact on strategic performance in Condor Electronics.
- Provide suggestions that contribute to developing the intellectual capital management mechanisms for the firm of our empirical study, which is crucial for its strategic performance.

Research hypotheses

Based on previous literature review, and to achieve the goals that we mentioned above, we outline the following hypotheses as a preliminary answer to the main problem and its sub-questions, to test its validity.

H0.1: There is no effect of intellectual capital - in its various dimensions - on strategic performance. This hypothesis includes several sub-hypotheses:

H0.1.1: There is no effect of human capital on strategic performance.

H0.1.2: There is no effect of organizational capital on strategic performance.

H0.1.3: There is no effect of relational capital on strategic performance.

H0.2: There are no significant differences in the respondents' perceptions about the level of strategic performance due to organizational and profile variables.

Structure of the thesis

This thesis is structured into four chapters, with each chapter featuring a unique typology that is aimed to accomplish the proposed objectives. Therefore, we have developed a brief research plan as the following:

Chapter one: The relationship of intellectual capital to strategic performance– Systematic literature review: includes the following sub-titles; methodology and bibliometric analysis, analysis and results discussion, contributions by countries, conducting the analysis of the key terms, bibliographic coupling, co-citation network and cluster analysis, final thoughts, and future agenda.

Chapter two: Theoretical framework of strategic performance: includes the following sub-titles; strategic performance: definition, the key indicators of strategic performance (KPIs), strategic performance: measuring and reporting approaches, strategic performance management, creating value through the alignment of strategic performance with a strategy map.

Chapter three: Theoretical framework of intellectual capital and its effect on strategic performance: includes the following sub-titles; resources-based view: resources & capabilities (organizational learning & knowledge creation from a strategic perspective), intellectual capital conceptual framework: concept and dimensions (intellectual capital concept, intellectual capital dimensions), intellectual capital: measurement approaches & management processes, intellectual capital management processes, intellectual capital from a strategic perspective (aligning IC with value chain, aligning IC with blue ocean strategy).

Chapter four: Empirical study– Data analysis and results discussion: includes the following sub-titles; introducing Condor Electronics, Condor Electronics: vision and value creation principles, data analyses: descriptive statistics and normality test, a normality test: Skewness and Kurtosis test, statistics descriptive of survey statements, hypothesis test and interpreting the results, interpreting the Output of multiple regression analysis.

Finally, in the conclusion, we conclude by summarizing the main findings, indicating the results of the empirical study, the limitations of this research, and suggestions for future outlines of research.

Epistemology, research methodology, and reasoning approaches

Epistemology is the study of science, it questions what science is by discussing nature, methods, and knowledge. Epistemological reflection is essential for any researcher concerned with carrying out serious research because it makes it possible to establish the validity and legitimacy of research. All research work is based, in fact, on a certain vision of the world, uses a method, and offers results aimed at predicting, prescribing, understanding, constructing, or explaining. The explanation of the presuppositions of the researcher makes it possible to control his research process, increase the validity of the knowledge which results from it, and confer on it an accumulative character. Epistemological reflection is therefore consubstantial with any research that takes place (Thietart & coll, 2003). In different words, epistemology is the science of knowledge, the intellectual template, or the ideology of the search for truth, which directs the researcher to his path in the search for knowledge through systematic methods.

According to (Thietart & coll, 2003), three main epistemological questions are crucial to establishing the legitimacy of the research statements through questioning the research approach:

- What is the nature of the knowledge produced?
- How is scientific knowledge engendered?
- What is the value and status of this knowledge?

Within epistemology, there are several epistemological paradigms in which the researcher can answer these questions: the **positivist paradigm**, **the interpretivism paradigm**, and the **constructivist paradigm**.

The positivist paradigm is often presented as the paradigm dominating the sciences of the organization and claims a realistic positioning.

Interpretivism, defending the particularity of the human sciences in general and of the organizational sciences in particular, is traditionally opposed to positivism.

Finally, constructivism tends to extend the influence of his conception of knowledge within the community of researchers in organizational sciences.

A methodology is a main and general path that guides the research goal. It makes the main outline of the approach transparent.

Methodology with this perspective, it`s a compass or a beacon, a set of principles and global instructions to guide the research process, with no obliged prescribes what you should do in a

specific situation or a particular moment in time, such details entail methods and techniques (Jonker & Pennink, 2010).

There are many research methodologies that the researcher can resort to in his studies, which differ in terms of their classifications and names, and in this study, we will address the methodology through two classifications, qualitative and quantitative. It should also be noted here that there is confusion in some literature in terms of using the term methodology and methods, which refers to the techniques and tools used to achieve the objectives of the research, which differ, of course, according to the adopted research methodology.

Reasoning approaches are the process of using and analyzing existing knowledge to make conclusions, predictions, and explanations. Three types of reasoning are broadly categorized as deductive, inductive, and abductive approaches:

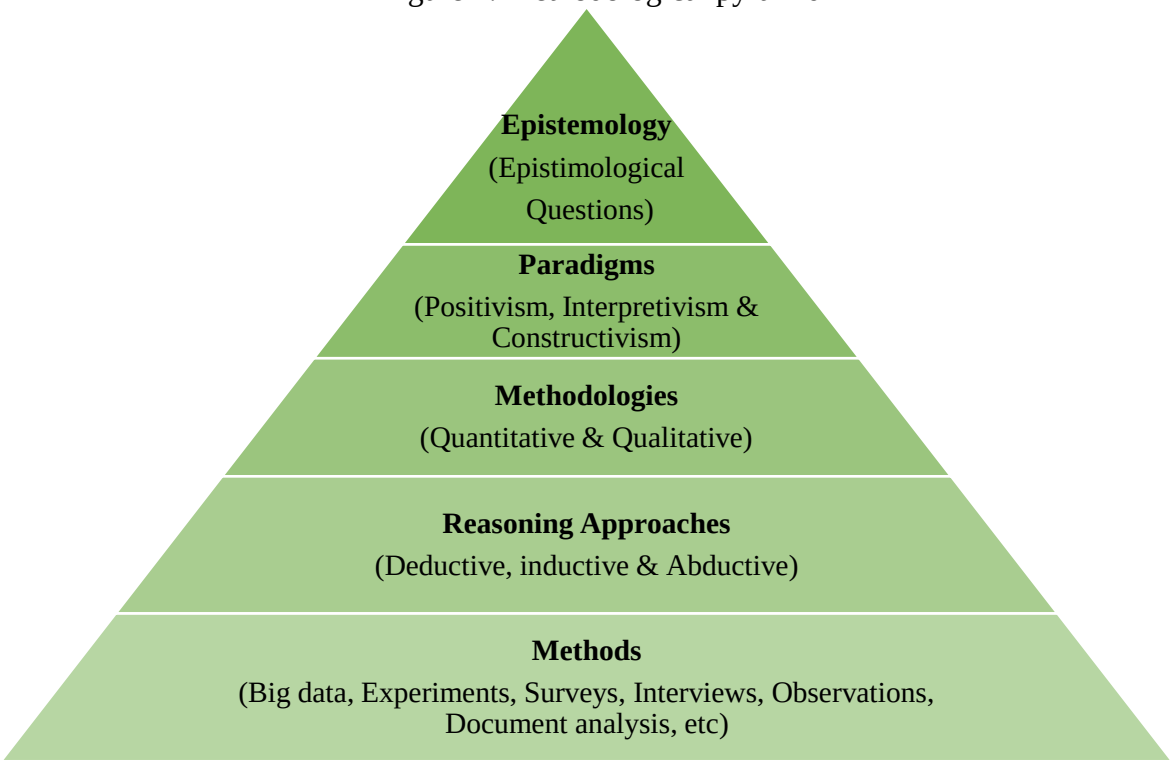
The deductive, which is usually utilized to analyze quantitative data, and the inductive, which is used to analyze qualitative data (O'Gorman & MacIntosh, 2015). Deductive reasoning refers to repeated attempts in the form of empirical tests of the main theory (Borgstede & Scholz, 2021). It begins with the assertion of a general theory to a specific conclusion, if the original or the general theory is true, then the conclusion must also be true (Butte College, 2023). It`s about the transition from the hypothesis or the outlined theory to the conclusion following logic basics, so, it does not have to be a transition from the general to the specific or from the total to the partial, we can say as well deductive reasoning is one of the clearest forms of mathematical proof.

The abduction is the process of building hypotheses based on an observation that needs interpretation, in other words, it refers to the ability to make the right guess, which comes in a flash, so it is a non-algorithmic process, but it depends on the power of insight behind scientific research. The inductive refers to the process of testing a hypothesis against reality through identified predictions. Induction starts from a theory, deducing from it predictions of phenomena, and observing those phenomena in order to see how nearly they agree with the theory (Flach & Kakas, 2000).

The scientific methodology applied in this thesis is qualitative and follows deductive reasoning to explain our results and to conclude by answering our research questions, with construction based on the logic of a chain reflection in descending order, from the general theoretical framework to the empirical stud and testing our hypothesis.

The following figure represents the methodological pyramid.

Figure 2: Methodological pyramid



Source: Elaborated by the researcher based on Thietart & coll (2003)

Data collection

Data collection methods differ according to the purpose and the circumstances of their use, as primary data collection methods for quantitative research, there are namely observation and experimentation, and the most developed mode of primary data collection in quantitative research is the questionnaire or the survey. The survey is the subject of particular in-depth study because it is a method of administering surveys that is very frequent in management, and which requires specific techniques.

A survey allows one to question employees directly by defining preliminary, qualitative approaches, and the modalities of responses through the so-called "closed" questions. It is a primary data collection tool well suitable for quantitative research since it allows large samples to be processed and to establish statistical relationships or numerical comparisons.

The survey on this study has been built depending on the adopted previous studies (Behrouzi & Ma'aram, 2019) (Chiesa, Frattini, Lazzarotti, & Manzini, 2009) and (Kim, Yoo, & Lee, 2011). We have also modified some of its statements in accordance with the objectives of this research and the nature of the firm under study. It is worth mentioning that we have distributed the Arabic version of the survey.

When determining sample size, a rule was proposed by Roscoe (1975), which is the number of respondents in a survey should be larger than 30 and less than 500, in multivariate research such as multiple regression analysis, the sample size should be at least preferably 10 times or more as large as the number of variables in the study. In this thesis, there are a total of 9 independent and dependent variables (including the dimensions of each variable) for multiple regression

analyses. Therefore, a sample size of 200 is appropriate to ensure data reliability and analyses (Tana, Yuenb, & Hac, 2018).

This investigation was designed to further understand the effect of intellectual capital on strategic performance in Condor Electronics- Bordj Bou Arreridj. The data were collected using a survey distributed to the firm employees, in July 2022. 200 surveys were distributed, and 170 surveys were collected and well filled which is 85% obtained as rate response. The survey was randomly distributed to the study sample.

For secondary data collection, we relied on the Web of Science (WoS) and Scopus databases, besides some referential books about our subject and research methodology.

Measurement

As challenging to add new value to this thesis and for future research, we intended to mix the empirical approach using the survey analysis to test the hypothesis of this study and the systematic literature review approach for co-citation network data and clusters analysis based on the VOSviewer V.1.6.16 software and NVivo (Release 1.7.1) software for qualitative analysis of publications content.

Constructing a survey for quantitative research is constructing a measurement instrument. It is therefore necessary to choose the measurement scales to be used before tackling the problems of wording the organization of surveys. Beyond the type of scale, the researcher is confronted with a choice between the use of pre-existing scales or the creation of his scales (Thietart & coll, 2003).

The main measurements we relied to use on in this study are Descriptive Statistic Measures, Cronbach's Coefficient Alpha and Guttman Split-Half Coefficient, Skewness & Kurtosis, Analyse of Variance, Multiple Regression, One-Way-ANOVA, and Independent- Samples T-Test. To conduct calculations, we have used IBM SPSS V.26 software.

In this thesis, we adopted a Likert-type scale (from 1: Insignificant to 5: Extremely significant) to use in indicating the importance of each of the 58 general intellectual capital statements, and the 72 general strategic performance statements.

According to (Thietart & coll, 2003), to ensure the reliability of a measurement instrument, we have to make sure that if we measure the same object or the same phenomenon several times with the same measuring instrument, we obtain results that are as similar as possible. To do this, it is necessary to calculate correlations between replicated or reproduced measurements of the same object or phenomenon. obtained by the same instrument. This replication can be done over time (different measurements at different times) or by different individuals (different observers, different coders).

To judge the reliability and validity of the quantitative measuring instrument. the researcher will most often be led to refer to the "true value model", which consists of breaking down the result of measurement into different elements: the true value (theoretically, the perfect measurement) and the terms of error (random error and systematic error).

The measurement obtained = true value + random error + systematic error

There is “random error” when the phenomenon measured by the same instrument may be subject to hazards such as the circumstances, the mood of the persons questioned, and the fatigue of the interviewer. It is however important to the validity and reliability of research. The measurement process itself induces random error. The distinction between the different indicators used should not be made according to whether or not they induce random error, but rather according to the level of random error. In a general way. the random error is related to the reliability of the measurement instrument: the more reliable the measurement instrument, the lower the random error.

Contributions

This thesis presents several contributions to the literature on intellectual capital and strategic performance, theoretically and empirically. First, Theoretically, we were seeking to analyze some concepts of intellectual capital and its sub-dimensions, and how intellectual capital can be created through that process among the sub-dimensions within the firm, by adopting a strategic perspective and using some strategic management tools. Furthermore, through a systematic analysis of the literature reviews on the variables of this thesis, in a certain period and through the use of keywords to search in the database Scopus, we concluded a set of clusters that can be considered a crucial contribution to this thesis, which can be relied upon in interpreting and proving the effect of intellectual capital on strategic performance, as well as in building models for future studies.

Empirically, this study explores the effect of intellectual capital on strategic performance at Condor Electronics. The sample was analyzed in both ways, full sample and subsamples were analyzed through the subdimensions of each variable which have been created according to the thesis model. This is a major contribution for this firm to connect its intellectual capital with growth opportunities and financing decisions through the investment in core competencies and developing the processes of managing intellectual capital to create strategic value, which is lacking in much of the literature on intellectual capital, as well as firms in the same sector in their management methods and investment and financial decisions. So, this can contribute to making firms rely on internal financing to fund their innovative projects.

This explains the importance of intellectual capital on strategic performance on firms' strategic positioning and growth opportunities, especially in high-tech firms. We believe the results of this study will be interest of to academics and firm`s stakeholders, managers shareholders, and investors in intellectual assets, high-tech markets, and knowledge-based firms.

Chapter I: The relationship between intellectual capital and strategic performance– Systematic literature review

Chapter I: The relationship between intellectual capital and strategic performance– Systematic literature review

Introduction

Through a systematic literature review, we aim to explore intellectual capital' effects on firm strategic performance, by analyzing bibliometrics data extracted from the Scopus database. We have descriptively analyzed (296) reviews in the mainstream of this study subjects published in the last two decades period of (2003-2023), in peer-reviewed journals from the Scopus database. The most important finding is that intellectual capital is a strategic source for value creation, intellectual capital has a significant impact on the strategic performance of firms including its dimensions (human capital, organizational capital, and relational capital). This is consistent with the logic of RBV about achieving strategic successes from internal resources and capabilities which can improve firm processes and create value from the effective management of these resources and strategic agility.

I. Methodology and Bibliometric Analysis

Many methodologies and approaches can be appropriate and can be adapted for a particular research paper. A systematic literature review of the available academic research was carried out on the topic of this research. There are many sources and databases that can be used to review the literature, we conducted a search in the Scopus database, which is one of the largest and most reliable databases of scientific documents, by simultaneously using: ["intellectual capital"], [strategic AND performance], as keywords to identify different types of documents related to this research study. Searching for articles published from 2003 to 2023. The search was limited to peer-reviewed literature written in ["English"], ["Portuguese"], ["French"], and ["Arabic"] in [Business, Management, and Accounting], [Social Sciences], [Decision Sciences], and [Economics, Econometrics, and Finance] subject areas. This research was carried out on February 09th, 2023.

These search criteria yielded 296 articles; we analyzed the content of articles, and/or the abstract according to the availability of the article allowed and the ability to open it (not all articles are open access). This number is relatively small, indicating that the search in this field and the subject is still developing. The articles that were accessed do not address the same topic completely but are at least related to one variable of the study variables. We have summarized what is mentioned above in table 2.

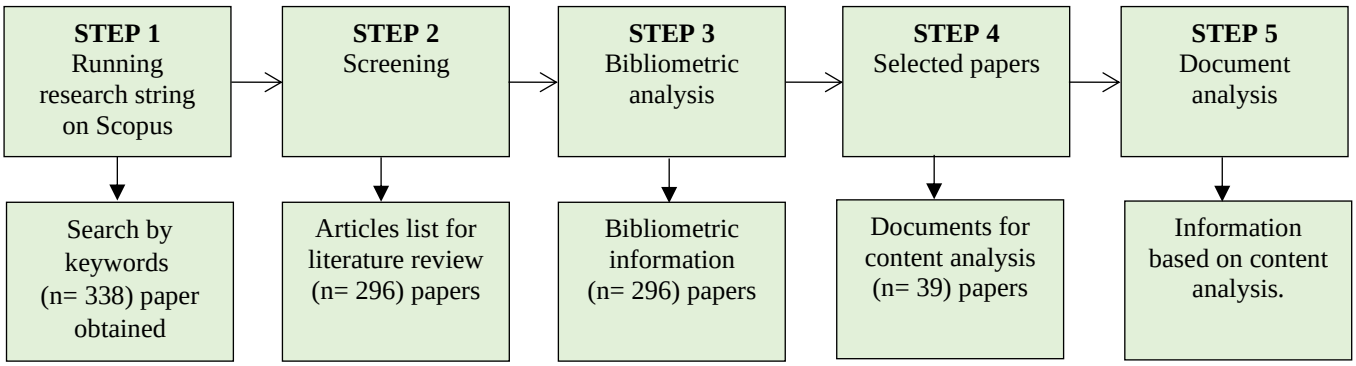
Table 1: Details of the search string ran on Scopus.

Search field	Selected criteria
Date Range	Published from 2003 to 2023
Language	English, Portuguese, French, Arabic
Run on	Abstract, title, keywords
Scientific field	Business Economics
Date of running search string	February 09th 2023
Total articles yielded in Scopus	296

Source: Elaborated by the researcher

This systematic paper was carried out using Microsoft Excel to construct graphics and VOSviewer software version 1.6.16 to construct bibliometric maps and clusters and reference networks. Figure 3 demonstrates the research protocol.

Figure 3**:** Steps of systematic review (research protocol)



Source: Elaborated by the researcher

II. Analysis and Results Discussion

Table 3 addresses the top ten most cited scientific publications resulting from searching the database Scopus using the keywords: ["intellectual capital"], [strategic AND performance], the languages: ["English"], ["Portuguese"], ["French"], and ["Arabic"] in [Business, Management, and Accounting], [Social Sciences], [Decision Sciences], and [Economics, Econometrics, and Finance] subject area.

Table 2: Top 10 most cited adopted scientific literature

	Authors	Journal	Title	Type	Citations
1	(Riahi-Belkaoui, 2003)	**Journal of Intellectual Capital**	Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views	Quantitative	319
2	(Maditinos, Chatzoudes, Tsairidis, & Theriou, 2011)	**Journal of Intellectual Capital**	The impact of intellectual capital on firms' market value and financial performance	Quantitative	299
3	(Baskerville & Dulipovici, 2006)	Knowledge Management Research and Practice	The theoretical foundations of knowledge management	Qualitative	261
4	(Gho, 2005)	**Journal of Intellectual Capital**	Intellectual capital performance of commercial banks in Malaysia	Quantitative	241
5	(Marr, Neely, & Schiuma, 2004)	**Journal of Intellectual Capital**	The dynamics of value creation: Mapping your intellectual performance drivers	Qualitative	229
6	(Marr, Schiuma, & Neely, 2004)	Business Process Management Journal	Intellectual capital – defining key performance indicators for organizational knowledge assets	Qualitative	193
7	(Craighead, Hult, & Ketchen Jr., 2009)	Journal of Operations Management	The effects of innovation-cost strategy, knowledge, and action in the supply chain on firm performance	Quantitative	163
8	(Carlucci, Marr, & Schiuma, 2004)	International Journal of Technology Management	The knowledge value chain: How intellectual capital impacts on business performance	Qualitative	150
9	(Jardon & Martos, 2012)	**Journal of Intellectual Capital**	Intellectual capital as competitive advantage in emerging clusters in Latin America	Quantitative	145
10	(Cabrilo & Dahms, 2018)	Journal of Knowledge Management	How strategic knowledge management drives intellectual capital to superior innovation and market performance	Quantitative	135

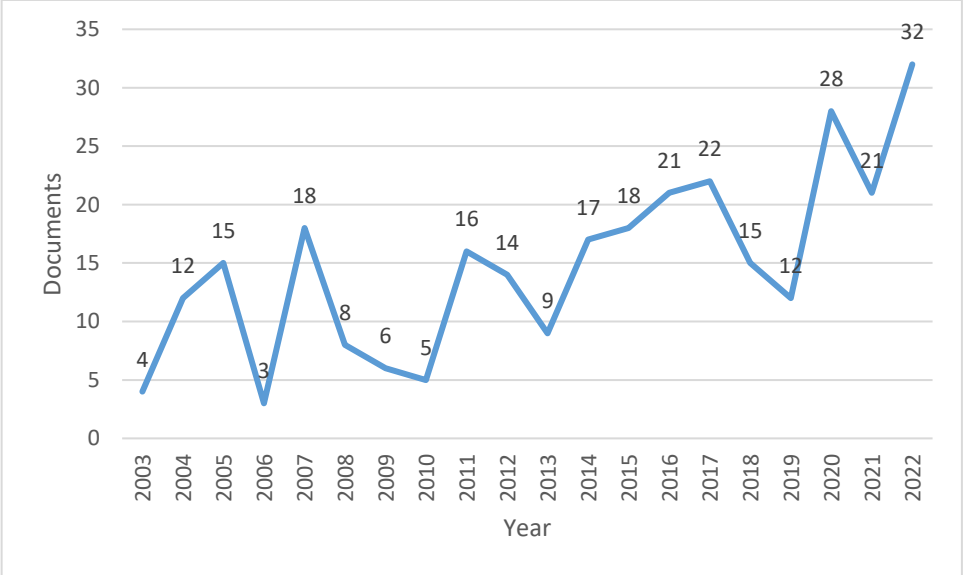
Source: Elaborated by the researcher

According to table 3, the 10 top-cited studies were cited 2135 times in total and were published between 2003 and 2018. The first cited study (Riahi-Belkaoui, 2003) was cited by 319 documents which are 87th percentile Citations in Scopus. Followed by the study of (Maditinos, Chatzoudes, Tsairidis, & Theriou, 2011) cited in 299 documents which are 99th percentile Citations in Scopus, the third most cited study is (Baskerville & Dulipovici, 2006) cited by 261 documents which are 97th percentile Citations in Scopus. Then (Gho, 2005) cited by 241 documents which is 90th percentile Citations in Scopus. Then (Marr, Neely, & Schiuma, 2004) cited by 229 documents which is 99th percentile Citations in Scopus. Then (Marr, Schiuma, & Neely, 2004) cited by 193 documents which is 96th percentile Citations in Scopus. Then (Craighead, Hult, & Ketchen Jr., 2009) cited by 163 documents which is 95th percentile Citations in Scopus. Then (Carlucci, Marr, & Schiuma, 2004) cited by 150 documents which is 98th percentile Citations in Scopus. Then (Jardon & Martos, 2012) cited by 145 documents which is 97th percentile Citations in Scopus. Then (Cabrilo & Dahms, 2018) cited by 135 documents which is 98th percentile Citations in Scopus,

According to table 3, We note that six of ten (6/10) of the studies are quantitative while four of ten (4/10) are qualitative studies. Whereas most of these studies focused on intellectual capital and its impact on the firm`s performance, especially financial performance, and intellectual capital indicators that contribute to achieving profits and creating value for the firms. Moreover, we can conclude from the top ten cited studies that these studies attracted the attention of researchers, also the subject of intellectual capital effect on a firm`s performance is still developing, and there is a gap that must be filled with future studies, such as the lack of qualitative studies, and performing research models involves the strategic perspective of intellectual capital in many practical details.

Figure 4 is addressing the document's evolution per year according to our research results on Scopus from 2003 to 2023 in ascending order.

Figure 4**:** Total Publications by Year



Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

Through figure 4 we have performed a graphic of peer-reviewed publications evolution per year using Microsoft Excel, during the last two decades where the first four publications were in the year 2003 on the Scopus database, whereas the research in the database covered the period from 2003 to < 2023, where the number of publications has raised rapidly and unsteadily during the last two decades. This indicates the increasing attention to the study subject and the wobbling increase of publications during this period is likely due to the increased interest and uncertainty about the intellectual capital concept, the developing research methods, theories, and thinking approaches. Furthermore, the changing business environment and combativeness factors, data availability, and technology challenges and facilities.

Figure 5 demonstrates the top 10 journals where publications have been published the most. The head journal with the number of publications is the Journal of Intellectual Capital with 48 documents, followed by the International Journal of Learning And Intellectual Capital with 9 documents, then Management Decision, Measuring Business Excellence and Sustainability Switzerland with 5 published documents each, followed with Journal of Knowledge Management with 4 publications, then Academy of Strategic Management Journal, Business Process Management Journal, Journal of Information And Knowledge Management and

Knowledge And Process Management with 3 publications each. In total the top 10 journals that have been published are 88 publications or 29.73% of the yielded publications considered in this systematic analysis.

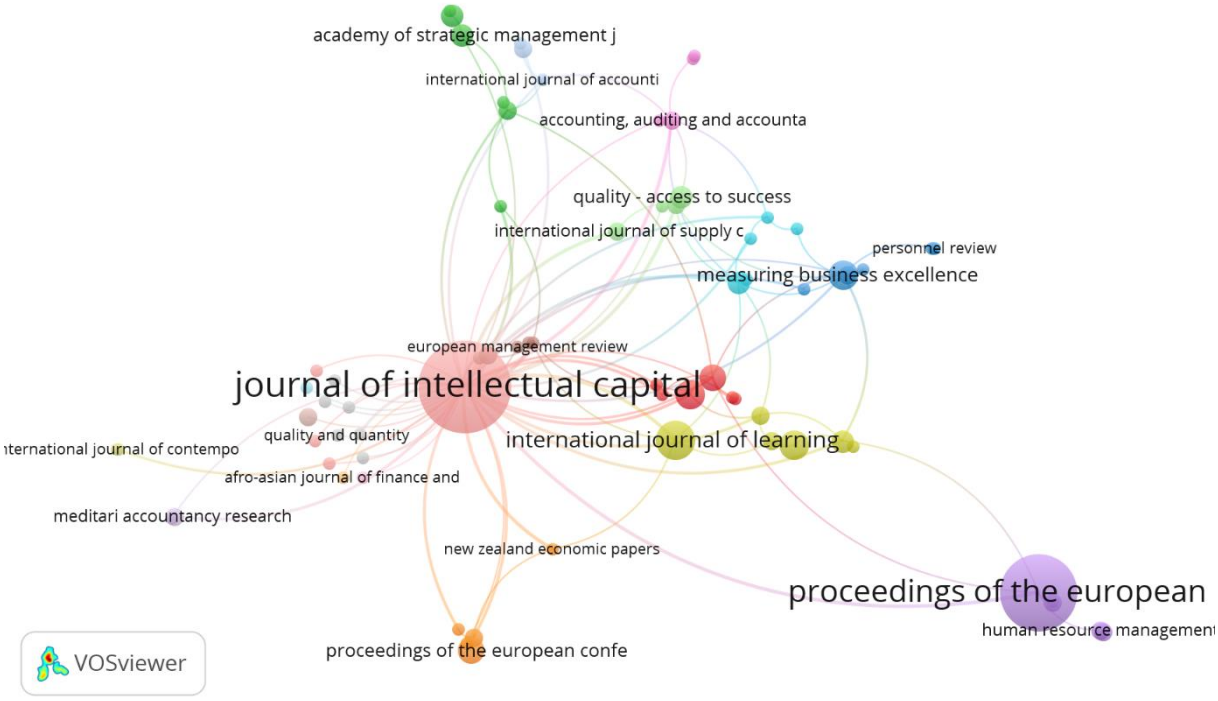
Figure 5: Distribution of top 10 articles by journal

Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

Thus, journals with at least one publication and publications with at least one citation were selected, and this yielded 128 journals. The largest set of connected journals in terms of a citation or interrelated publications consists of 73 journals, which means that 55 journals are not connected (see Figure 6).

Figure 6 shows a map of citations received by a document or the total normalized number of citations received by all documents published by a source or article.

Figure 6: Citation analysis of sources



Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

We have run the citation analysis for assessing the impact and visibility of this research by analyzing the bibliometric data using VOSviewer software V.1.6.16, for visualizing the journal's map and approaching its performance and attribution to this study subject.

The citation analysis of sources (journals) shows that the sources have received a high number of citations, with a few sources having a particularly high impact. The map visualization highlights the clusters of highly cited sources and the connections between them. It also shows that the sources are highly interconnected, indicating that they have a significant influence on each other. The high number of citations received by the journals indicates that they have had a significant impact on the field of intellectual capital and strategic performance. The clustering of highly cited journals and the connections between them illustrates the most influential areas of research. The interconnectedness of the journals indicates that there is a strong network of research in this area, with journals influencing each other and building on each other's work.

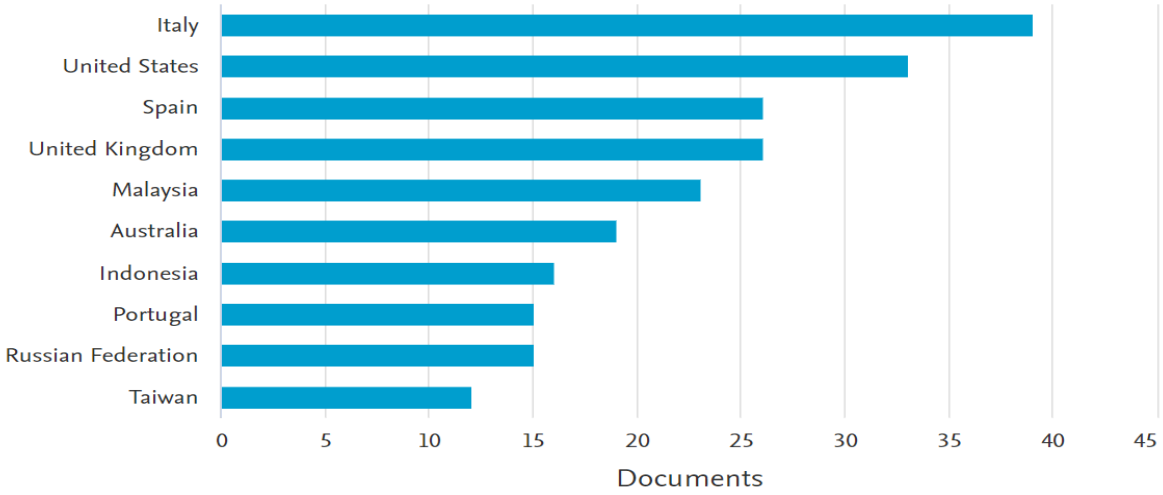
The results of citation analysis of sources indicate that the impact and visibility of the journals are affected by citation rate, it is important to identify the most influential journals and areas of research. One of the effective techniques for investigating the IC effect on strategic performance's structure and the connections between journals is the visualization of the citation patterns.

III. Contributions by countries

To determine which country or territory with the most top-contributed publications in this study subject, we have performed an analysis of the most contributed countries by published documents using VOSviewer and depending on our bibliometric data outputs as explained above. the top contribiuted coutry was Italy (n=39), followed by the United States with (n=33), then Spain and United Kingdom with (n=26), then Malyasia with (n=23), followed by Australia with (n=19), and Indonisia with (n=16), then Portugal and Russian Federation with (n=15), the Taiwan with (n=12) publications.

This result have been stem from several reasons such as the selected keywords and editing languages as mentioned in the research protocol above. Also, it can refer that these countries are providing a supportive research infrastructure including funding of research projects on this subject which have attracted the interest among researchers and academics, and practitioners. Moreover, the well-established research systems. The lower numbers of publications in some countries than others does not necessarily mean that there is a lack of research or interest in the subject or even a lack of research infrastructure, it could be an indication of other factors that are affecting the visibility and impact of the research which is out of our selected research criteria. This also indicates that these countries contribute to the development of theories and approaches to building new research models on the impact of intellectual capital on firms` performance.

Figure 7: Top 10 contributed countries



Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

IV. Conducting the analysis of the key terms

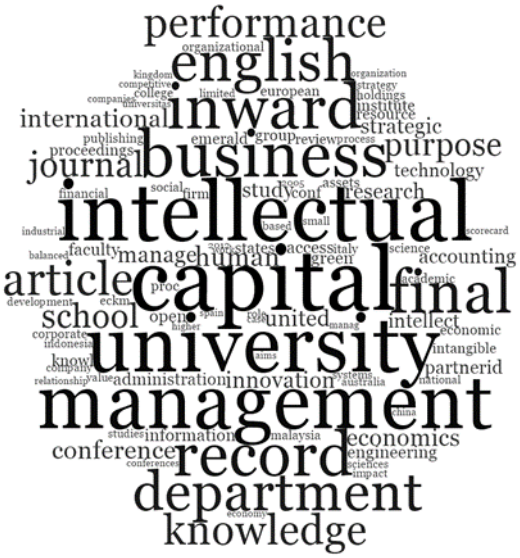
As we continue with our bibliographic analysis of the various publications' contents yielded from the Scopus database, to get insights into the content and to develop a deeper understanding of publications on intellectual capital and strategic performance.

We have performed a qualitative analysis using NVivo (Release 1.7.1) software to determine the most frequent terms which help to indicate the key topics and concerns that are being discussed in these publications, and to identify patterns and trends in intellectual capital and

strategic performance, also to develop a more nuanced understanding of the different perspectives that exist on this field of research under analysis. It can also help to refine our research questions and hypotheses or to develop a more targeted approach to analysis.

Figure 8 demonstrates the results of the visualization of the most quoted 100 terms with more than four letters mentioned in the yielded publications under analysis.

Figure 8: Visualization of the most quoted 100 terms in the articles analyzed.



Source: Elaborated by the researcher based on NVivo 1.7.1 output

Figure 8 visualizes the most quoted 100 words or terms in the 296 publications. The top word with the highest level of frequency is "Capital" which got 441 frequencies with a weighted percentage of 1.49%. Followed by the word "Intellectual" with 411 frequencies and a weighted percentage of 1.39%. Trailed by the word "University" has been repeated 384 times with a weighted percentage of 1.30%. The fourth word is "Management" with 380 frequencies and a weighted percentage of 1.28%. Then the word "Business" was repeated 315 times with a weighted percentage of 1.06%. While the word "Performance" ranked thirteenth with 191 frequencies and a weighted percentage of 0.64%, and the word "Strategic" ranked twenty-fifth with 83 frequencies and a weighted percentage of 0.28%.

V. Bibliographic coupling

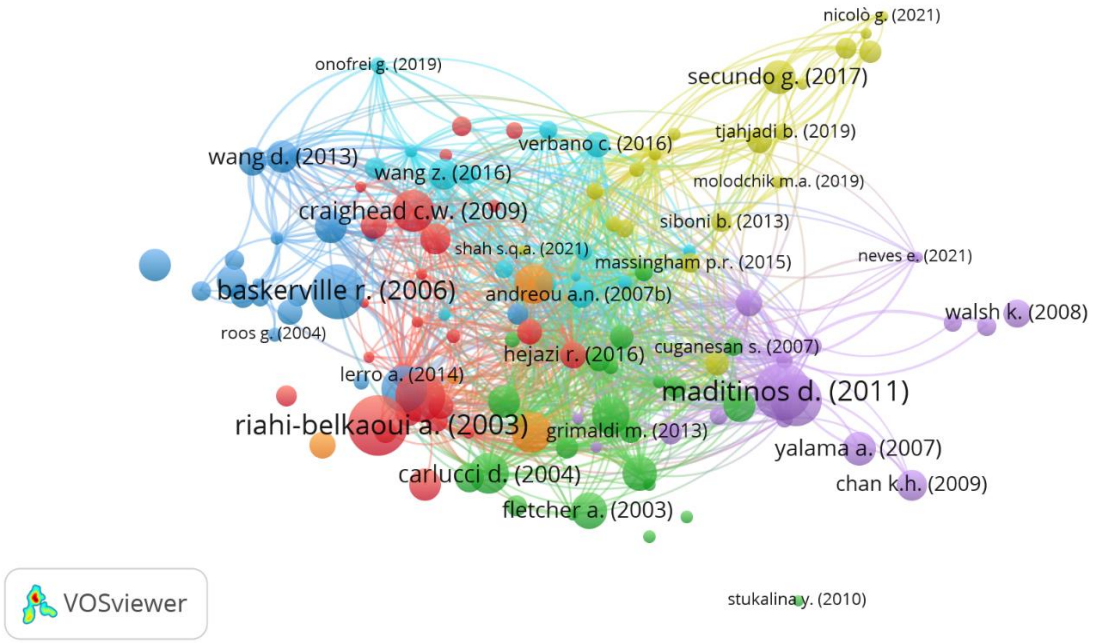
Bibliographic coupling is a widely used analysis, this technique assumes that publications that link to other related publications have relevant research topics and serve the same purpose. Also, publications might be connected even when they do not cite one another, and authors do not have the chance to carefully review every article produced on the relevant subject. We aim through the bibliographic coupling to determine the relationship between two or more publications, based on the overlap of the citation they use. Thus, bibliographic coupling determines the similarity which cannot be understood via the citation link between two related publications instead of looking for direct citations.

To identify the tendencies of the literature on intellectual capital and strategic performance, an analysis of the bibliographic coupling of documents was performed. According to the

bibliographic coupling analysis of documents, there were 125 publications between 296 publications with a minimum number of 10 citations, and 123 publications are connected to each other. This network depicted 7 clusters, 3906 links, and 9964 total link strength were revealed. The publication with the highest number of links 109 and total link strength of 615 and 68 citations is (Hejazi R; Ghanbari m.; Alipour M. 2016. Intellectual, Human and Structural Capital Effects on Firm Performance as Measured by Tobin's Q. knowledge and process management, 23(4), 259-273.

Publications with similar research topics are clustered by color, curved links between the publications show how they are cited by one another. The network map, clusters, and publications are illustrated in Figure 9.

Figure 9: Bibliographic Coupling of documents



Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

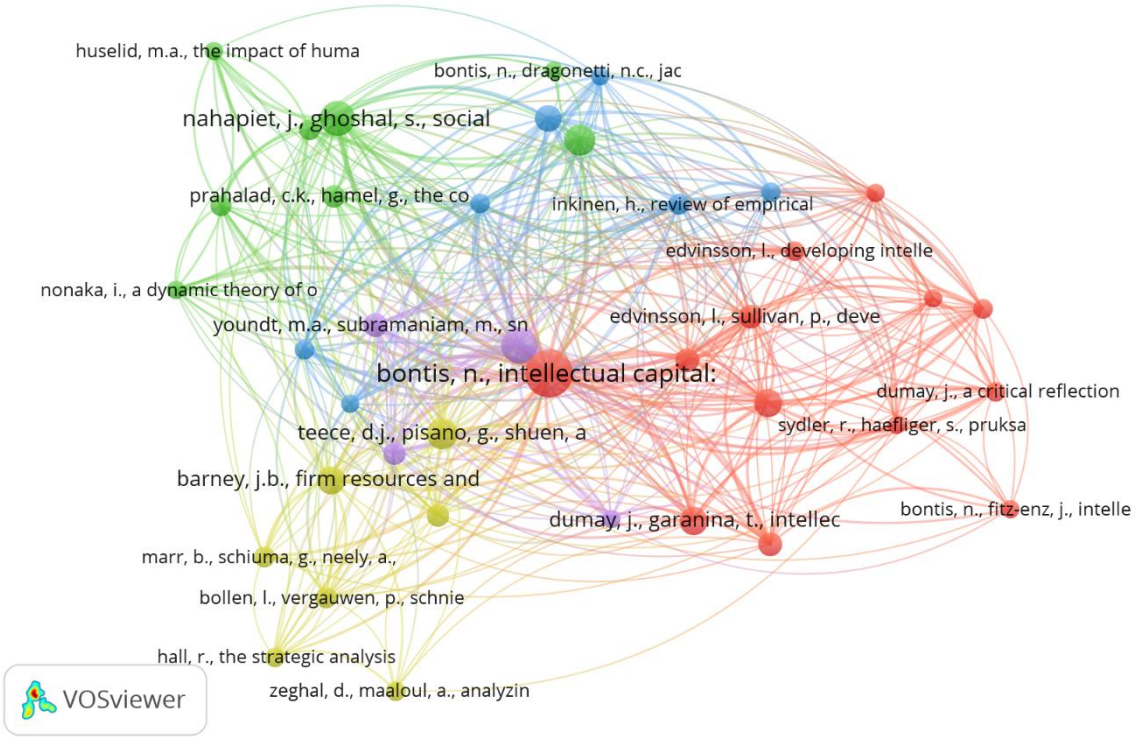
VI. Co-citation network and cluster analysis

We have carried out a co-citation analysis of cited references to analyze the yielded data from Scopus research on intellectual capital and strategic performance. The idea behind co-citation analysis is that documents that are cited together in multiple publications are likely to be related in some way, and therefore co-citation analysis has been carried out to determine the most important and influential references in intellectual capital and strategic performance.

In the co-citation analysis of cited references, the frequency with which two references are cited together in each cluster of publications is considered as a measure of the strength of the relationship between the two references. The more two documents are cited together, the stronger the relationship between them. The publications with the greatest co-citation frequencies are the most significant and influential publications.

The publications in the network map were clustered using VOSviewer V1.6.16 cluster analysis. According to the co-citation analysis of documents, there were 40 cited references between 15355 and with a minimum number of 7 citations, 39 references are connected to each other. This network depicted 5 clusters, 434 links, and 882 total link strengths were revealed. The publications in each cluster are classified in Table 4.

Figure 10: Co-citation network of documents



Source: Elaborated by the researcher based on VOSviewer V.1.6.16 output

We have run a co-citation analysis as a unique technique for understanding and building a cognitive structure of the intellectual capital effect on strategic performance. This analysis includes tracking pairs of publications that are cited together in the source publication. When the same pairs of references are co-cited by many authors, clusters start to be formed. The co-cited references in these clusters tend to have common themes. Thus, by using co-citation analysis in combination with single-link clustering and multidimensional scaling, we can create a visual map of the structure of intellectual capital's effect on strategic performance, which can be very useful for understanding the relationships between different areas of research and identifying new models for future research.

As seen in figure 10, the VOSviewer outputs a network map with different colors which are the clusters, each note or circle represents a publication, and the link between two notes or the curved links represents the co-cited publications. To identify the tendencies of the literature reviews on intellectual capital and strategic performance, the co-citations of references we have carried out resulted in five clusters (see Figure 10): Cluster 1 (the red); intellectual capital measurement, knowledge management, and financial performance. Cluster 2 (the green); intellectual capital management, knowledge creation, absorptive capacity, and core competencies to improve profits and achieve sustained competitive advantage. Cluster 3 (the blue); Knowledge Management and Firm Performance: The Crucial Role of Intellectual Capital

and Knowledge Sharing. Cluster 4 (the yellow); Strategic Analysis, BSC, and Intellectual Capital-based view to achieving sustained competitive advantage. Cluster 5 (the purple); investing in intellectual capital and learning capabilities to improve innovation performance.

Table 3: Clusters analysis

Cluster 1 (13 items)	**Cluster 2** (08 items)	**Cluster 3** (07 items)	**Cluster 4** (07 items)	**Cluster 5** (04 items)
(Bontis, 2001) (Bontis & Fitz-enz, 2002) (Bontis, 1998) (Dumay, 2016) (Dumay & Garanina, 2013) (Dzenopoljac, Janosevic, & Bontis, 2016) (Edvinsson, 1997) (Edvinsson & Sullivan, 1996) (Hussinki, Ritala, Vanhala, & Kianto, 2017) (Kianto, Sáenz, & Aramburu, 2017) (Petty & Guthrie, 2000) (Roos & Roos, 1997) (Sydler, Haefliger, & Pruksa, 2014)	(Barney J. , 1991) (Bontis, Dragonetti, Jacobsen, & Roos, 1999) (Cohen & Levinthal, 1990) (Huselid, 1995) (Nahapiet & Ghoshal, 1998) (Nonaka, 1994) (Prahalad & Hamel, 1990) (Youndt & Snell, 2004)	(Andreeva & Garanina, 2016) (Bontis, Keow, & Richardson, 2000) (Inkinen, 2015) (Reed, Lubatkin, & Srinivasan, 2006) (Tovstiga & Tulugurova, 2007) (Wang, Wang, & Liang, 2014) (Wiig, 1997)	(Barney J. , 1991) (Bollen, Vergauwen, & Schnieders, 2005) (Hall, 1992) (Marr, Schiuma, & Neely, 2004) (Teece, Pisano, & Shuen, 1997) (Wernerfelt, 1984) (Zeghal & Maaloul, 2010)	(Hsu & Fang, 2009) (Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011) (Subramaniam & Youndt, 2005) (Youndt, Subramaniam, & Snell, 2004)

Source: Elaborated by the researcher

Cluster one: Intellectual capital measurement, knowledge management, and financial performance.

Column 1 represents the list of the thirteen publications that constitute the first cluster, which is over the years (1996-2017), whereas the study of (Bontis, 1998) is the most cited and influential document within this cluster, with 43 citations. In figure 10, we can notice the size of this publication's node in the network visualization, The larger the node, the more times the publication has been cited.

According to (Bontis, 2001), while the IC is the crux and crucial for sustained competitive advantage and measuring such capital can be a significant challenge, attempts to measure IC were carried out through several measurement models and approaches such as Skandia Navigator, the Balanced Scorecard, and the Intellectual Capital Efficiency (ICE). Bontis in his study highlighted the strengths and weaknesses of each model. Also, he addressed his model, the Intellectual Capital Index (ICI) as a measuring IC approach to assess the value of firms` knowledge assets, determine areas for improvement, and track their progress over time.

Briefly, this study provides valuable insights into intellectual capital management and highlights the importance of measuring and managing knowledge assets effectively.

A causal map was addressed by (Bontis & Fitz-enz, 2002), of the factors that influence and are affected by human capital, as a core key component of IC. Thus, assessing the return on investment (ROI) of human capital can be crucial for optimizing the firms` IC value. The causal map outlines the various factors that cause human capital or contributes to human capital development, and the main consequences factors of human capital, such as improved performance, innovation, and customer satisfaction. Also, the authors in this study pointed out that measuring the ROI of human capital is challenging.

Overall, this study provides a useful framework for understanding the importance of human capital in creating and sustaining competitive advantage and enhancing understanding of intellectual capital and how to measure its ROI.

The exploratory study of (Bontis, 1998) developed models for intellectual capital measurement: the Human Capital Index (HCI), the Structural Capital Index (SCI), and the Customer Capital Index (CCI). Bontis also identifies in this study the main factors that contribute to developing and utilizing intellectual capital, including the culture of the firm, the use of technology, and the quality of communication and collaboration among employees. These developed models can be useful to assess and manage firms` knowledge assets.

In nowadays of the knowledge economy, (Dumay, 2016) believes that IC is becoming more important, therefore, it is needed to understand and report IC. The author criticizes IC reporting models like BSC and IC statement, he argues that these approaches have limitations such as over-focusing on measuring and managing IC within the firm, without providing sufficient information for external stakeholders. Thus, there is a need for firms to communicate information about their IC in a way to be integrated with financial and sustainability reporting. This study (Dumay, 2016) is providing a thought-provoking (critical) and insightful perspective on the future of IC reporting and disclosure.

(Dumay & Garanina, 2013), argues the importance of a shift from theoretical exploration to practical application, and the need for more critical reflection on the assumptions and implications of IC management practices. The authors also criticized the BSC and IC statement approaches have simplistic assumptions about the IC which can contribute to narrow and misleading views of organizational performance and value creation. The authors provide a critical and reflective approach to intellectual capital management, which involves questioning and examining the assumptions of IC management and fostering continuous interaction and learning with stakeholders. Moreover, addressing the challenges and opportunities for moving towards a reflexive approach to IC management, such as the need for greater collaboration and communication within firms, and the potential benefits of improved innovation and organizational learning.

According to (Dzenopoljac, Janosevic, & Bontis, 2016), intellectual capital is a crucial engine for innovation, productivity, and competitiveness, and has a significant effect on financial performance. The authors investigated the relationship between intellectual capital and financial performance by using several measures of IC with its dimensions (human capital, structural capital, and relational capital), also classic financial measures such as return on assets and return on equity. This study concluded that IC has a positive and significant effect on financial performance in the Serbian Information and Communication Technology (ICT)

industry. The authors went further with discussing the implications of these findings for managers and policymakers (for the important role they play in supporting IC and promoting innovation and knowledge creation and sharing) in the Serbian ICT industry, whereas investing in intellectual capital can be an effective strategy for improving financial performance and increasing sustained competitiveness. Briefly, the authors in this study provided valuable insights into the intellectual capital effect on financial performance in the Serbian ICT industry and highlights the importance of investing in intellectual capital as a strategy for achieving strategic success and competitiveness.

(Edvinsson, 1997) addresses the development and implementation of Skandia's IC management (ICM) ongoing system, which is a result of the firm's focus on IC as a crucial source of value creation. This model can be useful for improving strategic decision-making, innovation, and creativity, increasing employee motivation and engagement. Also, this study is considered a very important case study of how effective, useful developed Skandia model and IC management system can be realized.

The study of (Edvinsson & Sullivan, 1996) also proposed a model to identify, measure, and manage their intellectual capital components and how they affect firms' strategic success. While IC is a crucial source of competitive advantage and strategic success, the effective management of IC can have a significant positive effect on firms` strategic performance. This emerges the need for firms to develop strategies for effectively managing their IC to maintain a sustained competitive advantage in today's rapidly changing business environment.

According to (Hussinki, Ritala, Vanhala, & Kianto, 2017), IC including its dimensions positively affects and predicts the firm performance, whereas knowledge management practices mediate the relationship between intellectual capital and firm performance as a strategic tool to leverage the value of intellectual capital and upgrade firm performance. Thus, the IC and knowledge management practices are vital for achieving sustained strategic performance.

According to (Kianto, Sáenz, & Aramburu, 2017), knowledge-based HRM practices positively affect IC and innovation. The authors argue that knowledge-based HRM practices, such as training and development, career planning, and knowledge sharing, can develop human capital and therefore upgrade intellectual capital, which in turn promotes innovation. Furthermore, IC has a mediating role in the relationship between knowledge-based HRM practices and innovation. Thus, firms should adopt a knowledge-based approach to HRM practices to improve their intellectual capital and foster innovation.

(Petty & Guthrie, 2000) Highlights the growing importance of IC and its effective management as a source of value creation for firms. The authors argue that IC includes both explicit (tangible) and implicit (intangible) knowledge, which has critical importance in creating and sustaining competitive advantage. Thus, integrating IC into the strategic planning process and aligning IC management with strategic objectives is a must.

This study also discussed the challenges of IC management, such as determining and measuring IC, although the measurement approaches provided by several practitioners and authors such as BSC and IC monitoring and Skandia Navigator. Therefore, there is a need for effective knowledge management practices, measuring, reporting, and managing IC which leads to improved financial performance, customer and employee satisfaction, and increased innovation and learning to create and sustain competitive advantage in the knowledge economy.

According to (Roos & Roos, 1997), nowadays in the knowledge economy, the firms` value is increasingly driven by their IC. This emerges the need for firms to measure and manage their IC to create and sustain competitive advantage. Furthermore, the authors highlight the importance of benchmarking intellectual performance against competitors and using the results to make strategic decisions.

(Sydler, Haefliger, & Pruksa, 2014) explored the effect of IC on firm profitability, while IC is recognized as a crucial source of value creation for firms, it is difficult to measure and its impact on financial performance is not well understood. Thus, a method was proposed for measuring IC using financial figures and exploring its relationship with firm profitability. Therefore, managers should invest in building and managing IC effective system to improve financial performance and reduce risk, the higher the level of IC firms the lower the financial risk for the firms.

Cluster two: intellectual capital management, knowledge creation, absorptive capacity, and core competencies to improve profits and achieve sustained competitive advantage.

Column 2 represents the list of the eight publications that constitute the second cluster, which is along the years (1990-2004), whereas the study of (Nahapiet & Ghoshal, 1998) is the most cited and influential document within this cluster, with 25 citations. In figure 10, we can notice the size of this publication's node in the network visualization, The larger the node, the more times the publication has been cited.

According to (Barney J. , 1991), the firm's sustained competitive advantage can be achieved through resources that firms possess that are valuable, rare, inimitable, and non-substitutable (VRIN resources). Barny also argues that dynamic capabilities, which refer to a firm's ability to adapt to changing market conditions and develop new resources and capabilities over time are crucial to achieving and maintaining a sustained competitive advantage. The main assumption of the study is that a firm's resources are the key determinants of its ability to achieve and sustain a competitive advantage, and the main finding is that VRIN resources and dynamic capabilities are critical to achieving and maintaining a sustained competitive advantage.

According to (Bontis, Dragonetti, Jacobsen, & Roos, 1999), classic accounting practices are insufficient for capturing the true value of intangible assets. The authors discussed various models and approaches that can be useful to evaluate and develop the management of intangible assets, such as the BSC, the Skandia Navigator, and the IC Navigator. Thus, while there is no one-size-fits-all solution for managing intangible assets, firms that take a proactive and strategic approach to managing their IC are more likely to achieve strategic and sustainable competitive advantages.

(Cohen & Levinthal, 1990) advocate that absorptive capacity is a core determinant of a firm's ability to learn and innovate, and firms must not only possess knowledge but also can recognize and assimilate external knowledge in order to innovate and create value. Absorptive capacity is a firm's ability to acquire, assimilate, transform, and exploit knowledge from external sources. Three key factors affect a firm's absorptive capacity: prior related knowledge, the firm's ability to recognize the value of new external information, and the firm's ability to integrate this new knowledge with its existing knowledge base. Therefore, firms with high absorptive capacity are more likely to introduce novel products and services, enter new markets, and ultimately achieve competitive advantages. This study has had a significant impact on the fields of strategic

management, innovation, and organizational learning, and has been cited extensively in subsequent research.

According to (Huselid, 1995), HRM is a strategic process that contributes to the overall firm's strategic success. The author advocated his study with empirical studies that support the positive contribution of these practices, thus firms that adopt these practices are more likely to achieve sustainable competitive advantages. While the challenge is measuring the impact of HRM practices on financial performance, investments in HRM practices can produce significant returns for firms. The paper has had a significant impact on the field of human resource management and has been cited extensively in subsequent research.

According to (Nahapiet & Ghoshal, 1998), social capital, which is the resources embedded in social networks, is a critical element of IC. This social capital can provide access to external knowledge, resources, and opportunities, and it can also enhance communication, collaboration, and trust within a firm. The authors also discussed the challenges of measuring social capital and its impact on competitive advantage but suggest that firms that can effectively develop and leverage their social capital are more likely to achieve superior performance. The paper has had a significant impact on the fields of organizational behaviour and strategic management and has been cited extensively in subsequent research.

(Nonaka, 1994) believes that knowledge is not just a static entity that can be transferred from one person to another, but rather a dynamic process of interaction, reflection, and synthesis that takes place within a social context. Nonaka in his study proposes his well-known model of knowledge creation that consists of two interrelated processes: the process of tacit-to-explicit knowledge conversion and the process of explicit-to-tacit knowledge conversion. Moreover, four modes of knowledge conversion: socialization, externalization, combination, and internalization, and describes how each mode contributes to the creation of new knowledge. Nonaka also discusses the importance of leadership and organizational culture in facilitating knowledge creation and proposes that firms that can effectively manage these processes are more likely to achieve sustainable competitive advantages. This study has had a wide significant impact on the fields of organizational behaviour, knowledge management, and innovation, and has been cited extensively in subsequent research.

The well-known study of (Prahalad & Hamel, 1990) advocates that firms should focus on developing their core competencies through a process of continuous learning, knowledge creation, and strategic alliances, which is vital to achieving a firm's sustained competitive advantage. There are three crucial criteria for core competencies: they provide access to a wide variety of markets, they make a significant contribution to customer benefits, and they are difficult for competitors to imitate. This study also has had a wide significant impact on the fields of strategic management and innovation and has been cited extensively in subsequent research.

According to (Youndt & Snell, 2004), effective human resource management practices can create and leverage IC, which in turn can improve a firm's competitive advantage and financial performance. The human resource configurations consist of four main dimensions: skills, motivation, organizational structure, and social systems, each of these dimensions can contribute to the development and exploitation of IC, and how IC can enhance a firm's financial performance. The authors also pointed out how the challenges of measuring intellectual capital can affect firms` performance. This publication has had a significant impact on the fields of

human resource management and strategic management and has been cited extensively in subsequent research.

Cluster three: Knowledge Management and Firm Performance: The Crucial Role of Intellectual Capital and Knowledge Sharing.

Column 3 represents the list of the eight publications that constitute the third cluster, which is over the years (1997-2016), whereas the study of (Bontis, Keow, & Richardson, 2000) is the most cited and influential document within this cluster, with 14 citations. In figure 10, we can notice the size of this publication's node in the network visualization, The larger the node, the more times the publication has been cited.

According to (Andreeva & Garanina, 2016), not all dimensions of IC are equally important for firms` performance, the empirical analysis of data from 203 Russian firms in this study concluded that human capital is the most significant dimension of IC for improving firms` performance, followed by structural and relational capital. While the relationship between IC and firms` performance is stronger for firms operating in high-tech industries, the IC is particularly crucial in these industries, which emerge managers to invest in developing and leveraging human capital to develop firm performance.

According to (Bontis, Keow, & Richardson, 2000), IC is a key engine and important predictor of business performance in the Malaysian context. The authors argue that the relationship between IC and business performance is stronger for firms operating in the service sector, indicating that IC is particularly important in service industries.

(Inkinen, 2015) highlights the different approaches and methodologies used to measure intellectual capital and firm performance. The author suggests that there is a positive relationship between intellectual capital and firm performance, with human capital being the most important dimension of IC for developing performance. However, this publication also identifies some inconsistencies and gaps in the literature, highlighting the need for more rigorous and comprehensive studies that account for the different dimensions of intellectual capital and the various contextual factors that may affect the relationship between IC and firm performance. This highlights the need for further research to deepen the understanding of the nature and mechanisms of this causal relationship.

(Reed, Lubatkin, & Srinivasan, 2006) proposes an IC-based view of the firm, which suggests that the IC possessed by a firm is a key determinant of its competitive advantage and strategic success. The authors argue that IC is a valuable and non-substitutable resource that can enable the firm to achieve strategic performance. Specifically, human capital and organizational capital are positively associated with a firm's competitive advantage, while social capital is positively associated with a firm's long-term success. While the relationship between IC and firm performance is stronger for firms in high-tech industries.

According to (Tovstiga & Tulugurova, 2007), effective IC management, can lead to improved performance in Russian firms. Whereas human and organizational capital is the most important dimensions of intellectual capital for improving firms` performance.

According to (Wang, Wang, & Liang, 2014), knowledge sharing is a vital mechanism for developing and leveraging a firm's IC, and effective IC management can upgrade a firm's performance. An empirical analysis of data from 206 Chinese firms concluded that knowledge sharing is positively associated with IC and firms ‘performance, whereas human capital and

structural capital are the most significant dimensions of IC for upgrading performance in these firms. The relationship between knowledge sharing, intellectual capital, and performance is stronger for firms in high-tech industries.

(Wiig, 1997) discusses the integration of IC and knowledge management in firms, which contribute to creating value and upgrading the firms `competitiveness. Wiig proposed a framework for integrating intellectual capital and knowledge management, which includes identifying and measuring IC and developing knowledge management that is aligned with the firm's strategy.

Cluster four: Strategic Analysis, BSC, and Intellectual Capital-based view to achieving sustained competitive advantage.

Column 4 represents the list of the eight publications that constitute the fourth cluster, which is along the years (1984-2010), whereas the study of (Teece, Pisano, & Shuen, 1997) is the most cited and influential document within this cluster, with 19 citations. In figure 10, we can notice the size of this publication's node in the network visualization, The larger the node, the more times the publication has been cited.

(Barney J. , 1991) argues that in order to achieve a sustained competitive advantage, a firm must possess valuable, rare, and inimitable resources, as well as an organizational structure that allows it to exploit these resources effectively. Barney suggested a framework for analyzing a firm's resources and capabilities, which includes identifying the resources that are valuable, rare, and inimitable, as well as the firm's ability to organize and coordinate these resources in a way that creates value. Sustained competitive advantage is difficult to achieve, but it is possible through the strategic management of these resources. Thus, firms must continuously evaluate their resources and capabilities in order to maintain their competitive advantage, and the ability to innovate and adapt to changing market conditions is essential for long-term success.

The study of (Bollen, Vergauwen, & Schnieders, 2005) aims to propose a conceptual framework that links a firm's IC and intellectual property to its financial performance, to understand how these intangible assets can be useful to create value for the firm. The authors advocate that intellectual capital and intellectual property are interrelated and that a firm's ability to create and protect these assets can contribute to achieving strategic performance. Thus, firms that invest in these intangible assets are more likely to achieve sustained competitive advantage. There is a need to adopt a strategic approach to manage firms` IC and intellectual property and to develop systems for measuring and evaluating the value of these assets.

According to (Hall, 1992), intangible resources play an important role in the strategic management of firms. Thus, the effective management of intangible resources is critical for achieving sustained competitive advantage. The author suggested a framework for the strategic analysis of intangible resources which includes identifying the firm's core competencies, assessing the value of these competencies, and developing strategies for building and protecting them in order to achieve strategic success. Furthermore, discussing several models for valuing intangible resources, including market-based approaches, income-based approaches, and cost-based approaches. The author believes that a combination of these models may be necessary to fully capture the value of intangible resources.

According to (Marr, Schiuma, & Neely, 2004), IC has a crucial role in creating value for firms and intellectual performance drivers (IPDs) are important for creating and capturing value through effective IC management. Thus, there is a need for a structured mapping IPDs and measuring their effect on value creation. Mapping IPDs consists of the main processes: identifying IC, identifying IPDs, mapping the relationship between IPDs and IC, and evaluating the impact of IPDs on value creation. These measures such as performance indicators and benchmarking against industry standards can help firms to identify areas for improvement and to develop strategies for enhancing their intellectual performance.

(Teece, Pisano, & Shuen, 1997) argue that dynamic capabilities are critical to achieving sustained competitive advantage, as they allow firms to continually adapt to changing market conditions and to develop new resources and capabilities that are difficult for competitors to imitate. This publication provides an approach to understanding dynamic capabilities that include three key components: sensing and shaping opportunities, seizing opportunities, and maintaining competitiveness. Knowledge management, organizational learning, and strategic alliances have a reactor and critical effect in developing dynamic capabilities. Thus, dynamic capabilities have a crucial role in strategic management which emerge in the effective management of these capabilities to achieve strategic success.

The well-known study of (Wernerfelt, 1984), provided a new approach to strategic management called the resource-based view of the firm. This approach suggests that a firm's unique resources and capabilities are the key source of sustained competitive advantage. The firm`s resources are the key determinant of its strategic position in the market. Resources must be valuable, rare, and difficult to imitate in order to create sustained competitive advantage. Capabilities, which are the firm's ability to use its resources to perform specific tasks, are also important in creating and sustaining competitive advantage. This emerged a need for a strategic approach to resource management and the importance of developing a firm's unique resources and capabilities. This study has had a significant impact on the fields of strategic management, HRM, and organizational learning, and has been cited extensively in subsequent research.

According to (Zeghal & Maaloul, 2010), IC is a critical driver of firm performance. The authors offered a framework for analyzing value added as an indicator of a firm's IC and its effect on the firm's financial performance. This includes identifying the components of value added that is associated with IC, measuring the value of these components, and assessing the relationship between IC and firm performance. An empirical study was cried out on a sample of Canadian firms that revealed that IC effects positively the firms ‘performance. The authors also highlighted the importance of a strategic approach to IC management, and the importance of measuring and analyzing the value of this IC for effective strategic performance.

Cluster five: investing in intellectual capital and learning capabilities to improve innovation performance.

Table 4 represents the list of the eight publications that constitute the fifth cluster, which is along the years (2004-2011), whereas the study of (Subramaniam & Youndt, 2005) is the most cited and influential document within this cluster, with 27 citations. In figure 10, we can notice the size of this publication's node in the network visualization, The larger the node, the more times the publication has been cited.

According to (Hsu & Fang, 2009), IC has a direct positive effect on new product development performance and the organizational learning capability mediates the relationship between IC

and new product development performance. Thus, the firm's ability to learn and adapt is a crucial reactor in translating IC into improved performance. The authors highlight the importance of effective IC management and developing organizational learning capability to achieve strategic success in product development.

The study of (Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011) aimed to trace the evolution of the IC concept, from its origins in accounting and finance to its current use in strategic management. While the resource-based and knowledge-based views of the firm are limited, an IC-based view is needed to fully capture the strategic value of knowledge assets. The authors provided a valuable contribution and sophisticated understanding of the strategic value of knowledge assets and advocated that this perspective can help firms achieve sustained competitive advantage and can provide a more complete picture of the strategic value of knowledge assets. Therefore, a comprehensive, integrated framework is needed to fully capture the strategic value of this asset.

According to (Subramaniam & Youndt, 2005), IC has a positive effect on innovative capabilities. Different types of innovative capabilities, such as incremental innovation or radical innovation, require different dimensions of IC. Whereas human capital is most strongly associated with radical innovation and social capital is most strongly associated with incremental innovation. Thus, it is very critical for firms and their innovative capabilities to develop strategies for effective management and investment in IC to achieve strategic performance.

(Youndt, Subramaniam, & Snell, 2004) argue that investing in firms' IC can yield different types of returns, such as operational performance, financial performance, and market performance. The authors analyzed these investments and returns, which they call the IC profile (ICP), which allows firms to identify their strengths and weaknesses in terms of different dimensions of IC and their related returns. Whereas investments in human capital are more associated with operational and financial performance, while investments in structural capital are associated with market performance. Therefore, the ICP framework provides a valuable tool for analyzing the relationship between investments in IC and firm performance by determining their strengths and weaknesses in terms of each dimension of IC, to develop strategies for managing IC aligned with the strategic goals.

VII. Final thoughts and future agenda

Based on the co-citation analysis of references and the yielded clusters, we aim under this title of final thoughts and future agenda to determine research gaps and opportunities to conduct future research model that advances knowledge in the field of IC and strategic performance focusing on one or more of the research areas that are not well-covered in the existing literature.

There are several gaps in the research on IC and strategic performance according to the content analysis we have run:

Despite the growing interest in IC, there is still no unified accepted definition or measurement approach for IC. This has led to inconsistency in the way IC is conceptualized and measured in research, making it difficult to compare findings across studies.

Limited empirical research on the relationship between IC and strategic performance: While there is a growing body of literature on IC, there is still limited empirical research on the relationship between IC and "strategic performance" and the mechanisms of this causal

relationship. There is a need for more research on the role of IC in other industries, such as services and healthcare, and in different contexts, such as emerging economies and non-profit firms.

Lack of integration between IC and strategic management models and concepts. There is a need for more research that integrates IC with these other concepts to develop a more comprehensive understanding of strategic performance and the mechanisms of how IC affects strategic performance and how managers can effectively manage and leverage their IC to develop strategic performance. There is a need for more research that provides practical guidance.

Most studies on IC and strategic performance are cross-sectional (observational and explore a sample of data in a specific time), which limits our ability to establish conclusions about the causal relationships between IC and strategic performance. Longitudinal studies that track changes in IC and strategic performance over time are needed to provide a better understanding of the dynamic relationship between IC and strategic performance.

While there is a growing body of research on the internal factors that affect IC and strategic performance, there is still limited research on the impact of dynamic external factors, such as industry structure, competition, and regulatory environment. Building a model to understand the impact of these dynamic external factors on IC and strategic performance is challenging and crucial for developing effective IC management strategies and strategic success.

Although organizational culture can play an important role in shaping the way firms manage IC. There is still limited research on the effect of culture on IC and strategic performance. More research is needed to understand how organizational culture can affect IC management and strategic performance.

Most studies on IC and firm performance have focused on financial measures, such as profitability and return on investment. Thus, there is a need for more research on the effect of IC on non-financial measures of performance, such as customer satisfaction, employee engagement, and social responsibility. This will provide a more comprehensive understanding of the effect of IC on strategic performance.

The lack of a widely accepted IC measurement model is a significant gap in the research on IC and strategic performance. We believe that the focus must be on the complexity and multifaceted concept of IC in terms of its dimensions that encompass a wide range of dimensions not only the known three HC, OC, and RC. organizational context and the industry in which the firm operates. Addressing the gap in IC measurement requires a multi-faceted approach that involves developing a comprehensive IC framework that is context-specific and incorporates a range of qualitative and quantitative measures, strategic alignment with the existing measurement approaches, and strategic goals. Furthermore, the collaboration between scholars, practitioners, and policymakers is also crucial to developing a standardized and widely accepted IC measurement framework that can be a strategic performance driver.

Conclusion

In this chapter, of a systematic literature review of the effect of intellectual capital on strategic performance, a bibliometric analysis was carried out on publications yielded from the Scopus database, in the period between 2003-2023. We aimed to explore the effectiveness of IC on firms` strategic performance based on previous studies, by establishing a historical connection bridge with these studies to build a research model for future research by focusing on the gaps and the contradictions. After carrying out the bibliographic analysis of the publications that yielded our research criteria, we have deduced the positive effect of IC on strategic performance, with a strong emphasis on the importance of human capital and organizational capital.

Our review has a critical implication for practice, as it suggests that firms can upgrade their strategic performance by investing in the development and management of their IC. Specifically, focusing on human capital, which can be considered the hidden iceberg of a firm's IC. Thus, knowledge management practices, organizational learning as well as strategic analysis are crucial for assisting firms to achieve and drive innovation, competitiveness, and strategic success.

The results have been discussed and analyzed: the most influenced and most cited references, journals with the highest number of publications, the most productive countries, distribution of the most cited publications per year, collaborative studies of countries, bibliographic match, and keyword analysis.

While our systematic review provides valuable insights and value-added to the literature related to IC and strategic performance as well as strategic management. We acknowledge that there are some limitations to our study. These include potential publication bias and variation in the methods used to measure intellectual capital and strategic performance across studies. Future research should address these limitations and build on our findings to develop more refined models of the relationship between intellectual capital and strategic performance.

In conclusion, our systematic review focuses on the importance of IC in driving strategic performance across a range of industries and contexts. Through effective management and investment in IC, firms can boost their competitiveness and strategic success. This review findings can assist to develop more effective strategies for managing IC and upgrading firms` strategic performance.

Chapter II: Theoretical framework of Strategic Performance

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Introduction

In today's complex and dynamic business environment, firms face intense pressure to achieve their strategic goals and sustain their competitiveness. While strategic performance reflects the strategic direction of the firms as open systems in their external environment. This chapter aims to construct a theoretical framework of strategic performance and provide a comprehensive analysis of the process underlying strategic performance and identify potential areas for further research and practice.

In this chapter, we aim to address the strategic performance literature background, key dimensions, and the most influential measuring and reporting approaches. Moreover, the strategic performance management process, and how can strategic performance be aligned with the firm's strategy and business model.

I. Definition of strategic performance

Strategic performance is not that difficult to understand such a concept. We just need to define what we mean by the term “organizational Performance” from a strategic perspective.

Therefore, if we consider a firm as a system, composed of different elements, processing together to achieve a goal, and considering the fact that the goal of any system is to survive and thrive. Then organizational performance is nothing else than the sum of all actions taken by the employees and their leaders to reach these goals. Thus, like any system, the firm is also the inter-relations of process, the synergy created between all assets within firms. In this sight, performance is the output, the result of group behavior, and it can be defined by its measures indicators.

According to Bourguignon (1995) (Rhita & Latifa, 2020) there are three grouped meanings to define performance in management sciences: The first meaning of performance is synonymous with success: this meaning is subjective and depends on the observer's perception of success. The second meaning of performance is synonymous with the result: this meaning is related to the objective result of an action and, therefore, the concept of value. The third meaning of performance is synonymous with action: this meaning refers to the implementation of an action or process (the application of a skill constitutes a possible performance).

While the concept of firm performance has attracted attention and was studied as a dependent variable for several research publications in several management literature, there is still no unified definition of this concept. In the following, we are addressing some of the definitions of firm performance. Firm performance refers to the financial and non-financial indicators that reflect the level to which the defined goals have been met (Alaaraj, Mohamed, & Bustamam, 2016). It is a complex interrelationship or the integration between effectiveness, efficiency, quality, productivity, innovation, and profitability (Herlina, Tukiran, & Anwar, 2021). Organizational performance is the firm`s ability to achieve its goals including strong financial outcomes and high-quality products, by implementing effective strategies (Wahaba, Rahmat, Yusof, & Mohamed, 2016). In other words, organizational performance is a description of the extent or the level to which those desired firms` goals are achieved (Silitonga & Widodo, 2017). It can be defined as a measurable outcome indicating the level of achievement of a firm's goals (Ahmad & Mushraf, 2011). The performance is future-oriented or forward-looking and tailored

to the unique characteristics of each firm or individual. It is founded on a causal model that connects components and products (Elena-Iuliana & Maria, 2016).

To put it another way, performance in a business can be defined as all the factors that contribute to accomplishing strategic objectives.

Strategic performance depends on the firm's performance compared to its competitors in the market (Kenny, 2005). It also refers to the ability to establish the firm's strategies and achieve its strategic goals effectively (Bashae, Singh, & Sherine, 2016).
To ensure its sustainability, firms must stand out from their competitors and must, to do so, set appropriate strategic objectives, such as improving the quality of their products, adopting original marketing, or adopting more efficient manufacturing technology. For senior management, the major concern at this stage is to communicate its strategic objectives to staff and ensure their transformation into operational objectives to achieve strategic performance.

Strategic performance can also be defined as maintaining a distance from competitors, which can be maintained by strong motivation (incentive and reward system) of all members of the firm and a focus on sustainable development. Strategic performance basically is associated with (Ouattara, 2023):

- The ability to question the acquired strategic advantages, which means the flexibility of the acquired strategic advantages, with a willingness to reconsider, review and modify them as required by the organizational environment.
- Determine a plan and system with strategic orientation.
- The firm's ability to develop a sustainable competitive advantage.
- The firm`s ability to find sources of value that create margins.
- Excellence at all levels of the firm.

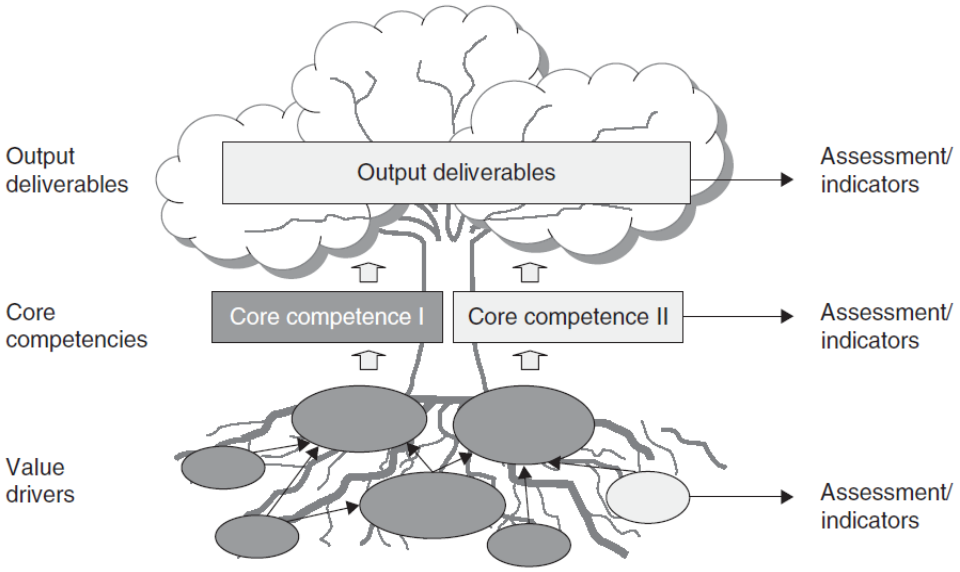
According to Philippe Lorrino (1997), performance in a business is not only about reducing costs or increasing value, but rather about improving the cost-value balance. The initial step in converting this concept into tangible, measurable elements is to outline how the business generates and will continue to generate value. This involves defining the concept of "value" with an eye toward future developments, which in turn informs the creation of a strategy. Thus, the first step is to convert the cost-value balance into strategic objectives (Elena-Iuliana & Maria, 2016).

There is a difference between operational performance which focuses on costs, quality, flexibility, lead times, order processing, and on-time delivery. And strategic performance which focuses on long-term issues like competitiveness, product development, and new markets. Briefly, the strategic performance focuses on added value through creating new opportunities in terms of developing the products and creating new markets. Also, it is worth mentioning that few studies have investigated strategic performance and how to measure it (Gelderman, Semeijn, & Mertschuweit, 2016).
Overall, strategic performance refers to a firm's ability to achieve its long-term strategic objectives using a combination of internal and external resources and capabilities. This may include the firm's ability to innovate, develop new products, penetrate new markets, improve its competitiveness, and increase long-term profitability. In different words, strategic performance is the assessment of a firm's effectiveness in executing its strategic goals and

excellent business model. Strategic performance is a critical element of strategic planning and is essential for ensuring the long-term viability of a business in a constantly changing business environment. firms that are successful in maintaining high strategic performance are better positioned to remain competitive and continue to grow in the future. Furthermore, strategic performance is often measured using key performance indicators such as market share, sales growth, profitability, return on investment (ROI), and customer satisfaction. To improve strategic performance, firms must focus also on identifying their intangible indicators such as core competencies, human capital, capabilities, and unique competitive advantages.

According to (Marr, 2006) an indicator indicates a certain level of performance, but it does not claim to measure it completely. Therefore, when it comes to Strategic Performance Management, we should focus on performance assessment rather than performance measurement, and we use performance indicators instead of performance measures. A value creation map helps to develop performance indicators for each element on the map to assess performance more effectively (see Figure 11).

Figure 11: Assessment and indicators for strategic elements



Source: (Marr, 2006)

By developing performance indicators for each element on the value creation map, firms can assess their performance more effectively and identify areas for improvement. Performance indicators can be used to track progress, measure success, and identify potential risks or challenges. This information can be used to make data-driven decisions and to optimize business operations to maximize value creation. Thus, the value creation map is a powerful tool for firms to improve their performance and achieve their strategic goals.

We can observe that core competencies are included in the value creation map as a major element as they are a key driver of value creation for firms. Therefore, the value creation map includes core competencies as a major element to highlight their importance in creating value for firms and to guide the development of performance indicators that can help measure the effectiveness of the firm's efforts to determine and use its core competencies. By monitoring and improving its core competencies, firms can enhance their competitive position and create more value for their stakeholders. Furthermore, by differentiating between two types of core

competencies and performance indicators, firms can more effectively measure and assess their performance across different areas of their business. This can help to identify areas of strength and weakness, prioritize investments and resources, and optimize the allocation of resources to maximize value creation.

II. The key indicators of strategic performance (KPIs)

The key indicators of strategic performance (KPIs) can vary depending on the firm's strategic goals, which should be aligned with the firm's overall strategy and provide meaningful insight into the firm's success.

Key performance indicators (KPIs) were first described in the "BusinessWeek" article (1976), which outlined three important concepts: selecting key indicators to measure organizational well-being, reporting exceptions where performance differs from expectations, and visually displaying that information. KPIs are metrics that measure performance based on stakeholder needs and goals and should be regularly updated and complemented by predetermined performance targets. They can be nonfinancial and measured in two ways, measuring and assessing is an ongoing process (Sanchez & Robert, 2010).

According to the BSC perspective the following table addresses some of the strategic performance indicators, which can be used to measure it.

Table 4: Strategic Performance KPIs

BSC perspectives	KPIs	Tactical goal	Strategic goal
Financial	MDI: Machine delivery index, is a publicly known number derived from the product price and material cost, released annually.	To improve productivity to introduce new products and achieve growth	To protect shareholder interest leading to growth and profits
	MDI sigma: measures the consistency of product dispatches over a month and its significance lies in maintaining a steady cash flow.		
	TTM: Time to market measures the duration from product conception to introduction to the customer and indicates a company's ability to deliver on time and stay competitive, making it essential for business growth and turnover.		
	FTR rating: First time right refers to the measure of rejection across all stages of the value chain.	To improve profitability while maintaining market sustainability and ensuring affordable costs.	
	Product Cost Index: Product cost is a crucial metric that determines the contribution value of each product model and directly affects profitability.		
	Warranty Cost Index: this is a metric that measures both product performance and the expenses associated with providing warranty service to customers.		
	OT Index: Overtime Index is a direct measure of the manufacturing costs incurred due to overtime labor.		
	Facility management: refers to the management and maintenance of the physical assets, including tools, equipment, and support systems, required for the smooth operation of a manufacturing facility.		
	MTBF: Mean time between failures is a metric that measures product performance and reliability, which ultimately impacts customer loyalty and retention.	To enhance customer satisfaction,	To meet and exceed customer

Customer	MTBF sigma: It demonstrates consistent product performance across all customer locations.	improve customer retention, and foster loyalty	expectations leading to customer delight and integrate co-maker care
	SPP rating: Site plug-and-play measures how easy or difficult it is to install a product at a customer's location.		
	On-time delivery: This metric measures the accuracy of delivery commitments compared to the actual delivery. It is crucial for maintaining a positive image and reputation,	To improve the image and reputation of a business by offering products, technology, and services that are aligned with customer preferences.	
	On-time trial: Conducting customer trials to showcase the capability of a machine before purchase is crucial for maintaining a positive image.		
	Customer training: This metric measures the effectiveness of training provided to customers before they start using a machine, and is rated by customers on various aspects of the training imparted by the trainer, who is typically an employee of the company.		
	Warranty Material Delivery Index: this is a system that tracks material delivery delays during warranty in order to minimize customer site downtime.		
	Supply chain Rating: this is a measure of how well the supply chain can provide timely and high-quality materials to the manufacturing line.	Enhance the quality of supply	
	On-time Payment: this is a measure of the delay in payment to suppliers, which is a crucial aspect of customer care.		
Internal Business Processes	Implementation of systems and processes: can measure the effectiveness of new processes, such as:	To improve lean business processes in order to deliver more value to the customer.	To implement continuous improvements leading to operational excellence
	Six Sigma: is a problem-solving methodology used to measure the effectiveness of new processes.		
	5S: The 5S methodology is designed to improve workplace efficiency, safety, and quality by creating a structured and organized work environment (Sort, Set in Order, Shine, Standardize, and Sustain).		
	EJIT: is a methodology used to ensure timely delivery of products at a predetermined manufacturing cost.		
	EJIT Inventory: this is a measure of the inventory of raw materials, work-in-progress, and finished goods under an Early Just-in-Time (EJIT) system.	To improve the utilization of working capital, which in turn can lead to cost savings in existing processes	
	Current ratio: is a widely used measure of a firm's liquidity and ability to pay off its short-term liabilities with its current assets.		
Learning & Growth	Competency matrix: measures the gap between the competencies that an organization currently possesses and those that will be required in the future.	Enhance competency matrix to enforce employee capabilities	To create employee participation leading to employee capability
	Training hours: this is a measure of the total number of hours spent on training employees in various skill sets, soft skills, and other areas.	To motivate, empower, and align with the vision	

Source: (Anil, Vijay, Deepak, & P.C, 2017)

III. Strategic performance: Measuring and reporting approaches.

Over the recent few years, there has been a growing emphasis on performance measurement as a crucial tool for effectively implementing a strategy. Strategic performance measures are necessary to analyze and implement long-term strategic concepts in a firm. There are three main reasons for measuring company performance: verifying strategy, influencing employee behaviors, and managing external communication and performance. The most common reasons for measuring and managing company performance are strategic planning, control, motivation, and reward, with communication, daily decision-making, and strategy verification also being important. In contrast, stakeholder relations and legal obligations are less significant factors. According to Marr's research in 2003, the most critical reasons for performance measurement and management are firms' management needs, strategic planning, daily decision-making, and strategy verification, while communication, motivation, remuneration, stakeholder relations, and legal obligations are less significant (Striteska & Jelinkova, 2015).

Performance measurement is the process of recording and assessing the progress of achievement of activities and the results of the processes toward achieving firms` goals (Silitonga & Widodo, 2017). It refers to a system or the matrix of quantifying the efficiency and effectiveness of actions. The fact of the manner is that this process must be able to manage the determinants and results of the operations, systems, and results, identify the causality effect, and develop a predictive model for the overall strategic management system (Lima, Costa, & Angelis, 2009).

Several performance measurement frameworks were developed in the early 1990s to overcome the limitations of using only financial measures. These frameworks prioritize intangible resources, such as key customers, internal processes, and learning. Also, the most common and used frameworks are the Intangible Assets Monitor and Skandia Navigator were developed with a focus on intellectual capital, while the Balanced Scorecard is a more strategic focus framework that gained widespread use (Tayles, Pike, & Sofian, 2007).

Performance Measurement Systems (PMSs) are used by firms to collect and present data on their performance, while Strategic Performance Measurement Systems (SPMSs) are a type of PMS that integrate a firm's strategic and operational goals. Established models for designing SPMSs include tableaux-de-bord, SMART Performance Pyramid Systems, Balanced Scorecards, and Performance Prisms. Using an SPMS can help firms improve alignment, enhance decision-making, increase accountability, improve communication, and enable continuous improvement (Gimbert, Bisbe, & Mendoza, 2010). According to (Pollanen, Abdel-Maksoud, Elbanna, & Mahama, 2017), strategic performance measures (SPM) are vital for turning strategy into quantifiable objectives, and when designed and communicated effectively, they can aid in implementing strategy, aligning management decisions with strategic goals, and improving organizational performance. Previous studies have primarily focused on the implementation of SPMs rather than their strategic use and longer-term performance effects, assuming that once SPMs are deployed, they will function as intended to benefit the firm. Furthermore, previous studies have not explored the relationships between SPM deployment and strategizing firms 'activities. SPM systems are defined by four main attributes: integration of long-term strategy and operational goals, multi-perspective indicators, cause-effect linkages, and a sequence of goals-targets-action plans. Such systems can help organizations set and

achieve strategic objectives, align individual behaviours and attitudes with strategic objectives, and improve overall organizational performance.

The table 6 summarizes the main differences between strategy-oriented Performance evaluation and event-oriented Performance evaluation.

Table 5: Comparison of traditional and modern performance measurement systems

Performance evaluation (Strategy-oriented)	Performance evaluation of traditional systems (event-oriented)
• Emphasis on process evaluation • Emphasis on evaluating different aspects of the firm • Focused on performance and strategy alignment • Focused on retrospective and prospective indicators • Emphasis on improvement • Emphasis on trust and cooperation • Focused on developing and promoting creativity and innovation • Focused on cause-and-effect relationships and the etymology of each problem • Processual (focused on outcomes and the processes of achieving them) • Emphasis on understanding the goals and strategies to assess performance. • Evaluation as a continuous process	• Emphasis on individual performance • Emphasis on single events • Focused on retrospective indicators • Emphasis on control • Mistrust of people • Focused on decreasing or eliminating creativity and innovation • Attention to problems • Focused on outcomes (results-oriented) • Focused exclusively on performance evaluation • Evaluation as discrete and periodic

Source: (Moftian, et al., 2021)

III.I. The Balanced Scorecard

The Balanced Scorecard was developed by Kaplan and Norton (1996) as a model to translate the firm's strategic vision into operational actions and a cohesive set of performance measures. This framework consists of four perspectives of organizational performance, which include customer, financial, internal processes, and learning and growth (Ivanov & Avasilcăi, 2014). According to (Kaplan & Norton, 1996) the performance measures in this framework balance between external measures of shareholders and customers, and internal measures that focus on critical business processes, innovation, and learning and growth. This balance is achieved by considering both outcome measures that reflect past results and measures that contribute to future performance. The scorecard itself is also balanced, incorporating both objectives, and easily quantifiable outcome measures. quantifiable measures with subjective, evaluative measures. This balance allows for a more complete understanding of organizational performance.

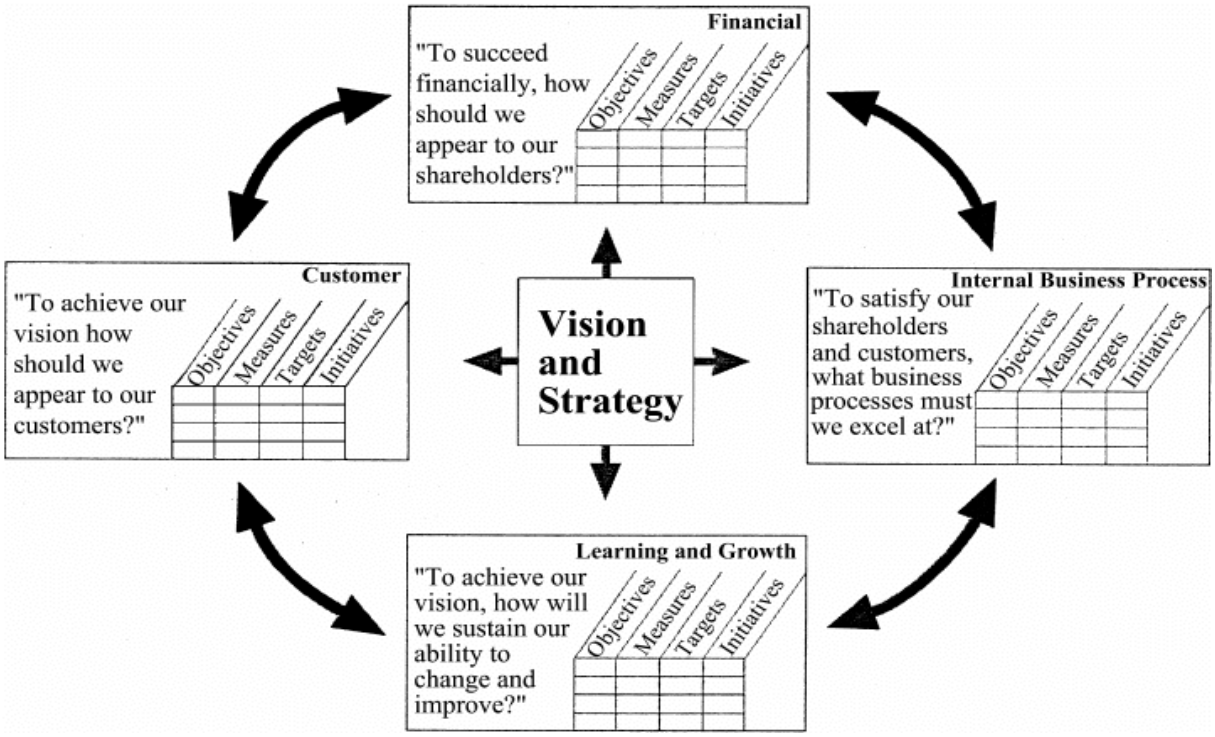
The Balanced Scorecard is among the strategic performance management systems, which would give information to assist managers in the evaluation and monitoring process of the firm's

strategies (Cheng, Humphreys, & Zhang, 2018). According to (Bose & Thomas, 2007)The Balanced Scorecard (BSC) involves translating a firm's strategic vision into clear objectives based on specific perspectives. Some firms have realized the value of the BSC as a crucial element in a new strategic management system capable of achieving their goals. The establishment of this system involves four processes:

a) Translating the vision: This involves converting the firm's strategic vision into specific objectives that can guide local-level action and build consensus among managers.
b) Communication and linking: This process allows managers to communicate the strategy up and down the firm and connect it with the unit and individual goals.
c) Business planning: This process involves integrating the firm's business and financial plans to ensure alignment with the overall strategy.
d) Feedback and learning: This process provides the firm with the capacity for strategic learning by collecting feedback, testing strategy hypotheses, and making necessary adjustments.

Figure 12 addresses the Balanced Scorecard framework to translate a firm`s strategy into actions.

Figure 12: The Balanced Scorecard Provides Framework



Source: (Kaplan & Norton, 1996)

The Balanced Scorecard's four perspectives facilitate a balance between short and long-term goals, desired outcomes, performance drivers, and objective and subjective measures. Although the presence of numerous measures may appear complex, well-designed scorecards serve a unified purpose, as all measures aim to accomplish an integrated strategy (Kaplan & Norton, 1996). The four perspectives of the Balanced Scorecard are:

Financial Perspective: The Balanced Scorecard (BSC) includes financial performance measures to assess the economic outcomes of a firm's strategy, implementation, and execution.

The financial perspective typically focuses on profitability, measured by indicators such as operating income, return-on-capital employed, or economic value-added, but can also include objectives like rapid sales growth or generating cash flow (Kaplan & Norton, 1996). Financial measures are an important aspect of the Balanced Scorecard framework because they indicate whether a firm's strategy is contributing to bottom-line improvement. Financial measures include retrospective measures that reflect past managerial actions and provide information on how well a firm is performing concerning its profitability targets. However, exclusive reliance on financial measures can cause firms to sub-optimize, so it's important to consider other perspectives as well. From a financial perspective, return on equity, return on assets, cash flow, earnings per share, sales, earnings before income tax (EBIT), sales/ total assets, return on capital employed, fixed costs, labor costs, scrap, rework, revenue growth, profit margins, cash flow, and net operating income are performance measures generally agreed on. Overall, financial measures are important, but they should not be the only focus when evaluating a firm's performance (Thi, Vu, & Hoang, 2018).

Customer Perspective: According to (Ivanov & Avasilcăi, 2014), while all four perspectives of the Balanced Scorecard are important, customers are the primary reason for any firm's existence. Employees in many firms may not fully understand what customers need and how their activities impact them. The main concerns of customers can be categorized into four areas: time, quality, performance, and service.

The customer perspective in the Balanced Scorecard framework involves identifying the customer and market segments and measuring the business unit's performance in those segments. Core outcome measures include customer satisfaction, customer retention, new customer acquisition, customer profitability, and market and account share in targeted segments. the specific factors that drive the core outcomes for customers in a particular market segment are essential for customers to either switch to or stay with their current suppliers. By focusing on these drivers, business unit managers can create a strategy that is customer-focused and market-based and will ultimately lead to higher financial returns. The customer perspective of the Balanced Scorecard provides a framework for businesses to develop and implement such customer-focused strategies (Thi, Vu, & Hoang, 2018).

(Kaplan & Norton, 1996) proposed a core measurement set of customer outcomes that applies to all types of firms. This core measurement set includes specific measures of: Market share, Customer retention, Customer acquisition, Customer satisfaction, and Customer profitability. In order to achieve the greatest impact, it is needed to customize the measurements according to the particular customer segments that the business unit anticipates will contribute the most to its growth and profitability.

Market share: This reflects the percentage of a specific market's business (measured by the number of customers, amount of money spent, or volume of units sold) that is assigned to a particular business unit’s sale.

Customer Acquisition: Measures, either in absolute or relative terms, the speed at which a business unit acquires or secures new customers or business.

Customer Retention: Tracks, the speed at which a business unit retains or sustains continuous connections with its customers, measured either absolutely or relatively.

Customer Satisfaction: Assesses how satisfied customers are with specific performance standards offered within the value proposition.

Customer Profitability: Calculates the net profit generated by a customer or group of customers, while accounting for the distinct expenses needed to serve those customers.

Figure 13 Addresses these core measures as a set of a causal chain of relationships.

Figure 13: Core measures group

Source: (Kaplan & Norton, 1996)

Internal-Business-Process Perspective: This perspective discusses the significance of internal business process measures in evaluating a firm's performance in meeting its customer and financial goals. These measures provide insight into what the firm must do internally to meet its customers' expectations and maintain a leadership position in the market. The identification and measurement of core competencies and critical technologies are crucial in this regard and should be carefully designed based on the firm's unique vision, mission, and strategy. Ultimately, a decision is made based on this assessment (Thi, Vu, & Hoang, 2018). In different words, this perspective focuses on the importance of a firm's activities and processes in providing value to its customers. To achieve the desired results from process improvements, it is essential to assess the firm's performance and identify any issues that may affect the quality of its products (Ivanov & Avasilcăi, 2014).

According to (Kaplan & Norton, 1996), identifying critical processes at which they must excel, that are crucial for achieving the objectives of both shareholders and targeted customer segments. While classic performance measurement systems focus on monitoring and improving cost, quality, and time-based measures of existing business processes, the Balanced Scorecard approach takes a different approach, it enables the demands for internal process performance to be derived from the expectations of specific external constituencies, rather than just focusing on improving existing processes. This approach provides a more holistic and customer-centric view of the firm's performance.

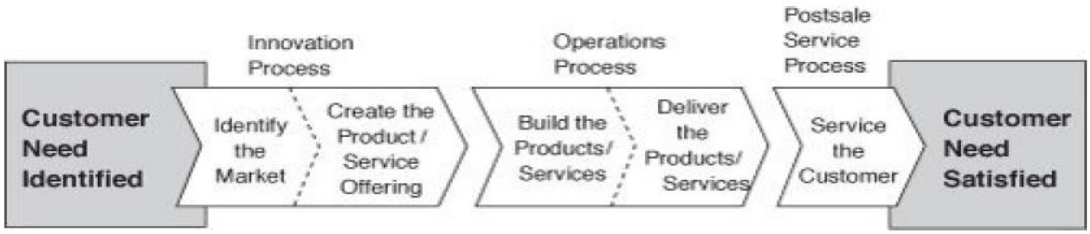
Figure 14 displays a generic value-chain model which can be tailored by companies to suit their internal-business-process perspective. This model consists of three main business processes: Innovation, Operations, and Post-sale service.

Innovation process, where a business unit identifies the unmet requirements of customers and develops new products or services to fulfil those needs.

The operations process, which is the second step in the value chain, involves producing and delivering existing products or services to customers. Firms typically prioritize measuring and improving operational efficiency and cost reduction.

Post-sale returns include activities such as guarantee and repair services, handling defects or faults and returns, and managing payments.

Figure 14: The Internal-Business-Process Perspective—The Generic Value-Chain Model



Source: (Kaplan & Norton, 1996)

Learning and Growth Perspective: This perspective is a crucial aspect of the BSC framework, which focuses on identifying the infrastructure needed for a firm's strategic growth and improvement. Organizational learning and growth are derived from three primary sources: people, systems, and procedures. By examining the financial, customer, and internal business process objectives of the BSC, firms can identify gaps between existing capabilities and what is required for exceptional performance. To bridge these gaps, firms must invest in re-skilling employees, enhancing information technology and systems, and aligning organizational procedures and routines. The Learning and Growth perspective is also crucial for creating a culture of continuous learning, innovation, and improvement, which is necessary for a firm's strategic success (Thi, Vu, & Hoang, 2018).

The Learning and Growth Perspectives have been categorized by (Kaplan & Norton, 1996) into three main categories:

- **Employees Capabilities:** The authors argue that building a workforce with the necessary skills, knowledge, and motivation is critical to a firm's ability to learn and adapt. Thus, firms should invest in training and development programs for re-skilling in order to help employees to align with the firm's strategic direction. Furthermore, firms should align employee goals and motivations with those of the firm to create a sense of ownership and accountability that drives performance. By building a capable and adaptable workforce, organizations can respond to changes in the business environment and achieve their strategic objectives.
- **Information Systems Capabilities:** While employee motivation and skills are important for achieving stretch targets for customer and internal-business-process objectives, they may not be enough in today's competitive environment. To be effective, employees also need excellent information about customers, internal processes, and the financial consequences of their decisions. Front-line employees require accurate and timely information about each customer's total relationship with the firm, including profitability

estimates and customer segments. This information can help employees determine how much effort should be devoted to satisfying existing and emerging customer needs, thereby contributing to the firm's success.

- **Motivation, empowerment, and alignment;** are critical factors that enable employees to contribute to organizational success. Even if employees are skilled and have access to information, they may not act in the best interests of the organization if they are not motivated or empowered to do so. Therefore, the third enabler for the learning and growth objectives is to create an organizational climate that fosters employee motivation and initiative. This involves providing a supportive work environment that encourages employees to take ownership of their work, make decisions, and take action to achieve organizational goals. By aligning employee goals with those of the organization, companies can create a sense of purpose and commitment that drives performance and contributes to long-term success.

III.II. Performance Dashboards

For a significant amount of time, dashboards have been utilized in the vehicles sector, but it's only recently that firms have started utilizing them. Managers are progressively relying on dashboards to help run their firms. Performance dashboards transform strategy into customized objectives, metrics, initiatives, and tasks for different individuals and groups within the firm. These dashboards offer information that can aid in decision-making and enhance the optimization of business processes (Bugwandeen & Ungerer, 2019). Performance dashboards come in three types: operational, tactical, and strategic, each with a unique emphasis on the three layers and applications mentioned earlier: 1. Operational dashboards are primarily used by front-line workers to manage and control operational processes. These dashboards provide detailed and frequently refreshed data and focus mainly on monitoring. 2. Tactical dashboards are used by executives to review and benchmark departmental processes and projects, while managers use them to monitor and optimize processes. These dashboards tend to focus more on analysis than monitoring or management. 3. Strategic dashboards are implemented using the balanced scorecard approach and are primarily used by executives to monitor the execution of strategic objectives. These dashboards tend to focus more on management than monitoring or analysis and are used to communicate strategy and review performance at monthly strategy or operational review meetings (Eckerson, 2011).

There is confusion between “Dashboards” and “scorecards”, but they serve different purposes. Dashboards measure operational performance against targets using real-time data, while scorecards track progress toward strategic objectives by comparing performance against targets. Both convey critical information, but dashboards focus on operational processes like project management, while scorecards track progress toward tactical goals. Dashboards are similar to automobile dashboards in that they allow operational specialists and supervisors to monitor events generated by key business processes. However, unlike automobile dashboards, business dashboards typically display events at the "right time" as needed rather than in real time. The frequency of updates depends on the volatility and criticality of the business process, with most elements updated on an intraday basis with latency measured in minutes or hours. Dashboards typically use visual representations like charts or graphs to display performance, including gauges and meters. However, the dynamic updates of dashboard graphs can be distracting to

those monitoring operational processes, who may prefer to view the data as numbers or text with accompanying visual graphs (Kerzner, 2017).

Briefly, the purpose of the Dashboard is to assist employees in guiding the firm by identifying critical success factors, particularly those that can be quantified as physical variables. It visually presents performance metrics, enabling real-time monitoring of progress toward strategic goals.

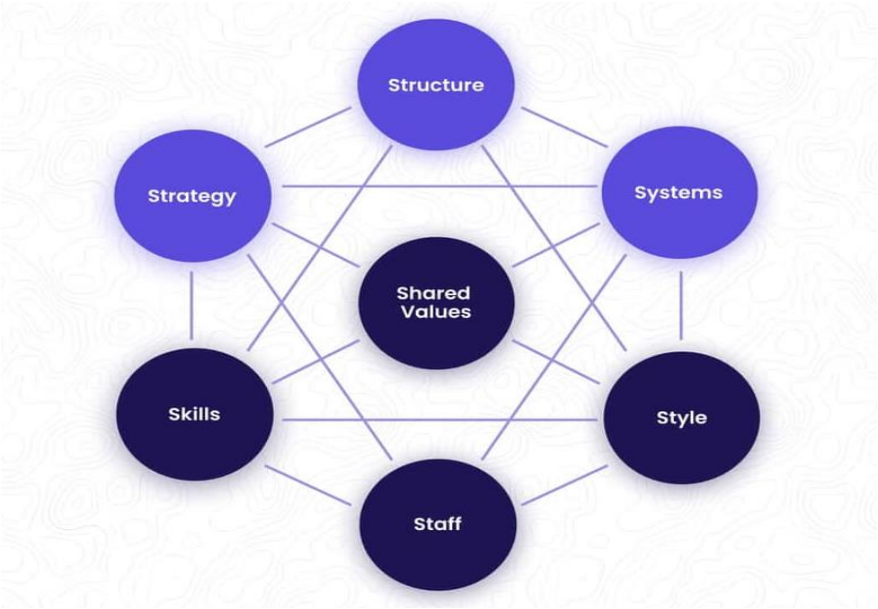
III.III. McKinsey 7S Model as strategic performance measurement approach

Regarding the wide use of the 7S model in several research contexts and its capability to provide a holistic comprehensive view of the firm, we believe that the 7S model can be used as a strategic approach to measuring a firm's strategic performance through an adequate and comprehensive view on firm` variable dimensions and their associated factors.

The McKinsey 7S model is a widely recognized framework that evaluates a firm's ability to achieve its desired goals, focusing on its internal factors. Typically utilized as a means of evaluating and tracking changes in a firm's internal situation, this model is highly regarded in the business world (Naipinit, Kojchavivong, Kowittayakorn, & Sakolnakorn, 2014). Tom Peters and Robert Waterman, both consultants at McKinsey & Company in the early 1980s, developed the McKinsey 7S Model. The model was designed to be a simple and memorable tool for business analysis (Hanafizadeh & Ravasan, 2011). According to (Shaqrah, 2018) the McKinsey model is a strategic framework that can be utilized to enhance performance and organizational structure. It helps identify the critical and most influential factors that drive a firm's strategic implementation and enables decision-making on how best to restructure the firm, whether through process re-engineering or innovative schemes.

The McKinsey 7S model is composed of seven interrelated factors: strategy, structure, systems, styles, skill, staff, and shared values (Naipinit, Kojchavivong, Kowittayakorn, & Sakolnakorn, 2014). The McKinsey 7S model does not include the external environment, but the authors do recognize that other variables exist, and they have chosen to focus only on the most essential ones in the model (Hanafizadeh & Ravasan, 2011).
The purpose of the 7S model is to summarize the primary factors within a firm that aid in accomplishing its strategic objectives, especially regarding changes. The initial three components are commonly classified as "hard," as they are more tangible and quantifiable, making them simpler for management to control. On the other hand, the remaining elements are considered "soft" because they are more intangible and difficult to manage and control directly. Shaping these elements requires leadership rather than management. The model's strong point lies in the importance it gives to aligning various factors that influence firms' performance. Basically, the framework argues that a successful strategy is more than individual components such as strategy development or organizational change. Instead, it's the interplay between strategy, structure, and systems, along with skills, style, staff, and overarching goals that contribute to effective strategy implementation (Cox, Pinfield, & Rutter, 2018). In order to achieve long-term benefits, these variables need to be modified to become more harmonious as a system. Successful firms achieve alignment between all seven elements (Hanafizadeh & Ravasan, 2011).

Figure 15: McKinsey 7S Model



Source: (Cox, Pinfield, & Rutter, 2018)

To measure strategic performance using the McKinsey 7S model, it is needed to assess how well the seven elements of the 7S model are aligned with the firm's overall strategy. Here are some suggested overall steps to follow:

- Evaluate each of the seven elements of the McKinsey 7S model: This includes analyzing the current state of each element, identifying any gaps between the current state and the desired state, and determining whether the element is aligned with the overall strategy of the firm.
- Using metrics to measure the performance of each element of the McKinsey 7S model.
- Analyze the interconnections: The McKinsey 7S model is based on the interconnections between the seven elements, so it's important to analyze these interconnections when measuring strategic performance. For example, if the structure element is not aligned with the strategy, it is a must to consider how this might impact the other elements.
- Set benchmarks: Set benchmarks for each of the used metrics to measure performance. This will allow us to compare the current performance to past performance, as well as to industry standards and best practices.
- Monitor progress: Continuously monitor progress toward achieving the desired state of each element, using the established metrics and benchmarks.
- Ongoing review and adjust the action plans as necessary to ensure that the firm is moving toward its strategic goals.

By using the McKinsey 7S model to measure strategic performance, firms can ensure that their strategy is aligned with the various elements of the firm. Furthermore, a holistic understanding of how each element is contributing to the overall strategy and identifying areas where improvements can be made to improve performance and achieve strategic goals. This can help to improve performance and achieve strategic goals. Briefly, the McKinsey 7-S model can be used as a holistic approach to measuring strategic performance by analyzing and understanding the multiple factors that contribute to a firm's success.

According to (Kaplan, 2005) by implementing the BSC in various organizational units, firms can align their structure with business units and corporate strategy. The BSC's learning and growth objectives enhance staff, style, and shared values, improving organizational skills and processes. Thus, the BSC can be considered a modern version of the 7-S model, which is popular due to its effectiveness in aligning organizational variables and processes for successful strategy execution. The 7-S model diagram looks like a spider web, with each "S" connected to the other six “Ss”. In parallel, the BSC strategy map represents cause-and-effect linkages among its four perspectives, allowing managers to align their firm for successful strategy establishment.

Table 6: Comparing the 7-S model and BSC

7-S model	BSC
Strategy	Involves defining and evaluating the strategy, considering the balance between short-term cost reduction and long-term revenue expansion, and identifying the customer outcomes anticipated from the implementation of a successful strategy, the key customer value proposition forming the core of the strategy, and the essential internal procedures responsible for developing and providing the distinct customer value proposition.
Structure	Applying (BSCs) within diverse and decentralized units facilitates alignment and integration between these units and the firm value proposition, leading to the creation of synergies.
Systems	Firms employ the BSC to develop their communication, reporting, and evaluation systems in accordance with their unique strategy. Furthermore, the BSC facilitates the alignment of organizational systems, such as incentive and reward programs, planning and budgeting processes, and resource allocation, towards the successful implementation of the strategy.
Staff	The learning and growth perspective of the BSC determines the key job families that play a critical role in the implementation of the strategy and establishes metrics for evaluating the knowledge, skills, and experience of the staff involved in the most significant internal processes.
Skills	The internal process perspective of the BSC evaluates the essential organizational competencies, skills, and processes necessary for the successful execution of the strategy.
Style Culture	The BSC sets the agenda for leadership meetings and helps executives focus on the most significant tasks required for successful strategy implementation. In particular, the organizational capital component of the learning and growth perspective includes specific metrics that allow firms to define and assess the desired leadership style and skills.
Shared values	Disseminating the BSC across the firm fosters a shared comprehension and commitment to the firm's long-term objectives and the strategy for achieving them. Additionally, the organizational capital component of the learning and growth perspective enables the measurement of adherence to values and cultural norms.

Source: (Kaplan, 2005)

Based on the above, despite the growing interest and demand for measuring strategic performance in firms, there are still some gaps or obstacles that limit the effectiveness of strategic performance measurement approaches. These can include Overreliance on financial metrics, inadequate alignment with strategic goals, and limited scope Some performance measures may focus too narrowly on a particular area of the organization, failing to capture the broader impact or interdependencies of organizational activities, inaccurate or incomplete data leading to flawed assessments of organizational performance, inability to capture intangible factors, failure to consider external factors such as changes in the market or shifts in consumer preferences, which can have a significant impact on strategic performance, resistance to change within a firm, resist the implementation of performance measures, either due to a lack of trust in the data or a fear that the measures will be used punitively, difficulty in balancing multiple measures or conflicting performance measures, leading to a lack of clarity and diffusion of focus.

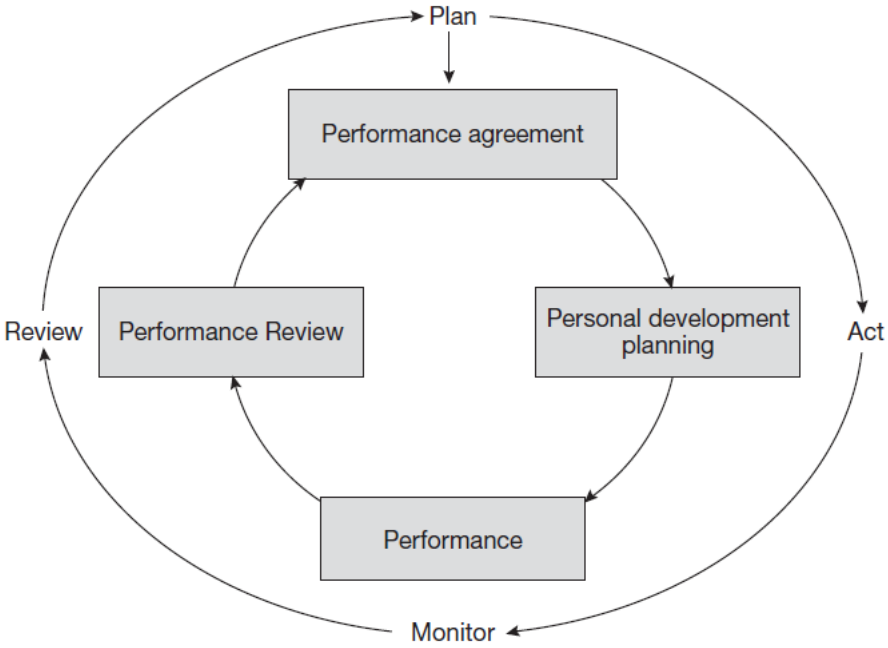
IV. Strategic Performance Management

Strategic Performance Management can be defined as oriented systematic processes and procedures toward performance and outputs (Briel, 2015). (Armstrong, 2006) argues that performance management is a flexible process and not a system. As the term "system" implicitly includes stagnation or rigidity, standardization, and bureaucracy, which contradicts the concept of performance management as a flexible and evolutionary process.

He also suggests that the performance management process includes the following activities (see figure 16):

– Planning: Preparing plans, determining the competencies needed to achieve them, and mobilizing resources to improve performance.
– Acting: doing what is needed as activities to carry out the plans.
– Monitoring: controlling the realization of the objectives.
– Reviewing: to assess achievements and give feedback to make plans.

Figure 16: The performance management cycle



Source: (Armstrong, 2006)

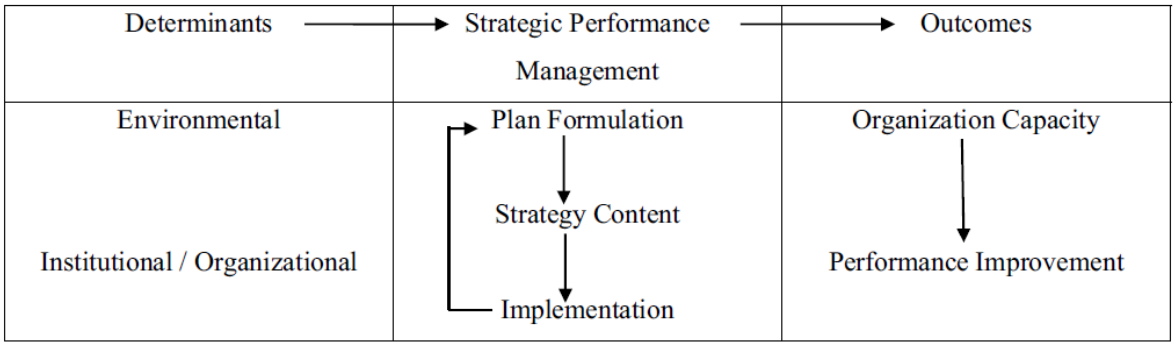
According to (Cokins, 2009) performance management relates to continuous and Synchronizing improvement, in order to create value from and for customers, in parallel with creating economic value for stakeholders. He defined performance management literally as '' the translation of plans into results—execution''; it is the process concerned with managing the organization's strategy, so the firm's strategy in his opinion consists of:

1. What products should not be served?
2. Non-target customers and markets?
3. How to achieve success, and continuity of success?

According to (Arimavičiūtė & Raišienė, 2015), the creation of a firm's strategy is an assigned task of strategic planning, which is itself a component of strategic management. Strategic management includes various activities such as managing resources, achieving goals, and monitoring and assessing organizational performance. Figure 17 addresses a conceptual model of strategic planning and strategic performance management, highlighting the interconnections between these two concepts. Additionally, strategic planning aids in bridging the gap between a firm's capabilities and its performance improvements.

Moving from strategic planning to strategic performance management can be challenging, as is shifting from performance measurement to performance management, but it can lead to a better connection between a firm's strategy and its performance. It is worth mentioning that performance management supports strategic planning by evaluating and reviewing the feasibility of strategic decisions during implementation. Therefore, strategic management is an iterative process.

Figure 17: Conceptual model of Strategic Performance Management



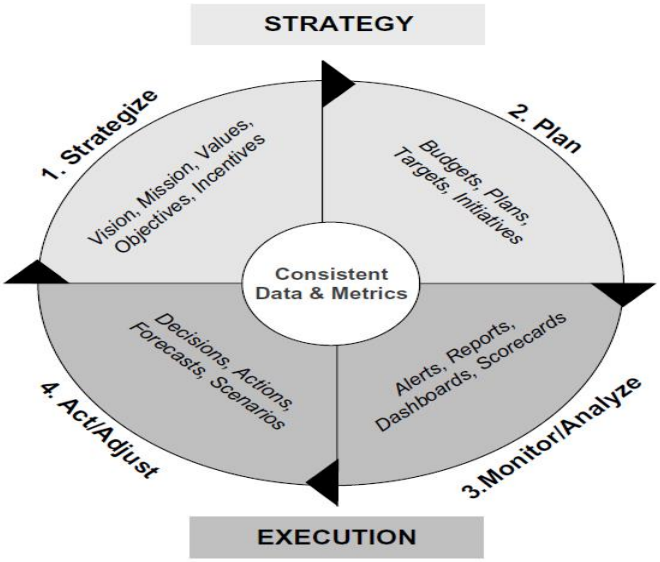
Source: (Arimavičiūtė & Raišienė, 2015)

Furthermore, (Ana-Maria, Constantin, & Cătălina, 2009) argue that strategic performance management is a forward-looking and developmental process that provides a framework for managers to support their team members rather than just appraise them for pay. It is essential and crucial for a firm`s strategic agility, which is the ability to adapt and thrive in a constantly changing business environment. Firms that prioritize strategic performance management have demonstrated superior financial and non-financial performance.

According to (Eckerson, 2011) performance management involves a closed-loop process consisting of four steps that enable the implementation of the strategy. These steps include strategizing, planning, monitoring/analyzing, and acting/adjusting. The entire cycle centers around the use of integrated data and metrics to establish a shared language and framework for

evaluating performance in all areas of the firm. Figure 18 depicts the top half of the cycle as the "strategy" phase and the bottom half as "execution".

Figure 18: Performance Management Framework



Source: (Eckerson, 2011)

V. Creating Value through the Alignment of Strategic Performance with a Strategy Map

Creating value from intangible assets involves four principles: indirect value creation, contextual value, potential value, and bundled assets. Indirect value creation means that improvements in intangible assets affect financial outcomes through cause-and-effect relationships. Contextual value means that the value of an intangible asset depends on its alignment with the strategy. Potential value means that intangible assets have potential value but not market value, and this value needs to be transformed into tangible value through internal processes. Bundled assets mean that intangible assets create maximum value when they are combined effectively with other assets, both tangible and intangible (Kaplan & Norton, 2004).

While the managers are unable to evaluate the quality of their strategic decisions objectively or consistently in the absence of a performance referent (CHAKRAVARTHY, 1986). (Kaplan & Norton, 2004) argue that the BSC, designed to enhance the measurement of intangible assets, is a powerful tool for implementing and describing a firm's strategy. The four-perspective model provides executives with a language to discuss their business's direction and priorities, viewing strategic measures as cause-and-effect linkages between objectives rather than independent indicators. In order to facilitate executive discussions, the authors developed a visual representation called a “strategy map”, which illustrates the cause-and-effect relationships between a firm's strategy components. The strategy map is just as valuable insight to executives as the BSC. Furthermore, Strategy maps are constructed based on the four perspectives of the BSC and serve as an interface between strategy and the BSC. They interpret all causal relationships, enabling the development, deployment, and optimal fulfillment of effective strategies over time. Therefore, strategy maps, which express a firm's causal relationships, are utilized to aid firms in creating value (Wu, 2012).

According to (Kaplan & Norton, 2004) the strategy map is based on five main principles:

Strategy balances contradictory forces: Balancing short-term financial goals of cost-cutting with long-term revenue growth through investment in intangible assets is a challenge for private sector firms seeking sustained shareholder value. Sacrificing long-term investments for short-term gains can be tempting but a balance must be struck to achieve both objectives.

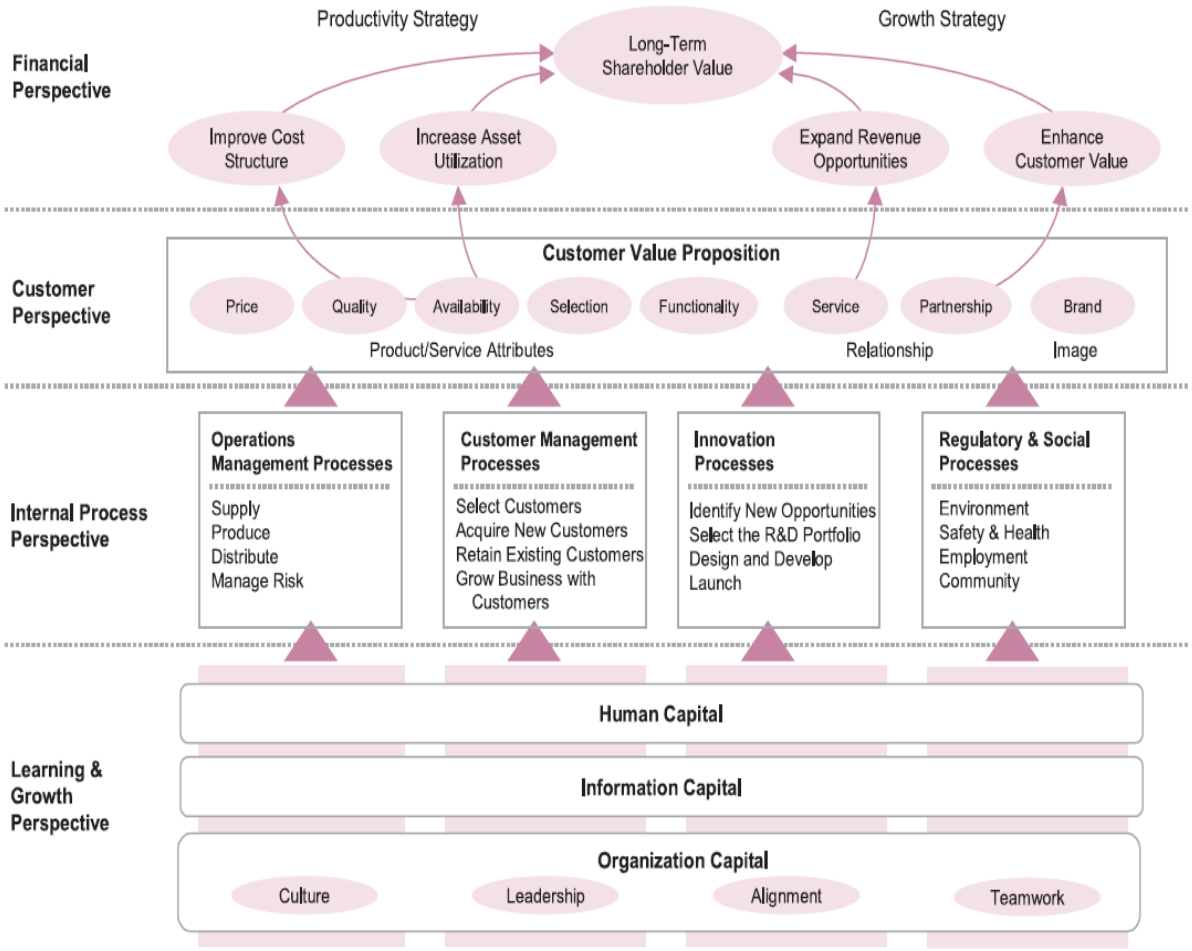
Strategy is based on a differentiated customer value proposition: Creating sustainable value is rooted in customer satisfaction. A crucial aspect of the strategy is defining the target customer segments and identifying the value proposition that will please them. The clarity of this value proposition is the most crucial element of strategy. There are four primary value propositions and customer strategies: (1) cost minimization, (2) product excellence, (3) comprehensive customer solutions, and (4) system dependence. Each of these value propositions outlines the essential attributes that must be provided to satisfy customers.

Value is created through internal business processes: Strategy maps and BSCs describe the desired outcomes of firms from financial and customer perspectives, such as enhancing shareholder value via revenue growth and productivity improvements and expanding the firm's market share by satisfying acquisition, retaining, and growing customer loyalty.

The strategy consists of simultaneous, complementary themes: Improvements in internal processes have varying benefits over time, with operational processes yielding short-term results and customer management improvements showing benefits in six to twelve months. Innovation and enhanced regulatory/social processes take longer to show benefits. A balanced strategy should have at least one strategic theme from each of the four internal clusters, resulting in benefits that phase in over time and generate sustainable growth in shareholder value.

Strategic alignment determines the value of intangible assets: The learning and growth perspective is the fourth dimension of the BSC strategy map and concerns the firm's intangible assets and their role in the strategy. Intangible assets are categorized into three groups: human capital (employee skills, talent, and knowledge), information capital (databases, information systems, networks, and technology infrastructure), and organization capital (culture, leadership, employee alignment, teamwork, and knowledge management).

Figure 19: A Strategy Map Represents How the firm Creates Value



Source: (Kaplan & Norton, 2004)

A strategy map is a visual representation of a firm's strategy, with objectives and measures that connect intangible assets to financial outcomes. The four perspectives of a strategy map: financial, customer, internal process, and learning and growth. The financial perspective focuses on financial outcomes, while the customer perspective identifies the target customers and their needs. The internal process perspective maps the critical processes that impact customer satisfaction and financial outcomes. Finally, the learning and growth perspective outlines the capabilities and resources needed to support the internal processes. By aligning these four perspectives and using a balanced scorecard, firms can create value by transforming intangible assets into tangible outcomes.

Creating value through the alignment of strategic performance with a strategy map involves several steps:

Developing a clear strategy: The strategy should be based on well-defined strategic goals and a thorough analysis of the internal and external environment, and it should be communicated effectively to all stakeholders.

Creating a strategy map: A strategy map is a visual representation of the firm's strategy that shows how the various strategic objectives are linked to each other and to the ultimate goal of

creating value. The map should identify the key drivers of value creation according to the firm objectives.

Align performance measures: Once the strategy map has been created, the next step is to align the firm's performance measures with the strategic objectives. This involves selecting key performance indicators (KPIs) that measure progress towards achieving the objectives and ensuring that they are aligned with the strategic priorities.

Cascading the strategy: The strategy and the associated performance measures should be cascaded throughout the firm, from the top-level strategy map down to individual employees' goals and objectives. This ensures that everyone within the firm is aligned with the strategy and working towards the same goals.

Monitoring and adapting: The firm should continually monitor its performance against the strategic objectives and adapt its strategy as necessary to ensure that it remains relevant and effective. This involves using the KPIs to track progress and identify areas where improvements can be made, as well as reviewing the strategy regularly to ensure that it remains aligned with the firm's strategic goals.

Briefly, creating value through the alignment of strategic performance with a strategy map requires a disciplined and structured, and dynamic approach that involves clear communication, dynamic planning, and ongoing monitoring and adaptation. By aligning the firm's performance with its strategic objectives, firms can create a culture of continuous improvement and drive sustainable value creation.

Conclusion

Over the past two decades, management thinking has known a significant transformation, with one of the most notable changes being the shift from traditional industrial age thinking to knowledge age thinking is exemplified by the new strategic orientation that outlines the management philosophy, in different words, this change reflected in a new approach to management thinking.

Strategic performance is a critical aspect of any firm's success. By defining and measuring key performance indicators (KPIs) and using appropriate measurement approaches, firms can better understand their performance and make data-driven decisions to improve it. However, there are also many challenges associated with strategic performance management, such as ensuring data accuracy and aligning performance measures with business goals. To overcome these challenges, it is essential to have a strategic performance management system in place that aligns with the firm's strategy and business model.

Moreover, the alignment of strategic performance with the firm's strategy and business model is essential to ensure that the firm is moving in the right direction. A strategic performance management system should be designed to support the firm's strategic goals, and the performance measures should reflect the priorities of the business. This alignment ensures that the firm is focusing its efforts on the activities that matter most and that will drive its strategic success. Thus, firms can improve their performance, achieve their strategic goals, and sustain their competitiveness in today's ever-changing business environment through a structured strategic performance approach and a deep understanding of the firm's goals and priorities.

Chapter III: Theoretical framework of intellectual capital and its effect on strategic performance

Chapter III: Theoretical framework of intellectual capital and its effect on strategic performance

Introduction:

This chapter addresses IC basic concepts, in order to develop the theoretical framework for this thesis, this chapter was divided into four sections; the first represents the RBV and organizational learning and sharing knowledge as a vital process for creating and developing intellectual capital. The second section addresses the conceptual framework of IC, focusing on IC dimensions, the third section is about IC measurement approaches and IC management, and the fourth section addresses how IC can affect strategic performance, we aim for it to be concluded with an analytical conclusion where IC can be integrated with main strategic management models.

I. Resources-based view and organizational learning

I.I Resources-based view: Resources & Capabilities

Globalization has crucial effects on the business environment with all its changing variables, which is reflected in the ferocity of competition, this obliges the firms to mobilize their efforts in the search for a resource that achieves sustainable advantage in a business environment characterized by uncertainty and rapid change of features and coordinates of its components. The successive technological developments have contributed significantly to reducing the life cycle of products and innovations, the real challenge is to find out the crucial resource that creates value for the firms in the context of the digital and knowledge economy, knowledge assets and human capital becomes an increasingly significant and crucial resource and the key factor that determines firms' performance.

As Porter (1980), the industry-based view, the firm's environment with its variables significantly affects the strategies and performance of the firm (Ismail & Kuivalainen, 2015) While the traditional strategy focused on the industry and competitive positioning, the resource-based view (RBV) was based on private and internal resources of the firm as a resource of competitive advantage (Yang, Xun, & He, 2015). In other words, RBV focuses on the internal organizational resources of firms and the disadvantages of the external environment (market components) (Garg & De, 2014). From the perspective of the contingency approach, it is crucial to do the alignment of the external environment with the strategies and structures of the firm which improves the performance (Ismail & Kuivalainen, 2015).

From the perspective of RBV, firms are a combination of a set of tangible and intangible resources. Resources include the firm assets, capabilities, organizational processes, firm attributes, information, knowledge, etc, which are controlled by the firm, which allows the visualization and implementation of strategies efficiently and effectively (Oura, Zilber, & Lopes, 2016). To acquire resources such as individuals, suppliers, and infrastructure, which have a significant impact on long-term performance, the firm's knowledge is a critical factor (Sullivan & Marvel, 2011). Research and development (R&D) are one of the inputs in the process of producing knowledge resources within the firm, which contributes to identifying, absorbing, and exploiting the knowledge generated within the firm or acquired from outside of the firm. As a result, SMEs through intensive R&D produce knowledge and thus increase innovative capabilities in addition to various other resources and capabilities (Radas & Bozic, 2012).

Innovation is a crucial driver for business growth, which allows the firm to convert dynamic capabilities to be more adaptive and flexible with a stronger ability to learn how to exploit new ideas, because of that, each firm has its bundle of resources, skills, and competencies as RBV indicated (Sharma, Davcik, & Pillai, 2016). The strategic orientation of the firm appears in the focus on innovation which can contribute to improving the firm performance as a source of achieving competitive advantage (Do, Mazzarol, Soutar, Volery, & Reboud, 2018).

The RBV is based on the firm's resources, where the firm is a set of unique bundles of resources that contribute to improved performance through the heterogeneity of those resources, the heterogeneity of the firms resulting from the mobility and the use of resources for each firm (Ismail & Kuivalainen, 2015).

In basic from the perspective of RBV, senior and entrepreneurs 'human capital are the most valuable resources (Reisinger & Lehner, 2015). Knowledge represents a significant and strategic resource to achieve a new competitive advantage (Sullivan & Marvel, 2011). Innovative capabilities are a critical factor too in achieving competitive advantage (Merrilees, Rundle-Thiele, & Lye, 2011). It has become known that intangible resources in an organized context can achieve a temporary or permanent competitive advantage (Anderson & Eshima, 2013). As Barney (1991) believes that organizational knowledge is the key resource to achieving competitive advantage (Ismail & Kuivalainen, 2015). Competitive excellence can be achieved by possession or lack of competitive advantages, which are related to the ability to survive in the long term, competitive advantage is a result of the skills and professionalism in exploiting available capabilities with the use of appropriate competitive instruments (Trąpczyński, Jankowska, Dzikowska, & Gorynia, 2016).

The latest assessments of the resource-based view emphasize the need not to view resources as an isolated variable, but rather resources and capabilities should be seen as a mixture and combination to solve a practical inconsistency in various elements of the firm to influence performance (Hollender, Zapkau, & Schwens, 2017). One of the strategic tools that contribute to enhancing performance is the firm's dynamic capabilities. Of course, this contribution depends on how to use these capabilities. Among the characteristics that allow the effective use of these capabilities is the skilled human resources, and good management of time and resources that will achieve efficiency and effectiveness and avoid any losses or costs (Arend, 2014). Therefore, these capabilities contribute to the achievement of achieving strategic objectives of the development and financial plan (Montoya, Martins, & Ceballos, 2017).

RBV provides an important theoretical reference that supports the perception of resources, human resources, as well as external resources (e-commerce) contribute strongly to the improvement of firms' performance (Yang, Xun, & He, 2015). As an extension of RBV, the competencies-based view (core competencies) argued for the formulation of strategies taking into consideration core competencies, developed by Prahalad and Hamel (1990), which assumes that, unlike tangible assets which diminish over time, the firm should invest and strengthen core competencies as a crucial source of sustainable competitive excellence. Core competencies are linked and lie behind the firm's ability to integrate intangible resources (skills and technologies) and to allow the creation of a unique and distinctive value to customers (Garg & De, 2014).

Chapter III: Theoretical framework of intellectual capital and its effect on strategic performance

The resource-based view emerged as a result of work (1959), where the firms are a set of resources. Penrose assumes that the firm can create value through the effective management and use of internal resources (Rivard, Raymond, & Verreault, 2006). To understand the sources of sustainable competitive advantage, it is necessary to build a theoretical model based on the assumption that enterprise resources have the potential for sustainable competitive advantages. To achieve these possibilities, the firm's resources must have these four characteristics, they must be valuable, meaning that they exploit opportunities and/or address threats in the environment of the firm, they must be rare between the firm's current and potential competition - not available to all competitors - be fully imitable, there can be no strategically equivalent alternatives to these resources that are valuable. These characteristics of enterprise resources can be considered empirical indicators of the heterogeneity and consistency of firm resources and their usefulness and importance in generating sustainable competitive advantage (Barney, 1991). The fact that competitors' own resources does not mean a competitive advantage (no heterogeneity). Heterogeneity is a prerequisite for a temporary competitive advantage. Resource mobility is a necessary condition for achieving sustainable competitive advantage, as competitors will face a disadvantage by acquiring, developing, and using resources compared to the firm they already own (Rivard, Raymond, & Verreault, 2006).

The RBV emerged from strategic management theory and its ideas, where RBV focuses on how the firm achieves success and competitive excellence through the consideration of resources and capabilities as the main axis (cornerstone) and a real source of wealth (Bi, Davison, & Smyrnios, 2017).

The knowledge-based view emerged as a result of the resource-based view. The basis of the firm's knowledge-based view is to assume that critical input to production and the most important and crucial resource of value is knowledge (Kocak & Abimbola, 2009). Knowledge within the firm is based on "combinative capabilities"; it is a combination of internal learning abilities and acquired knowledge from outside of the firm, which creates organizational and technological opportunity Ability to acquire, absorb and exploit -knowledge management- external knowledge is a core capability for a firm (Kilpi, Lorentz, Solakivi, & Malmsten, 2018). By mentioning organizational learning, it is considered a key and an engine for firm performance (Joensuu-Salo, Sorama, Viljamaa, & Varamäki, 2018).

Resources are the assets owned by the firm that are difficult to imitate if not impossible, as these assets are difficult to transfer due to the high cost of transactions and transportation, in addition to the tacit knowledge that these assets can include (Teece, Pisano, & Shuen, 2009). Resources can be tangible or intangible, which are linked to the firm in the long run and can represent the weaknesses or strengths of the firm. On the other hand, the firm's capabilities represent the firm's ability to integrate resources to achieve the desired results. Thus, capabilities are the complex mixed set of skills and knowledge involved in processes and the routines of the firm to create value, either directly or indirectly (Hollender, Zapkau, & Schwens, 2017). Two main types of organizational capabilities: external sourcing (bringing knowledge from the firm's external environment) and employee involvement (generating, developing, and sharing capabilities within the firm) (Uhlaner, Van Stel, Duplat, & Zhou, 2013). RBV also differentiated the terms resources and capabilities: resources are used to create new products while capabilities are developed based on the frequent use of those resources to create new

products as well (Bi, Davison, & Smyrnios, 2017). In other words, what the firm has, are resources, and what it does are capabilities (Haddoud, Nowinski, Jones, & Newbery, 2019).

Capacity differences can be a result of the accumulation of firm experience as a key option for developing the range of resources and skills, and/or as a result of the different value creation effectiveness of the wealth available to the firm. Recent theoretical developments in the dynamic capabilities' perspective suggest that organizational capacities evolve, and recent organizational and environmental can contribute to creating, developing, maturating, and changing these capabilities (Branzei & Vertinsky, 2006).

The firm's capabilities are its ability (apparent or potential) to achieve in different circumstances or the face of competition, whatever its goals; each firm has current and potential strengths and weaknesses that must be identified and distinguished (Teece, Pisano, & Shuen, 2009).

Dynamic capabilities have been defined as the ability to achieve new competitive advantages continuously (Arend R. , 2013). Zott (2003) found how dynamic capabilities can affect a firm's performance, and proposed three contributions: timing, cost, and learning of resources deployment. In addition to the development of appropriate measures (Garg & De, 2014). It should be noted that it is also important to measure performance through both financial and non-financial measures to achieve an overall balance in performance (Njinyah, 2018).

I.II Organizational learning & knowledge creation from a strategic perspective

The link between strategic processes and organizational learning is evident in the way that individual and collective levels interact. Strategic processes involve combining the skills and knowledge of human resources to produce new collective knowledge, competence, and performance. This is a form of organizational learning, and it is tightly connected to the strategic processes that are in place. In different words, organizational learning is an important aspect of strategic processes, and the two are closely linked; the process of organizational learning involves taking the individual skills and knowledge of employees and turning it into collective knowledge and performance that can be used to drive the firm forward. Strategic processes are therefore critical for supporting and promoting organizational learning (Rhita & Latifa, 2020).

Organizational learning according to Senge (1990) is a collective effort that aims to increase, continuously and actively, individual, and organizational knowledge and skills. There are two types we are addressing of organizational learning, which we adopt in terms of strategic perspective:

Strategi capabilities; are used to adapt the firm and transform it into a "learning organization", in order to acquire new knowledge by interacting with different stakeholders (managers, employees, customers, suppliers, etc.).

Organizational capacities; are at the tactical and operational levels. Knowing how to act, an action potential that results from the combination and coordination of the firm's resources, knowledge, and skills through the value stream (RAUFFET, Cunha, & Bernard, 2011).

This study focuses on the strategic level of learning, although learning can occur at the individual, group, and organizational levels.

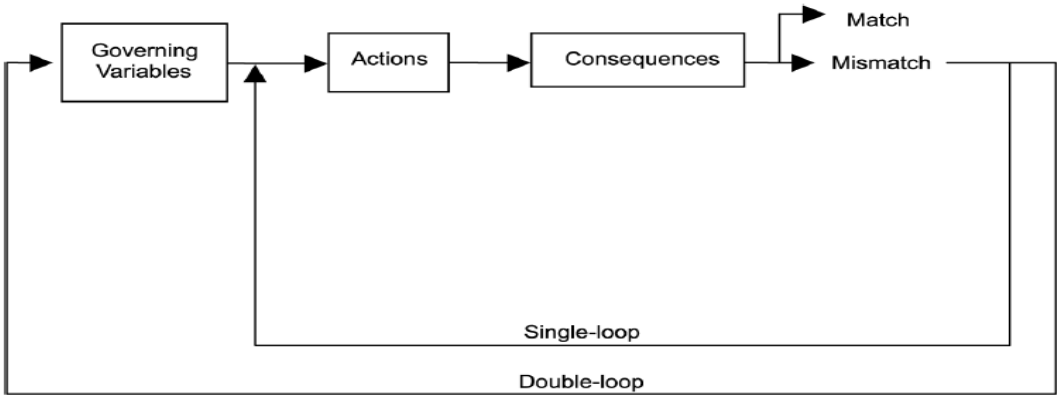
Organizational learning can be seen as a crucial means for accomplishing strategic renewal in a business. While organizational learning is the result of a process where actors detect mistakes and take action to correct them. It can be divided into two levels: simple-loop adaptive learning which produces minor changes in behavior but does not result in significant changes in values; and double-loop or generative learning which leads the firm to change its paradigm, meaning drastically revising its guiding values and foundational paradigms. Here, the BSC can play a crucial role in both single-loop and double-loop learning processes (Naro & Travaillé, 2019).

Argyris and Schön created the theory of double-loop learning to enhance the development of stronger knowledge. They were concerned that many firms only practiced single-loop learning, which did not change the underlying values and norms of a strategy or action, leading to a lack of change and preventing the firm from learning from its mistakes, potentially causing failure. Therefore, they upgrade double-loop learning as a tool for fostering inquiry, questioning current beliefs and actions, and leading to the creation of new theories in use (Blackman, Connelly, & Henderson, 2004).

When the actual outcome mismatches with the expected outcome (or there is an error), individuals may adjust their mental models, perspectives, and actions in order to reconcile the mismatch between expectations and results. This detection of an error in the firm's theories-in-use prompts individuals to make changes and correct it. This single-loop learning involves individuals acting based on the firm's theories in use, leading to either a match or mismatch between expectations and outcomes, which then confirms or disproves the organizational theories in use.

Organizational learning takes place when individuals, based on their mental models and perspectives (known as "images and maps"), assess a match or mismatch of the outcome with their expectations. If the outcome aligns with their expectations, it validates their current organizational theories-in-use, but if there is a mismatch, it disproves those theories and may prompt changes in the firm's mental models or practices. This continuous process of recognizing the relationship between results and expectations is crucial for the ongoing development and evolution of the firm (Argyris & Schon, 1978).

Figure 20: Single-loop and double-loop learning Model.

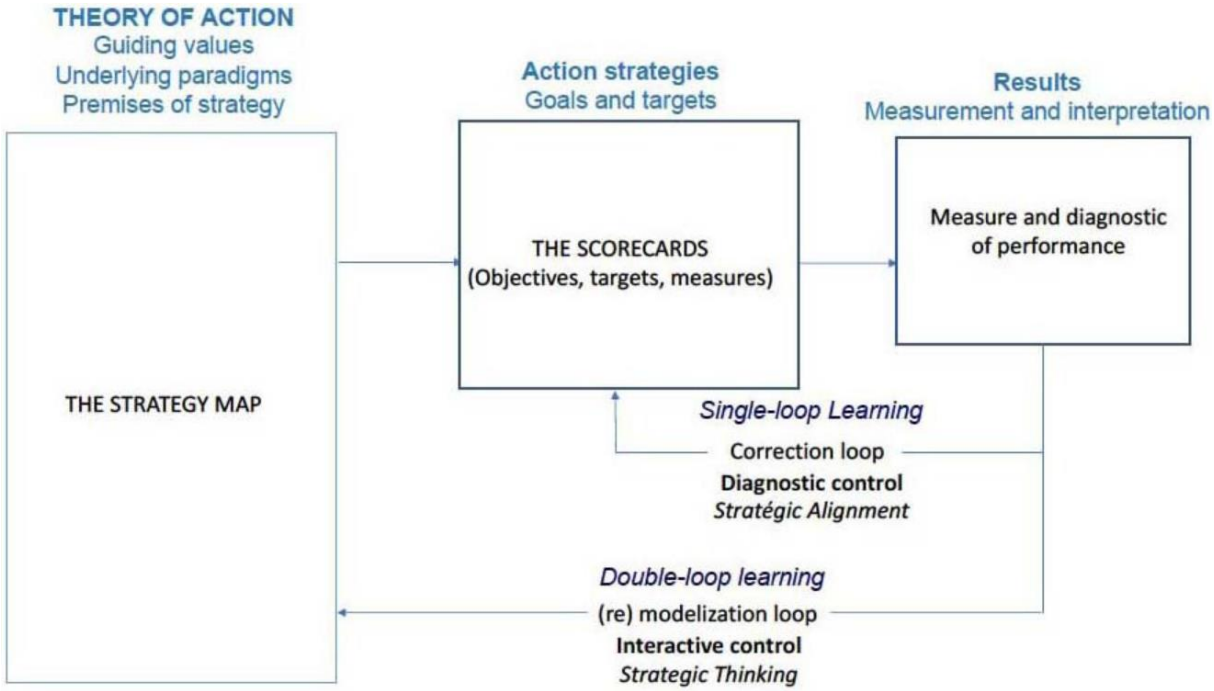


Source: (Blackman, Connelly, & Henderson, 2004)

According to Kaplan & Norton (2001), strategy can be considered as a hypothesis model of cause-and-effect relationships, which can be translated into a strategic map based on the model of Argyris and Schön as a “theory of action” that the “action strategies” are based on.

A first single-loop learning involves comparing the target objectives and values to the results. If there is a discrepancy, necessary corrections must be done. To use Kaplan and Norton's words, this involves achieving strategic alignment and "translating strategy into action". The second type of double-loop learning involves going back to the foundations of strategy by questioning the strategic map, such as the guiding values that underlie the "action strategies" on which the BSC's objectives and targets are defined. It would be more about a learning process to (re)think of the strategy (strategic thinking) rather than a strategic alignment process. The way of considering the measurement or diagnosis of results, whether it is a purely cybernetic approach in the context of a diagnostic control or an interactive approach, seems essential here. Thus, the BSC mobilized in an interactive approach could promote generative learning when the strategic map is the product of interactive exchanges between the members of the organization. Under these conditions, learning can be described as organizational insofar as the processes of construction of the BSC lead to the transfer of knowledge and information between individuals or groups of individuals. It is therefore a question of building a shared representation of the strategy and the underlying assumptions on which its performance model is based (Naro & Travaillé, 2019).
Figure 21 is representing the role of BSC in organizational learning.

Figure 21: BSC role in organizational learning



Source: (Naro & Travaillé, 2019)

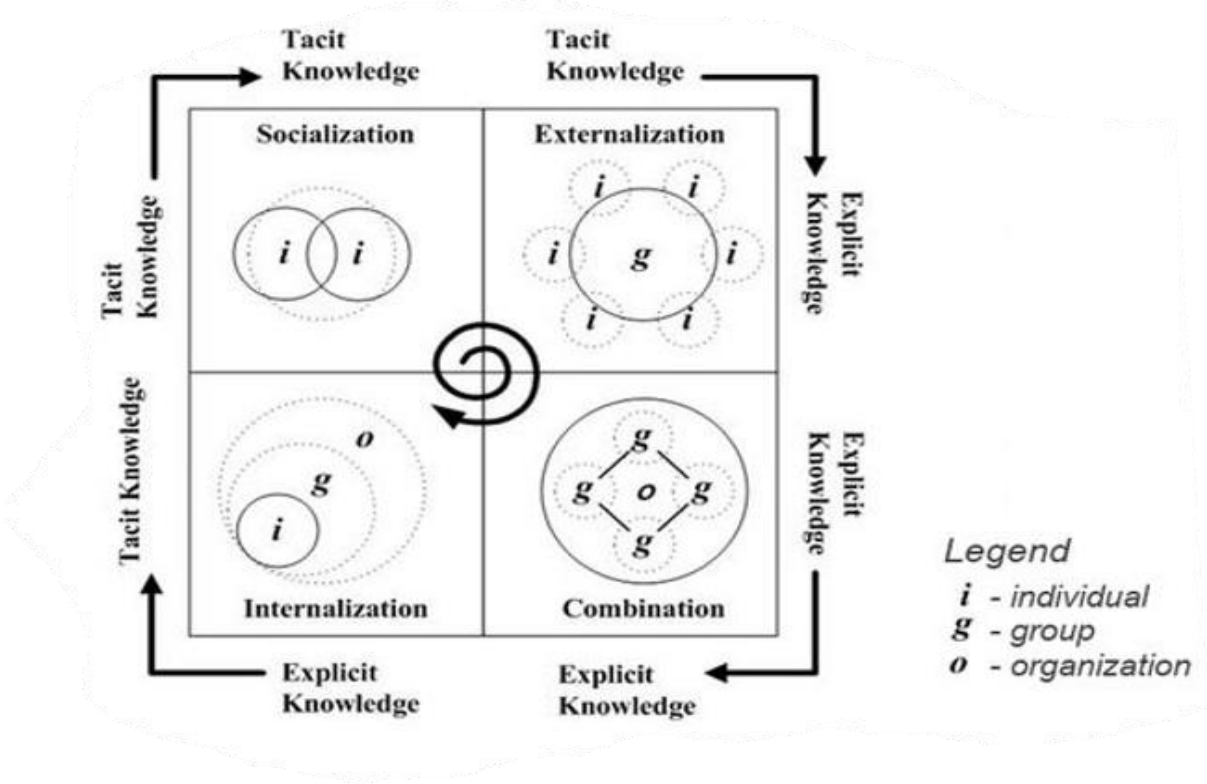
Organizational learning can be strategically categorized into external and internal learning, both complementary with negative and positive sides; External learning focuses on four key aspects of the organizational environment: customers, competitors, networks, and institutions. Internal learning encompasses individual, trifunctional, inter-functional, and multilevel learning. With the changing market conditions, several learning domains become increasingly important for businesses. Therefore, one of the key responsibilities of strategic management is to direct the

organizational learning process by identifying and directing resources to the fundamental organizational learning domains required to create a sustainable competitive advantage. This is becoming increasingly important in today's competitive environment, where rapid innovation and upgrades driven by organizational learning are necessary for success. subsequently, competitive advantages will rely more on intangible knowledge than tangible resources. Therefore, top management should aim to become professionals and experts in managing organizational learning processes to shape the firm's capabilities and competitive advantage (Bierly & Hämäläinen, 1995).

We think understanding organizational learning requires addressing the process of creating knowledge in the firm, since both concepts are related, they support and reinforce each other. Therefore, the model SECI was considered the ideal model to explain the integration and ongoing process of knowledge creation and organizational learning, this also supports IC generation and development.

The SECI Model is depicted as a two-dimensional matrix that shows four possible scenarios for the interaction or transformation of tacit and explicit knowledge. The model encompasses four processes of knowledge conversion: Socialization (S; interaction of tacit to tacit), Externalization (E; conversion from tacit to explicit), Combination (C; interaction of explicit to explicit), and Internalization (I; conversion of explicit to tacit). The knowledge is being created through repeating cycles in an upward spiral (Mendoza, Cheng, & Yan, 2022).

Figure 22: SECI Model for Knowledge Creation



Source: (Mendoza, Cheng, & Yan, 2022)

SECI model plays a crucial role in the relationship between creating knowledge and organizational learning. The model describes the four processes by which knowledge can be transformed and transferred within a firm. These processes facilitate the transformation of individual knowledge (tacit) into shared knowledge (explicit) and vice versa, allowing for

continuous creation and sharing of knowledge. The model provides a framework for understanding and managing the flow of knowledge within a firm and helps firms to identify opportunities for improvement and innovation. By following the SECI model, firms can promote a culture of knowledge sharing and continuous learning, and effectively integrate new knowledge into their processes and practices to drive strategic performance.
The SECI model is a strategic framework that can have a significant impact on IC, as it provides a framework for the creation, sharing, and utilization of knowledge within firms. By promoting the use of the SECI model, firms can build a more knowledgeable and skilled workforce, encourage innovation and continuous improvement, and create a learning-oriented environment, enhancing and upgrading knowledge management, fostering innovation, encouraging collaboration, and building a learning culture. From a strategic perspective, firms can use the SECI model to align their knowledge management practices with their overall business strategy.

II Intellectual capital conceptual framework: concept and dimensions

II.I Intellectual capital concept

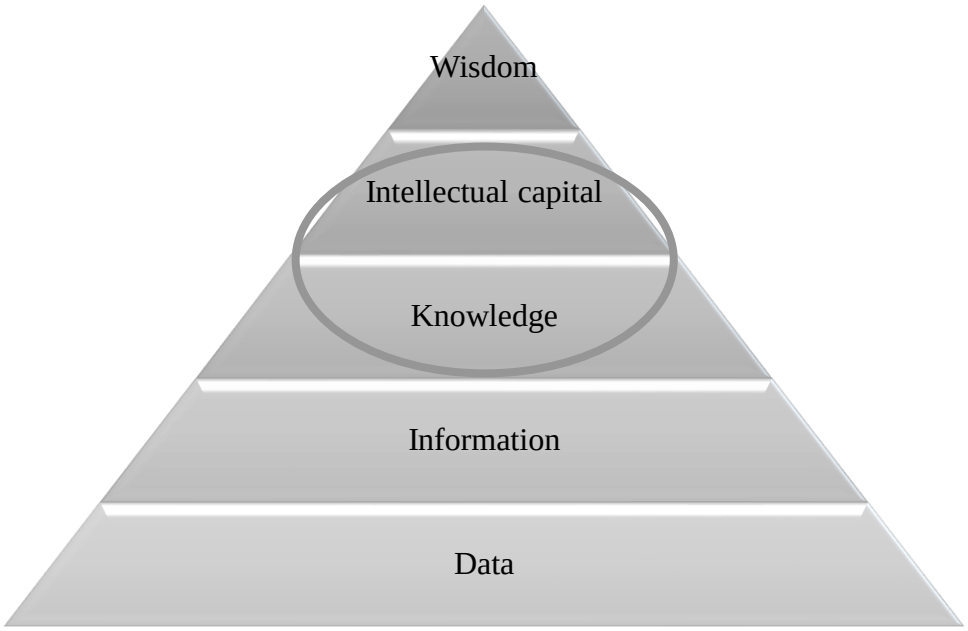
Intellectual capital is an emerging and fast-evolving concept attracted the recent years, attention of researchers and practitioners. So far, there is no universal definition of intellectual capital, it is a complex concept (Yitmen, 2011). Bontis (2001) defined intellectual capital as "the collective intangible assets and their stream of knowledge" (Al-Jinini & Bontis, 2019). IC is "the sum of intangible resources (knowledge, information, intellectual property, and experience) that have been formalized, captured, and leveraged to create assets of higher value" (Capatina, Bleoju, & Vairinhos, 2017). Both Stewart and Sullivan (1999) refer to IC as the knowledge that can create wealth or generate income (Odat & Bsoul2, 2022).

It can include also knowledge assets, intangible resources, and capabilities, which contribute to the development of processes that contribute to achieving a competitive advantage (Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011). While O'Regan (2000) suggested that `IC = People x Internal capital x External capital` (Tseng & Goo, 2005).

Intellectual capital is the connected knowledge assets with the firm, which relies on creating value for achieving strategic competitive advantage. Intellectual capital has been defined by (PASHER & RONEN, 2011) within the knowledge pyramid, where intellectual capital is at a level between knowledge and wisdom. IC represents the combination of the firm's knowledge: human capital, business process set, customer knowledge, and structural capital.

While wisdom is the ability to identify knowledge that can be intellectual capital to invest in and develop it as a source of creating the desired value. Wisdom has a highly sensitive importance as it is related to the analysis c the external environment of the firm - opportunities and threats - what makes the firm wise is the use of that knowledge to exploit opportunities. A wise firm is one that continuously updates its knowledge, so a firm with high intellectual capital is a firm that can grow strategically (PASHER & RONEN, 2011).

Figure 23: Knowledge levels



Source: (PASHER & RONEN, 2011)

According to these definitions, it is of note that different terms have been used to identify the IC such as intangible assets, and knowledge-based assets, besides the components (human capital, structural capital, and customer capital), which shows the wide scope of this concept.

Based on the above, we can propose a definition of intellectual capital as a set of intangible assets or values created that are embedded within a firm, IC is created through the integrated, interacted, and dynamic combination of human capital (knowledge, competencies, skills, experience and creativity of the firm`s human resources), organizational capital (systems, processes, patents, organizational culture and structure and resources that the firm uses to create value), and relational capital (excellent relationship with clients, suppliers, and stakeholders, good competitive positioning in the market due the trust, reputation, quality and good partnership), which allows creating strategic value for the firm.

II.II Intellectual capital dimensions

Due to different research perceptions about intellectual capital, researchers are having different points of view about the component of intellectual capital. There are duplication, textual, and pluralism dimensions. The binary sees that intellectual capital consists mainly of human capital and structural capital, the theory of Trinity says that intellectual capital consists of human capital, structural capital, and relational capital (Si, 2019). To facilitate the measurement of intellectual capital, some scholars have attempted to classify intellectual capital according to certain criteria. Miller et al (1999) and Stewart (1997), have classified intellectual capital into three components: Human capital, structural capital, and customer capital. Human capital refers to the employees 'knowledge, innovative capabilities, expertise, competencies, and commitment that employees possess that can create value for an organization. Structural capital refers to strategic and organizational assets such as organizational culture, processes, patents, copyrights, and trademarks. Customer capital refers to the value resulting from the excellent

relationship between stakeholders which is a result of establishing and maintaining human capital and structural capital (Xu & Wang, 2019). These three dimensions of intellectual capital are related to each unit and each department in the firm, as it contributes to the development of new products and services (Carmona-Lavado, Cuevas-Rodríguez, & Cabello-Medina, 2013). Innovation may include products and processes in addition to intellectual property resulting from the patent and trademarks (Cieślik, Qu, & Qu, 2018). Since the IC definition was expanded and there is no generally unified definition especially in terms of classification, due to the emerging economic transformation, in this thesis we tend to adopt the well-known tri-part model based on the identification of human capital, organizational, and relational capital.

Human capital; human Capital Theory was born under strong and inspiring leadership by Theodore Schultz, Gary Becker, and Jacob Mincer. It has since become famous, with many new theoretical and experimental developments. Human capital is now a familiar concept, used daily in public debates, and a favorite concept for many politicians who want to emphasize the importance of developing and disseminating new knowledge to maintain a high level of well-being (Joop & Henriëtte, 2007). The concept of human capital is very old, important references have been found in economic writings dating back to 1676. The first estimate of human capital stock was probably in the 1676s in sir William Petty's political account book (Fritz, 1984). According to Gary S. Becker, human capital is called by this name because individuals cannot be separated from their knowledge, skills, health, or values in the way that they can be separated from their financial and material assets (Becker, 2023).

Hudson (1993) defines human capital at the individual level as a combination of these four factors: genetics, education, experience, and attitudes about life and business (Nick & Jac, 2002). According to Kucharcikova (2011), the new theories of economic growth describe human capital as the sum of the individual's innate and acquired skills, knowledge, and experience (Alika & Stan, 2014). IC refers to the stock of knowledge, skills, and abilities that are embedded in the individual which resulted from natural talent and subsequent investment in education, training, and experience (Jay, 2004).

Based on the previous definitions, it differs in terms of human capital components, and in terms of their source innate or acquired characteristics. It agrees in a set of dimensions related to the mixture that brings together the following factors: knowledge, skills, competencies, experience, capabilities, and creativity. These dimensions are integrated and interrelated in dynamic harmony to create what is called human capital.

From the above and through some readings in the human capital literature, we can define human capital as the interactive mixture of knowledge, skills, experiences, and creative abilities - which are the product of innate and/or acquired characteristics - that are rooted in individuals and achieve an added strategic value.

Organizational capital; The codified knowledge, procedures, processes, goodwill, patents, systems, information system, databases, hardware, software, and culture. OC is established based on HC. Thus, the effectiveness of the OC is from or a reflection of the HC effectiveness. OECD referred to OC as “What is left after employees go home for the night”. In different words, it`s all nonhuman knowledge within the firm such as databases, strategies, routines and policies, and processes. “While firms do not own HC, Structural Capital belongs to the firm as a whole” (Hejase, Hejase, Tabsh, & Chalak, 2016). Stewart believes that culture is an extensive and valuable element of OC. Here are some suggested elements of OC: management

philosophy, culture, business processes, information technology, efficiency and effectiveness, renewal and development, systems and procedures, and atmosphere. OC includes the mechanism of and firm's structure in order to optimize intellectual outputs (Kim, Yoo, & Lee, 2011).

We conclude that organizational capital or structural capital is about all resources and processes that a firm use in order to achieve its missions and create value, it can include: systems, processes, procedures, technology, infrastructure, knowledge, culture, routines, policies, and even management mentality.

Relational capital; (structural or internal capital) includes strong and stable relationships with customers based on their satisfaction, repeat transactions, financial growth, and price sensitivity that can be used as indicators of relational capital. The difference between structural capital, relational capital, and human capital is due to the effect of relational capital on organizational value (Soheyli, Moainaddin, & Nayebzadeh, 2014). It refers to the value created through the relationships with customers, which contributes to current and future incomes. RC can include the following elements: customer satisfaction and loyalty, handling customers, customer orientation, market share, and distribution channels, image and brand, and direct distribution channels (Kim, Yoo, & Lee, 2011).

We can define relational capital as an output value created from the good relationships of the firm with its stakeholders, such as customers, suppliers, partners, and the community. This happens through access to new markets, customers, and resources, and most important gain trust and loyalty in the market. Which upgrades the firm's reputation, brand, customer loyalty, and networks of suppliers, partners, and customers. It can also include intangible assets such as patents, trademarks, and copyrights.

The three dimensions are interrelated and integrated and interacted with each other, HC can be developed and trained using the resources and processes of OC, and it can be reinforced by the trust and loyalty generated by RC. In different words, HC and OC have a direct relationship, as the resources and processes of OC are used to develop and train the HC. This can include things like investing in employee training and development programs, providing the necessary tools and technology for employees to perform their missions, and creating systems and procedures that streamline work processes and increase efficiency, and so on.

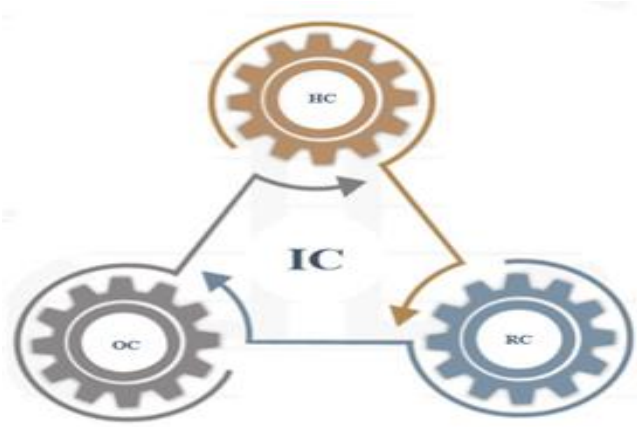
RC and HC also have a direct relationship, as the trust and excellent reputation generated by RC, can result in retaining and attracting new talented employees. Moreover, RC and OC are interrelated through the firm`s good relationship with stakeholders, which can open access to new opportunities, like new markets, customers, and suppliers. Furthermore, aligning the internal processes and systems with the needs of their stakeholders regarding the feedback they provide helps develop it in return. Such opportunities can help a firm to expand and grow, which in turn can reflect to increase in the value of its OC.

Overall, a wise firm can effectively manage these three capitals and align them with its strategic goals. These dimensions are composing a virtuous cycle, HC generates OC, in turn, OC can develop HC, OC generates RC and RC can reinforce OC, as well as the HC can improve OC and in return, RC can develop HC, As the quality and effectiveness of the OC and RC are

initially determined by the quality and effectiveness of HC. HC, OC, and RC can be integrated with several manners to create a cohesive, harmonize, and effective strategic performance, this contributes to aligning IC with the overall firm strategy and creating strategic value.

Figure 24 addresses the IC dimensions.

Figure 24: IC dimensions



Source: Elaborated by the researcher

III Intellectual capital: Measurement approaches & management processes

III.I Measurement approaches of intellectual capital

Whereas not possible to control and manage immeasurable assets, intellectual capital has been attracting the attention of researchers and practitioners, which emerged several measurement methods and approaches, which becoming less relevant and less suitable for measuring thus emerging continuous development.

Walsh in 1935 and Kiker in 1966 point out that the first attempt to measure the economic value of individuals was in the late 17th century by Sir William Petty, who tried to calculate the total value of the workforce to include it in the cash of total wealth. This was achieved by capitalizing the total wage bill (national income minus property income) at the market interest rate (Andria & Thanasis, 2009). According to Marshall in 1930, "While from an abstract and mathematical point of view, humans are taken for granted as capital, they cannot practically be treated as capital in the markets (Ziemowit, 2014).

According to Morgan (1998), measuring intellectual capital had its advantages for Skandia Assurance and Financial Services (the administrative costs have been reduced by 75% and the products have been increased by 400% over the last 6 years (Tseng & Goo, 2005). A balanced scorecard is a tool also to assess intellectual capital (Shih, Lin, & Lin, 2011).

In this context, Bontis (1998) suggested a framework to measure intellectual capital and its link with a firm's performance (Dombrowski, et al., 2007). Therefore, measuring a firm's performance is technically linked to the objectives to be achieved, in other words, the objectives of measuring performance differ according to the desired goals in each field (Piber, Demartini,

& Biondi, 2019). BSC is the main tool to achieve a balance in firm management (Faizova, Ivanova, & Pozhuieva, 2019).

One of the most challenging about the IC concept is to perform a valid measurement. We are presenting the following few models that have been frequently used in literature reviews.

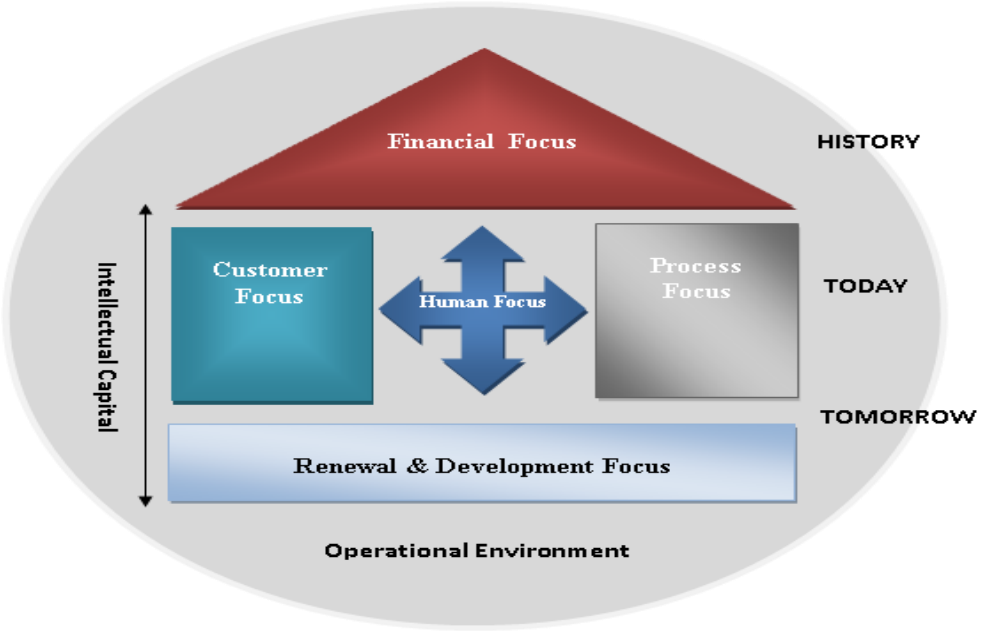
Skandia Navigator; Leif Edvinsson as director of Intellectual Capital at Skandia, developed a dynamic and holistic IC reporting model "the Navigator", s formed of key dimensions: Financial focus, Customer focus, Process focus, Renewal, and development focus, whereas the human focus dominates the center as a driver of the whole Skandia Navigator model.

Many firms have utilized Skandia's Navigator to assess the value of their R&D and patent processes, but its reliance on a balance sheet to determine a company's intangible assets (IC) results in neglecting crucial IC elements such as culture, organizational learning, and employee creativity that play a significant role in creating value. Also, some of the over 100 indices recommended by the Skandia model may contain incorrect assumptions. Such as employees being physically present at work and using computers does not necessarily mean that they are investing in their knowledge. Thus, Skandia's structural capital variables, including the number of computers, can be questioned. In essence, the Skandia Navigator requires to be more simplified and readjusted (Gogan, 2014).

According to (Edvinsson, 1997), the Skandia Navigator attempts to bring a spotlight to how a firm's roots are being nurtured in order to increase its long-term sustainability, it`s trying to put up a new balance between financial and non-financial issues. In addition to the balance between information on past financial performance, information about today, including human resources and processes, and about tomorrow's renewal and development, taking into account the operational environment. The Skandia Navigator model can be seen as a house. Whereas financial focus is the roof, customer focus and process focus are the walls, the human focus is the soul of the house (spiritual or non-physical essence), and renewal and development focus is the platform. With such a metaphor, renewal and development become the critical bottom line for sustainability.

Despite the similarities between Skandia Navigator and the balanced scorecard developed by Kaplan and Norton, Skandia Navigator performs the renewal and development dynamics in its layout, as well as the operational environment, which is an add-up to the firm's intellectual capital value. Moreover, Skandia recently has used the Navigator for individual performance appraisal, as well as rewards assessment. This makes it possible to have a balanced reward system emerging with a focus on financial and non-financial dimensions.

Figure 25: The Skandia Navigator Model



Source: (Edvinsson, 1997)

Balanced Scorecard; (Veltri, 2011) cited that in 2004, Kaplan and Norton "made official" the shift of the Balanced Scorecard (BSC) from a strategic management tool to an intangible asset management tool by presenting their interpretation of IC within the context of learning and growth. According to them, IC can be categorized into three parts: human capital (skills, talent, and knowledge of employees), information capital (databases, information systems, networks, and technology infrastructure), and organizational capital (culture, leadership, employee alignment, teamwork, and knowledge management). This categorization has puzzled some IC experts, as it differs from the traditional IC division into human, structural, and relational capital, which has seen a near-universal convergence in recent times. As a result, some IC scholars include the BSC in their measurement of intangible asset models.

We can briefly speak, that BSC is a strategic multidimensional performance management approach that can help as well to measure the IC performance by determining the strategic map that put the strategic goals from the BSC perspectives (Customer, Financial, Internal business process, and Innovation and learning perspective). What is important to mention, is that BSC is not designed specifically to measure intellectual capital, but it can be adapted to include intellectual capital metrics as one of the perspectives in the scorecard by incorporating metrics related to the various dimensions of IC into the scorecard perspectives.

Calculated Intangible Value (CIV); this method was presented by Stewart in 1997, and it has been used widely in international research. CIV assumes that only investments in physical capital can only result in average returns in an industry. Any higher returns are explained by a firm's use of intellectual capital. Thus, a firm's profits exceeding the industry average are seen as a result of its intellectual capital. The CIV method is based on a set of stages (Aho, Ståhle, & Ståhle, 2011):

1. Calculating the firm`s average pre-tax earnings for the recent three years.

2. Calculating the firm`s average year-end tangible assets for the recent three years except for the intangible assets.

3. Calculating the average pre-tax profit of the firms divided by the average assets, except intangible assets. This yields the firm's return on assets (ROA).

4. Calculating the industry average ROA for the recent three years which following the method`s background assumption is the amount of physical capital accessible to the firm, and the rest is the amount of intangible capital accessible to the company. If the firm`s return on physical assets is now greater than the average in the industry; c > d.

5. Calculating the firm`s excess return (e). This can be run by multiplying the industry average ROA (d) by the firm`s tangible assets (b). Subtract the excess return from pre-tax earnings (a); firm`s excess return: e = a- (d x b).

6. Calculating the firm`s after-tax excess return. This is done by calculating the three-year average corporate tax rate and then subtracting this number from 1. Then multiply it by the firm`s excess return. The resultant equation is now in the form: firm`s after-tax excess return = ((a-d) x b) x (1- firm`s average tax percentage) which, according to the method`s background assumption, is a result of the firm`s intellectual capital.

7. Calculating the net actual value of the after-tax excess return. Using the firm`s cost of capital as one suitable discounting factor and then dividing the firm`s after-tax excess return by the firm`s cost of capital. The net actual value of the after-tax excess return represents the firm`s intellectual capital value.

Value Added Intellectual Coefficient (VAIC); this model was developed by Pulic (1999), it includes: value-added capital employed (VACA), value-added human capital (VAHU), structural capital value added (STVA), and value-added intellectual coefficient (VAIC) (Nuryaman, 2015).

To calculate the (VAIC), we need to run a few steps as follows:

1. Calculating the Value Added (VA);

VA = OUT – IN
- OUT = Output: total sales and other revenue
- IN = Input: sales expenses and other costs (Not including personnel expenses)

VA also;

VA= OP + EC + D + A
- OP =Operating profit (operating profit)
- EC = Employee costs (personnel expenses)
- D= Depreciation (depreciation)
- A= Amortization

2. Calculating the Value-Added of Capital Employed (VACA); is the contribution rate of every CE unit to the VA.

VACA = $\frac{VA}{CE}$ { VA = Value Added, CE = Capital employed; available funds (derived from net income, and equity)

3. Calculating the Value-Added of Human Capital (VAHU); is the rate of VA from each one dollar invested in HC.

VAHU= $\frac{VA}{HC}$ { VA = Value Added, HU = Human Capital: personnel expenses

4. Calculating Structural Capital Value-Added (STVA); the ratio expresses how much SC is required to achieve one dollar of VA for a firm.

STVA= $\frac{SC}{VA}$ { SC=Structural Capital [VA reduced HC (VA-HC)], VA= Value Added

5. Calculating Value-added intellectual coefficient (VAIC); VAIC determines or evaluates a firm`s intellectual capability which is a crucial BPI (Business Performance indicator). VAIC is the sum of the previous three components:

VAIC = VACA + VAHU + STVA

III.II Intellectual capital management processes

The main goal of IC management is to upgrade the firm`s performance by identifying, measuring, analyzing, and maximizing the value of its IC through various activities (Evangelia, 2015). IC management is about the alignment process of IC with the firm`s strategic goal (Gogan, Borca, Rennung, & Sîrbu, 2015). The IC Management System is still developing with new lessons and replacing new practices and styles with new ones, and the movement is still in its beginnings facing several challenges (Harrison & Sullivan, 2006):

- There is no united definition of what is intangible and there is no common set of measures or actions in literature. Using a traditional theory of management: "If you cannot measure it, you cannot manage it." Until an adequate and extensive set of uniforms and intangibles value, will be difficult to manage this important component completely.

- Confusion about regulatory frameworks; During the early development of knowledge about luminous assets, a series of "organizational" frameworks have been developed to provide a better understanding of the phenomenon of intangible assets. These frameworks were formed within the context of different disciplines or schools of thought. Examples include Knowledge Management, Innovation, Human Resources, Legal Intellectual Property, and Intellectual Property for Business. Each regulatory framework is in the development of ideas and concepts within its own borders, but intangible assets management has now evolved widely as it is no longer possible within any single regulatory framework.

- There is no united framework for the management of intangible assets. We have not seen a comprehensive framework and a good scheme to describe the full definition and management of the entire group.

- Information is insufficient for better management practices of the full range of the firm`s intangible assets.
- Lack of practical financial framework to assist accountants, regulators, investors, and managers in the measurement, assessment, and disclosure of intangible assets.
- The lack of effective tools for the management of intangible assets.

Forming a strategic vision that integrates all three dimensions of intellectual capital within the firm is essential to creating, shaping, and updating the stock of IC. This involves both exploring and exploiting the capital, as well as measuring and disclosing it. The value of the firm's IC is established through a continuous, evolving process that emphasizes the ability to leverage, grow, and adapt the dimensions of IC (Khavandkar, Theodorakopoulos, Hart, & Preston, 2016):

IC exploration and exploitation; refers to the firm`s ability to use its IC effectively and efficiently to exploit the external sources of IC that contribute to creating added value.

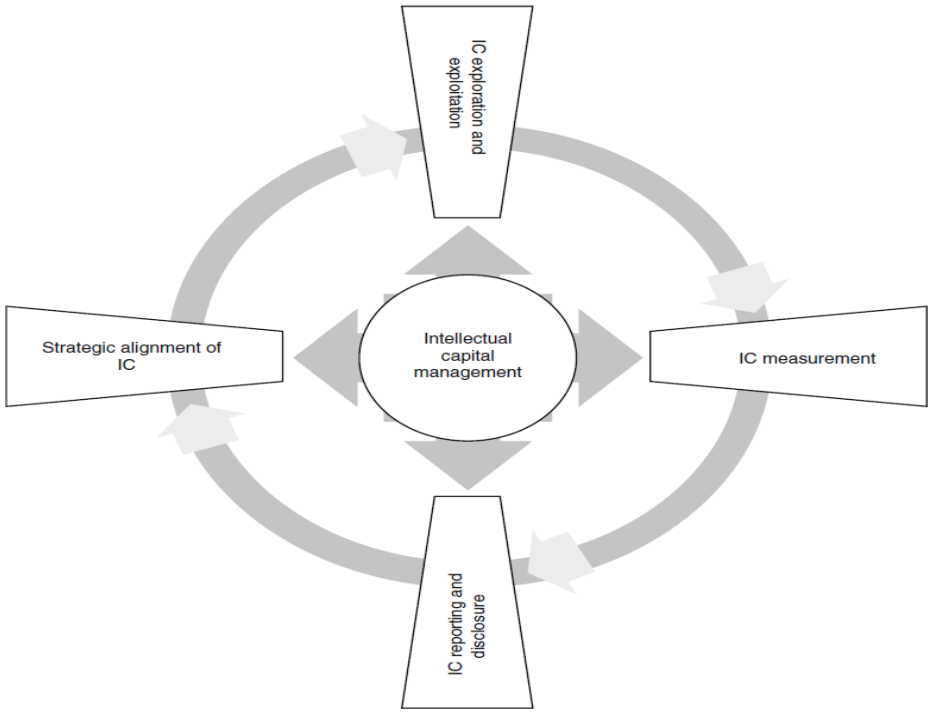
IC measurement; refers to practices made by managers to convert the internal intangible values of a firm into quantifiable metrics, and present both financial and non-financial variables in a way that is understandable to the market

IC reporting and disclosure; refers to the practices which aim to reduce the gap in information between key stakeholders and firms about the intangible values of IC and can be customized to meet the specific information requirements of different groups.

Strategic alignment of IC; refers to the set of practices to evaluate the value of the firm`s IC in its industry and ecosystem context, establishing strategic goals for IC management and aligning them with the strategic level.

Figure 26 illustrates IC management processes as a cycle or windmill of interrelated sets of practices: strategic alignment, exploration and exploitation, measurement, and reporting of intellectual capital.

Figure 26: Interrelated IC management process



Source: (Khavandkar, Theodorakopoulos, Hart, & Preston, 2016)

Chapter III: Theoretical framework of intellectual capital and its effect on strategic performance

IV Intellectual capital from a strategic perspective

IV.I Intellectual capital effect on strategic performance

It has become common in the business environment that knowledge and the production of ideas are crucial factors in the success of any firm (Omerzel, 2010). Innovation management is also one of the factors affecting firm performance (Kallmuenzer & Scholl-Grissemann, 2017). Organizational innovation is an intermediate variable between individual and organizational factors and the performance of SMEs, and the role of mediation is strong in the indirect relationship between organizational factors and their impact on firm performance (Prange & Pinho, 2017). Therefore, the more alignment between innovation management elements and processes, the higher firm's performance (Do, Mazzarol, Soutar, Volery, & Reboud, 2018).

Penrose (1959) argues that the firm's ability to grow can be explained by its ability to create knowledge (Omerzel, 2010). The high commitment to organizational innovation practices improves the firm's performance, as it is an investment whose results do not appear in the near term, not less than three years from the beginning of the application of organizational innovation practices (Kallmuenzer & Scholl-Grissemann, 2017). The innovative capability or organizational innovation of SMEs in activities that lead to changes in the structure, strategy, and systems of the firm, thus it is vital and critical to direct those resources and transfer them toward innovative products and services (Prange & Pinho, 2017).

Developing internal capabilities is more important than financial resources to develop a firm's competitive advantage (Maranto-Vargas & Gómez-Tagle Rangel, 2007). According to RBV with higher resources and capabilities the firm will exceed by achieving a higher competitive advantage than its competitors (Lee & Marvel, 2009). The RBV also emphasizes that products are not the primary source in achieving a competitive advantage, but rather the special and distinctive resources and capabilities of the firm that achieve a competitive advantage and high performance (Kallmuenzer & Scholl-Grissemann, 2017). Resources such as infrastructure and skills are valuable, rare, non-imitable, and non-substitutable, allowing the firm to uniquely compete and achieve the highest performance (Harrigan, et al., 2010). Having these resources is not sufficient to achieve high performance, competitive excellence can be achieved through the distinct capabilities that can use these resources effectively (Hollender, Zapkau, & Schwens, 2017). These resources should be integrated with other organizational resources to create distinctive capabilities which are difficult to codify (Yang, Xun, & He, 2015).

The literature on information systems indicates that the RBV is used in the analysis of information technology as a resource of the firms' added value. The more use, the more increased development of the institution's distinctive and unique capabilities in the application of the firm's information technology (Ruivo, Oliveira, & Neto, 2014).

The resource-based view (RBV) also was used to focus on information technology as a firm resource and e-business capabilities as critical factors in achieving competitive advantage. Where the resource-based view is based on two assumptions; the first is the heterogeneity of the resources (each firm has its resources), and the second is the resource immobility - this movement contributes to the heterogeneity of resources - and these differences may be long-term. The strategic success of the firm depends on the mix of resources and distinctive

competencies that form within the firm (Raymond, Uwizeyemungu, Fabi, & St-Pierre, 2018). In his study, Anthony (2017) a result that the firm resources and capabilities have a beneficial impact on the firm's performance, and this is consistent with the RBV which explained the performance from the perspective of the firm resources, as well as, the heterogeneity of resources affect the strategies adopted by the firm, while it will achieve a competitive advantage (Flynn, 2017).

Firms should build a network with other firms, research firms, suppliers, and customers, to facilitate knowledge exchange and resource mobilization. This type of network is one of the resources of firms that contribute to reducing costs, increasing market share, improving competitive advantage, and raising profitability, and as a result achieving high performance in the firm (Chandrashekar & Bala Subrahmanya, 2017).

RBV indicated performance in terms of resource collection that the firm owns and controls. Where is considered the firm’s performance is from the inside-out, this perception came on an equal footing with the work of Penrose (1959), Wernerfelt (1984), and Barney (1991) (Flynn, 2017) The effect appears in the firm's performance as a result of resources that can be asset and/or capabilities that are used to create special and distinctive capabilities (Joensuu-Salo, Sorama, Viljamaa, & Varamäki, 2018).

Firms seek to achieve higher levels of performance in the long term, so, it is invested in qualifications, abilities, skills, and practices that strengthen staff expertise (Krausert, 2018). As intellectual capital is an intangible asset that is associated with human and structural capital, it leads to higher performance (Parshakov & Shakina, 2018). The common belief is that intellectual capital affects positively the firm's performance (Xu & Wang, 2019). Through the knowledge of individuals and of human capital, knowledge generated on social relationships (social capital) and the knowledge contained in the procedures, processes, and systems (organizational capital), which is a vital entry point in the organizational learning process through exploration and exploitation of knowledge (Brockner, et al., 2006). To sustain the firm’s performance, it is necessary to invest and build upon core competencies to create knowledge value (Teo, Reed, & Ly, 2014). Human capital is the most important element in intellectual capital, Human capital is the main basis for the creation of other (Teo, Reed, & Ly, 2014) elements of intellectual capital, and affects a firm’s performance (Shih, Lin, & Lin, 2011). This performance can be expected based on the managerial team, where the characteristics of the firm's performance outcome from managers, attitudes, skills, capabilities, and personality traits (González-Loureiro, Dabic, & Puig, 2014). Depending on the knowledge-based view, human capital is the main stone and it has indirect links with the firm’s performance unless through structural capital (Dabic, González-Loureiro, & Furrer, 2014). So, remaining the individuals who have the human capital is critical in synergy, integration plan, and enhancing the firm’s performance (Younge, Tong, & Fleming, 2015). Individuals through their human capital can improve a firm’s performance where it is difficult to determine that contribution, and what constitutes also a challenge that these individuals can leave the firm unlike physical assets (Belenzon & Schankerman, 2015).

Besides human capital, distinctive human resources can contribute to the acquisition and improvement of social capital as well (Lumpkin, T., & Wright, 2011). The resource and

knowledge-based view as a theoretical framework contributes to the evolution of the theoretical framework of intellectual capital. The literature on intellectual capital provides a comprehensive vision of value creation under the strategic management orientation (Yitmen, 2011). The knowledge-based view is an extension of the resource-based view, where KBV provides a strong logical base to explain the contribution of intellectual capital to strengthen the firm's performance (Ruiz, Sanchez De Pablo, Muñoz, & Peña, 2018). In this context, organizational knowledge is a strategic resource, furthermore, Nonaka (1994) and Drucker consider it one of the production elements (Claver-Cortés, Zaragoza-Sáez, & González-Illescas, 2018).

IV.II. Intellectual capital effect on competitive advantage

A firm’s resources are useless unless they are used efficiently and effectively through firm capabilities (Merrilees, Rundle-Thiele, & Lye, 2011). According to this point of view, the competitive advantage results from the uniqueness, distinctive and heterogeneity of the firm's resources, and how they are used (Reisinger & Lehner, 2015), the competitive advantage is to create higher than competitors in the same sector of economic value (Qosasi, Permana, Muftiadi, Purnomo, & Maulina, 2019).

There is a range of characteristics that can contribute to the achievement of competitive advantage or what are known as firm-specific advantages, the unique capabilities of the firm can focus on marketing, distribution systems, and innovative capabilities, among others (Lee & Marvel, 2009) The E-CRM capabilities are among the capabilities that achieve important advantages for the firm, which are linked to the customer, through which the customer services are improved and their loyalty, increased in personalization and market awareness as well as reducing marketing costs, sales generation and improvement in general profitability (Harrigan, et al., 2010) These capabilities are developed to improve knowledge integration to the market, customers and competitors as well as the development and increasing the firm competitive performance (Raymond, Uwizeyemungu, Fabi, & St-Pierre, 2018). Among these capabilities, marketing capabilities reflect the firm's ability to understand the market and to use that knowledge, skills, and resources to meet market needs, which significantly affects firm performance among other capabilities (Jin, Jung, & Jeong, 2018).

The knowledge-intensive firms in the context of a knowledge-based economy based on knowledge as a source of competitive advantage achieve higher than the competitors' performance, by integrating that knowledge and applying it effectively more than competitors, from the perspective of the resource-based view, which assumes that internal resources are the crucial source of sustainable competitive excellence (Teo, Reed, & Ly, 2014). RBV is the predominant approach in strategic management (Bagis, Karaguzel, Kryeziu, & Ardic, 2019). Intellectual capital is a strategic resource, which affects the firm's performance and innovative solutions, the management of this crucial asset is vital in achieving a competitive advantage (Yitmen, 2011). Intellectual capital is a link between human resources management practices and the performance of the firm (Kong & Thomson, 2009).

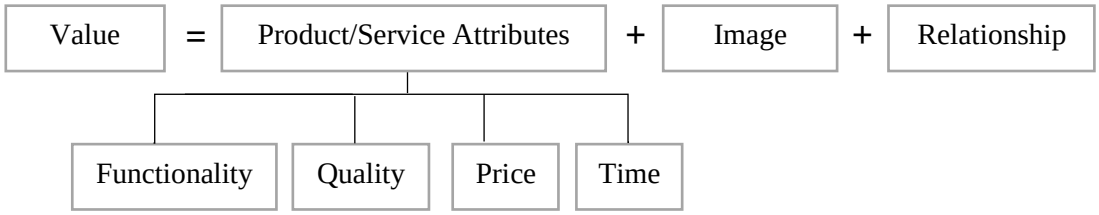
It`s agreed that achieving competitive advantage involves creating value for customers by offering products or services that meet their needs better than those of competitors. This can be

accomplished through various means such as innovation, differentiation, quality, and customer service. In this context, we are adopting the "Customer Value Model" from Kaplan & Norton for demonstrating the impact of intellectual capital on achieving a competitive advantage. This also perspective aligns with Porter's competitive strategies.

(Kaplan & Norton, 1996) have proposed an equation for customer value that can help measure it as well. This proposition outlines the attributes offered by supplying firms with their products and services, aimed at generating loyalty and satisfaction among targeted customer segments. The value proposition is crucial for understanding the motivators of the basic metrics of satisfaction, acquisition, retention, market, and account share. Although value propositions may differ among industries and within market segments, these attributes can be divided into three categories:

- Product/Service attributes
- Customer relationship
- Image and reputation

Figure 27: The Customer Value Proposition



Source: (Kaplan & Norton, 1996)

(Porter, 1998) has structured three generic strategies for achieving competitive advantage, listed below:

Overall cost leadership; In the 1970s, a cost leadership strategy became more widespread due to the widespread understanding of the experience curve concept. This strategy involves implementing a set of policies to achieve the goal of being the lowest-cost producer in an industry. To achieve this, companies must build efficient-scale facilities, continuously search for cost reductions, have strict control over costs and overhead, avoid customers that are not profitable, and minimize costs in areas such as R&D, service, sales, advertising, etc. Effective cost control requires a significant amount of management attention. The overarching aim of this strategy is to have a lower cost compared to competitors, but it is also important to maintain quality, service, and other aspects of the business.

Differentiation; this strategy focuses on making the firm's product or service unique and highly valued in the industry. This can be achieved through various means such as innovative design, a strong brand image, advanced technology, exceptional features, superior customer service, a comprehensive dealer network, or other attributes. The best approach is to differentiate the firm along multiple dimensions. It's important to note that while cost is not the primary focus of this strategy, it still cannot be ignored. If this is successfully performed, it can result in higher-than-average returns in an industry. This is because differentiation creates a strong position for dealing with the five competitive forces, although it does so in a different manner than cost

leadership. By creating brand loyalty among customers, differentiation protects against competition and reduces sensitivity to price changes.

Focus; This strategy involves focusing on a specific customer group, product segment, or geographic market. The focus strategy differs from the low-cost and differentiation strategies in that it is specifically designed to serve a narrow target effectively and efficiently, while the other two strategies aim to achieve their goals on a wider industry level. As a result, the firm can achieve either better differentiation by meeting the specific needs of its target, lower costs in serving this target, or both. Although the focus strategy does not achieve low cost or differentiation for the entire market, it does for the narrow target it is focused on**.**

To align the IC effect with the Customer Value model above, and the generic competitive strategies of Michael E. Porter (1998), we relied on these determinants of competitive advantage;

Cost and financial perspective; (Nuryaman, 2015) advocates that intellectual capital can have a positive impact on a firm`s financial performance. Firms with a highly skilled and dedicated workforce (human capital) will improve their productivity and efficiency, thereby increasing the firm's profitability. The structural capital, or the firm's systems, structures, strategies, and culture, also play a crucial role in meeting market demands and achieving the firm's goals. A strong structural capital will greatly aid in reaching these targets, including improved profitability (return on assets, return on equity, and earnings per share). Nuryaman also stated in his research that all IC dimensions are positively correlated with ROA.

From the financial side of a firm's performance, it is known that human capital has an important impact on financial performance (Reed, Lubatkin, & Srinivasan, 2006). The elements of IC integrate each other in each level within the firm and as a result enhance the firm's performance (Fernández-Pérez de la Lastra, García-Carbonell, Martín-Alcázar, & Sánchez-Gardey, 2017).

Flexibility; the firm's capabilities allow the firm to create, modify, and expand new resources to have organizational agility to keep up with dynamics and complex environments, which are a crucial factor in achieving competitive heterogeneity, these capabilities have been described as invisible assets, organizational capabilities including skills and routines, which when developed appropriately contribute significantly to improved performance through the development of management skills (inter and intra organizational), risk management, cultural issues, negotiating skills and learning experiences (O'Dwyer & Gilmore, 2018). The immobility of dynamic capabilities is related to firm performance and can change the firm combination or the set of resources, operations, routines, and competencies (Kocak & Abimbola, 2009). So, firms must develop their capabilities to acquire, configure and utilize organizational resources, each in a specific organizational context to achieve valuable performance (Harrigan, et al., 2010).

IC can affect a firm's flexibility in different ways, such as HC can increase the firm's flexibility through the ability to adapt to changes in the market. OC including efficient processes, technology, and organizational structure, can improve a firm's flexibility by allowing for quick decision-making and response to market changes. RC encompassing relationships with

customers, suppliers, and government, can enhance a firm's flexibility by providing a better understanding of customer needs and a supportive business environment.

Quality; The IC affects product quality, a firm's IC, which involves knowledge and skills, is what enables it to meet customer demands and respond to technological opportunities, this includes technical knowledge, relationships, and machines. Competitive advantage can be achieved through the "quality force" when the previous factors are effectively performed. However, different companies may prioritize different dimensions of IC, with some prioritizing human and organizational capital, while others may focus on improving value creation and quality productivity through relational capital (Jamal, 2019).

IC affects the quality of a firm; whereas HC, including the skills and experience of employees, directly affects the quality of products and services, the more qualified and motivated employees are more likely to produce effectively with high quality. OC consists of efficient processes and systems and establishing clear standards and guidelines for production. An efficient and well-designed process ensures consistent and high-quality output. RC includes relationships with customers, suppliers, and the government which provides adequate regulations, and provides valuable feedback, and access to high-quality raw materials to improve and promote product quality.

Delivery and customer perspective; the firm`s intangible assets, such as brand identity and relationships with customers, suppliers, and government, influence the competitive advantage (relational capital). Although, in a stable competitive environment, competitive forces are the primary factors that determine industry-level profits. In the rapidly evolving knowledge economy, understanding how firms gain an advantage is more complicated because the influence of owning and utilizing specific assets, particularly intangible assets, offers a clearer insight into their profits (Teece, Pisano, & Shuen, 1997). IC of the firm can affect customer value creation through different aspects besides the delivery as a competitive determinant.

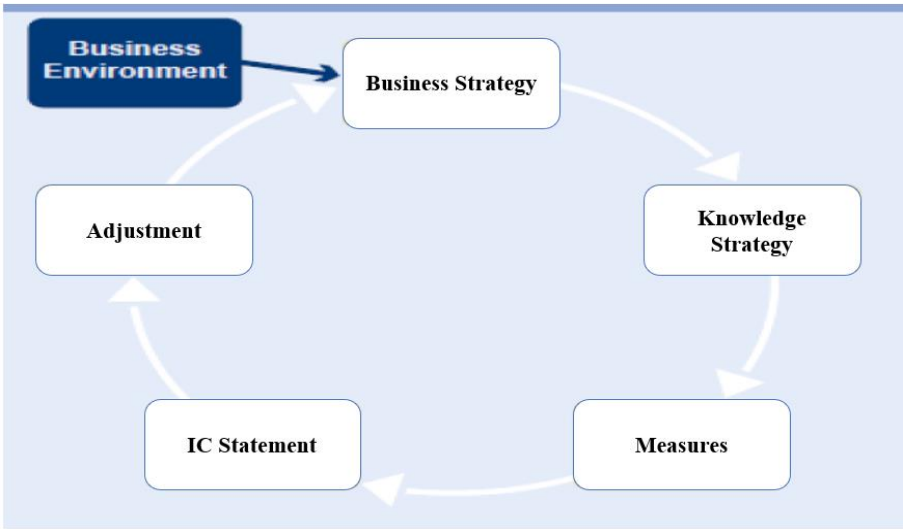
HC is crucial in delivering high-quality products and services to customers. Well-trained and motivated employees are more likely to provide excellent customer service and delivery. OC including processes, systems, and technology used by a firm, can impact delivery by providing efficient and reliable methods for getting products to customers, OC can also play a significant role in providing customer value by enabling the firm to produce high-quality products at a lower cost, making them more affordable for customers. RC, can impact delivery and customer value by fostering good communication and collaboration, strong and excellent relationships with suppliers can help ensure the timely delivery of raw materials, while positive relationships with government agencies can facilitate smooth and efficient delivery of products, the excellent relationships with customers can lead to valuable feedback, allowing the firm to better understand and meet customer needs, which in turn can improve customer value, here we the CKM can be very crucial for effective use and of this feedback.

IV.III. Intellectual capital integration with strategic management models

The relationship between strategy and a firm`s performance depends on the strength of resource-based capacities and/or the alignment of the strategy to current capacities (Branzei & Vertinsky, 2006). Performance can be influenced by low cost and increased profitability (productivity) when benefiting from experience (Hollender, Zapkau, & Schwens, 2017).

According to (Ricceri, 2008)the IC is integrated with the firm's "strategy cycle", it involves business strategy, knowledge strategy, measures, IC statements, and adjustments. The knowledge strategy stems from the business strategy and aims for long-term success. The business strategy outlines the firm's future actions in the market and is created by considering the opportunities and threats existing in the business environment considering the firm's vision. To develop the knowledge strategy, managers need to ask crucial questions such as: What factors led to the firm's past success? What intellectual capital is required to perform business strategy? How should the strategy be developed considering customers and competitors? Which dimension of the IC is vital for achieving competitive advantage?

Figure 28: The strategy cycle



Source: (Ricceri, 2008)

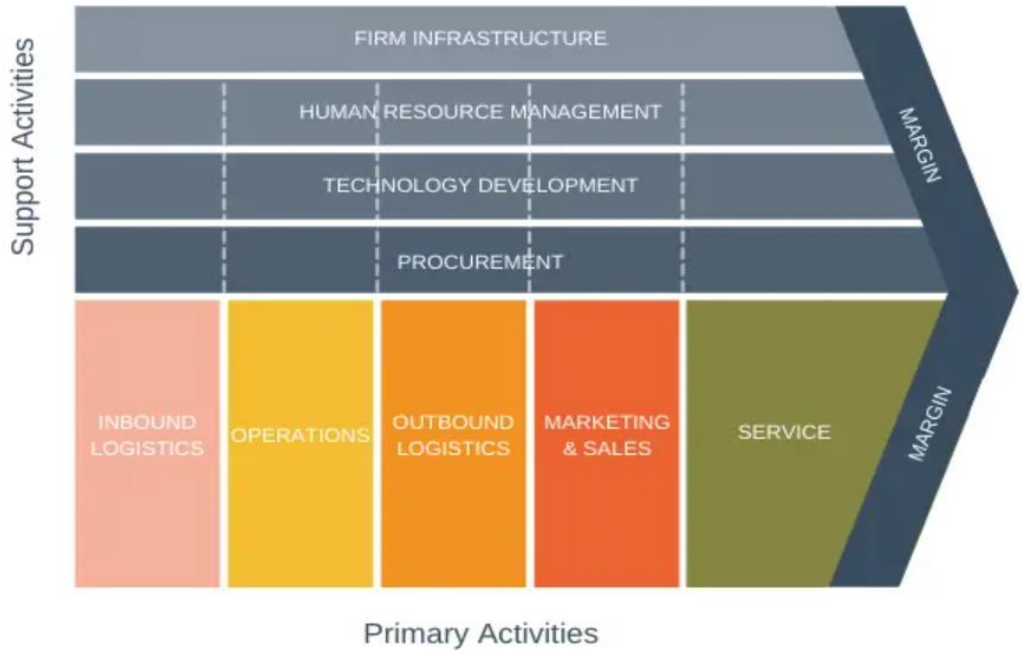
Strategic management models are frameworks and approaches used to identify firms` objectives and develop plans to achieve them. In this study, we are analyzing the IC integration into some commonly used strategic management models such as the Blue Ocean Strategy, and the value creation chain of Porter, which can help firms to better understand the value and impact of their IC on their overall strategy and outperforming.

V. Aligning IC with Value Chaine

The value chain was proposed by Michael Porter, the activities in this chain are primary activities and support activities; the primary includes the continual manufacturing processes, marketing, and after-sales services (inbound logistics, operations, outbound logistics, marketing and sales, and service). The support activities include (technology development, HRM, procurement or sourcing, and infrastructure systems for planning, finance, quality, information

management, etc.) (Porter, 1998). The value chain analysis outlines the various tasks performed by the firm and associates them with its competitiveness. The concept of "Margin" refers to the profit margin attained, which is based on proficiency in managing the interrelation between all activities within the value chain. In different words, the firm can offer a product/service for which the customer is prepared to pay a higher price than the total costs of all the value chain activities (Recklies, 2023).

Figure 29: The Value Chain



Source: (Porter, 1998)

The value chain has become increasingly popular in the economy of knowledge, with the IC framework, particularly because of its emphasis on customer capital. Whereas, the focus is on the design phase, product development, manufacturing, and marketing/sales phases by incorporating input from suppliers, distributors, and customers into the new product development process. Feedback from distributors, who are more attuned to customer complaints and needs, has been crucial in enhancing customer satisfaction and building trust, leading to greater market success as the product is developed with user needs in mind. Even in traditional goods manufacturing industries, value-chain has shown to be highly beneficial, both in terms of introducing a superior new product and boosting customer loyalty (Al-Ali, 2003).

IC can play a crucial role in several elements of Porter's value chain model:

Inbound Logistics; the firm's reputation for quality and reliability can affect its ability to negotiate favorable terms with suppliers and partners, which in turn can impact its inbound logistics costs. Moreover, excellent relationships can help the firm provide inputs with good quality, in different words, relational capital can play a vital role.

Operations; Strong and effective human capital can increase productivity and efficiency in a firm's operations, while the presence of intellectual property such as patents can provide a

competitive advantage by preventing others from copying its processes or products. Furthermore, organizational capital can be a significant source of firm value through its elements such as (supportive culture, management philosophy, organizational learning processes, routines, procedures, etc) which can significantly make the firm operations effective and more efficient in order to achieve the strategic goals.

Outbound Logistics; the value chain is a system, and the output quality depends on the quality of inputs and the effectiveness of operations. A well-established brand can increase customer loyalty, making it easier for the firm to sell its products and reducing the risk of price wars with competitors, here the effect of relational capital and organizational capital is crucial through the focus on the demand side of the supply-demand equation and the process of storing and moving goods to the final customer, also focusing on the effectiveness of these steps order fulfillment, packing, shipping, delivery and customer service related to delivery.

Marketing and Sales; The strength of a firm's IC can significantly impact its marketing and sales efforts, making it easier to attract new customers and retain existing ones: A strong brand in the market and brand reputation can attract customers and increase customer loyalty, making it easier for a company to sell its products or services, intellectual property, patents, trademarks, and copyrights can give a firm a competitive advantage and help to protect its products or services from being copied by competitors. Customer relationships: strong firm relationships can lead to repeat business and positive word-of-mouth, which can help to drive sales and attract new customers, also, strong human capital and effective organizational capital lead to good quality products and services and unique marketing tools and sales efforts.

Service; there are several ways in which IC can impact a firm's services factor, such as the network or relationships of partners, suppliers, and customers can provide valuable resources and help to improve the quality and delivery of its services. Processes and systems for delivering services can help to improve efficiency, reduce costs, and increase customer satisfaction.

Data and analytics: A company's data and its ability to analyze it can provide valuable insights into customer needs and behaviors, which can help to improve its services and increase customer satisfaction. Customer knowledge management and a strong reputation for customer service can result in higher levels of customer loyalty, and after-sale services, reducing the risk of losing business to competitors.

Therefore, the positive effect of IC is rooted in all the firm`s activities and processes, especially the strategic aspects, according to the value chain elements.

VI. Aligning IC with Blue Ocean Strategy

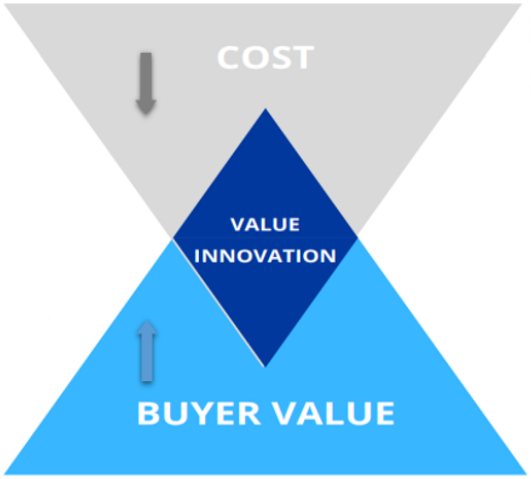
According to (Kim & Mauborgne, 2004), overperforming competitors are not guaranteed to maintain in overly saturated markets. The true success is to create blue oceans with unknown markets. Blue oceans represent undiscovered industries and unexplored markets that have yet to face competition. In these markets, demand is generated rather than disputed. There is significant potential for rapid and profitable growth. The blue ocean has the following characteristics: Creating unknown markets and opportunities to create demand instead of searching for it, which makes the balance of competition tilt in favor of the creator firm in terms

of creating value and reducing costs, and harmonizing the firm's activities and systems to achieve diversification and cost reduction (Kim & Mauborgne, 2004).

Blue ocean or market-creating strategy is about creating and capturing new markets, we are addressing the Sequence of Blue Ocean Strategy creation and how can IC be aligned with it in order to achieve the firm's strategic vision.

Value Innovation involves pursuing both differentiation and low cost at the same time, resulting in an increase in value for both the firm and its buyers. This concept, developed by Chan Kim and Renée Mauborgne, forms the basis of a market-creating strategy. The value a buyer receives is calculated by deducting the price from the utility, while the value a firm generates is determined by deducting its cost from the price of its offering. Only by aligning the elements of utility, price, and cost can value innovation be achieved. Costs are reduced by eliminating and minimizing the elements that drive competition in an industry. In contrast, the value for buyers is increased by elevating and introducing elements that have never been offered in the industry (Kim & Mauborgne, 2005). The figure below addresses this concept.

Figure 30: Value Innovation: The Cornerstone of Blue Ocean Strategy

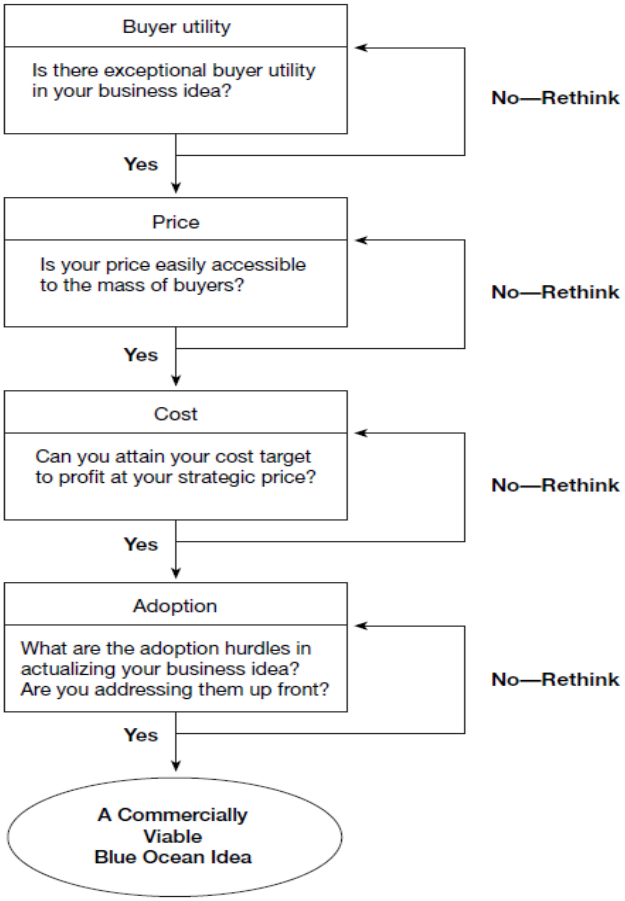


Source: (Kim & Mauborgne, 2005)

The focal point for creating the blue ocean is to create a benefit for the buyer. If this benefit is not achieved, then the blue ocean does not exist. Therefore, two ways to run; either setting aside the idea or re-think it tills confirming the positive answer which is commercially viable (Kim & Mauborgne, 2005).

The more aligned firm`s system of innovation, utility, price, and cost activities the more value innovation is achieved, whereas. The Blue Ocean strategy can be created and sustained as a result of the effectiveness of whole-system approach alignment and integration.

Figure 31: The Sequence of Blue Ocean Strategy



Source: (Kim & Mauborgne, 2005)

The Blue Ocean strategy is about coming up with new value innovation (creating an unknown market and making the competition irrelevant because the creator firm set the competition rules). IC can be a crucial source for creating value innovation by eliminating and reducing the industry factors that rise costs and providing unique and innovative value propositions to buyers.

HC is a crucial source that a firm depends on to create a blue ocean strategy, each dimension of HC has a significant effect on pursuing the Blue Ocean strategy through identifying new market opportunities, developing new products or services, upgrading R&D projects, creative thinking can help the firm creating new value innovation and develop unique products which meet the market needs proactively (predicting and creating new markets and customer needs does not even exist and make it viable for customers to buy), moreover, performing a new business model. OC is also a vital infrastructure for establishing and fostering the Blue Ocean, a firm with a strong patent portfolio, supportive managerial philosophy, and hierarchy, and a motivated and creative work environment is more likely to establish and sustain blue ocean and its competitive advantage. RC is as well plays an important role in Blue Ocean's strategy in several ways such as, investing in their relations with all stakeholders, strong reputation, trust and loyalty also can help to open new opportunities to make Blue Ocean's strategy fulfilment much more flexible. Briefly saying, IC embraces and interrelated with the firm strategic vision by adopting the Blue Ocean strategy. IC is a crucial source for the firm to achieve a dynamic transition to the blue ocean.

Conclusion

This chapter discussed the theoretical framework of IC and focused on the strategic perspective. Also analyzed the IC effect on strategic performance depending on several strategic approaches and methods, to reach this objective we adopted the BSC as strategic management and measurement tool, the RBV and organizational learning as core strategic approaches, Porter`s Value Chain and the Blue Ocean strategy which the IC very rooted in its activities and embraces its strategic vision.

The firm should invest and strengthen core competencies as a crucial source of sustainable competitive excellence. Core competencies are linked and lie behind the firm's ability to integrate intangible resources (skills and technologies) and to allow the creation of a unique and distinctive value to customers.

We have analyzed the effect of intellectual capital on strategic performance from the main dominant strategic frameworks such as RBV, BSC, Competitive advantage Forces, and dynamic capabilities approach. These have been chosen because they represent “a fairly linear development” in the efforts to understand the determinants of industry profitability and competitive position.

We addressed the main IC measurement approaches, what cannot be measured cannot be managed, as famously Peter Drucker said. Moreover, we addressed an IC management model which explains and highlights that the processes of managing IC are in a continuous dynamic cycle that stimulates the movement of a “windmill” which can be affected by the organizational environment as well. Furthermore, we have analyzed the integration of IC with the firm strategy cycle, and the strategic vision through the Value Chain and Blue Ocean strategy.

We have concluded that IC is a crucial source for firm success, and value creation and has a significant effect on strategic performance. We believe the literature framework needs to be studied and analyzed deeper to fill the existing gaps such as the measuring approaches and even the strategic approaches about how exactly IC can affect the strategic performance and achieving the firm vision.

Chapter IV: Empirical study– Data analysis and results discussion

Chapter IV: Empirical study– Data analysis and results discussion

Introduction:

After addressing some of the most important theoretical frameworks of intellectual capital and strategic performance, as well as the effect of intellectual capital on strategic performance according to the litterateur reviews. This chapter intends to analyse and discuss the empirical results by investigating empirically the effect of IC on strategic performance in Condor Electronics- Bordj Bou Arreridj, by using ANOVA regression analysis to test statistically our hypothesis, and descriptive statistics of the dependent and the independent variable used in this study.

In order to achieve this, this chapter has been organized into three sections: The first, addresses the firm of our empirical study ``Condor Electronics- Bordj Bou Arreridj``, the second, handles the descriptive statistics according to the study respondents and normal distribution test, the third, handles with the hypotheses testing and results discussion.

I. Introducing Condor electronics

Condor electronics (Joint-stock company) is a company specializing in the manufacture of: (Electronic equipment and home appliances, computers, agri-food, packaging, construction materials, and international trade.), which has enabled to manage a large volume of businesses and projects, products involving a whole set of leading-edge technologies with a level of exceptional quality.

Condor Electronics, which was created in 2002 with a share capital of 4,277,000,000.00 DZD, is the largest major subsidiary of the Condor Group. It specializes in the manufacture and marketing of electronic equipment, appliances, and photovoltaics.

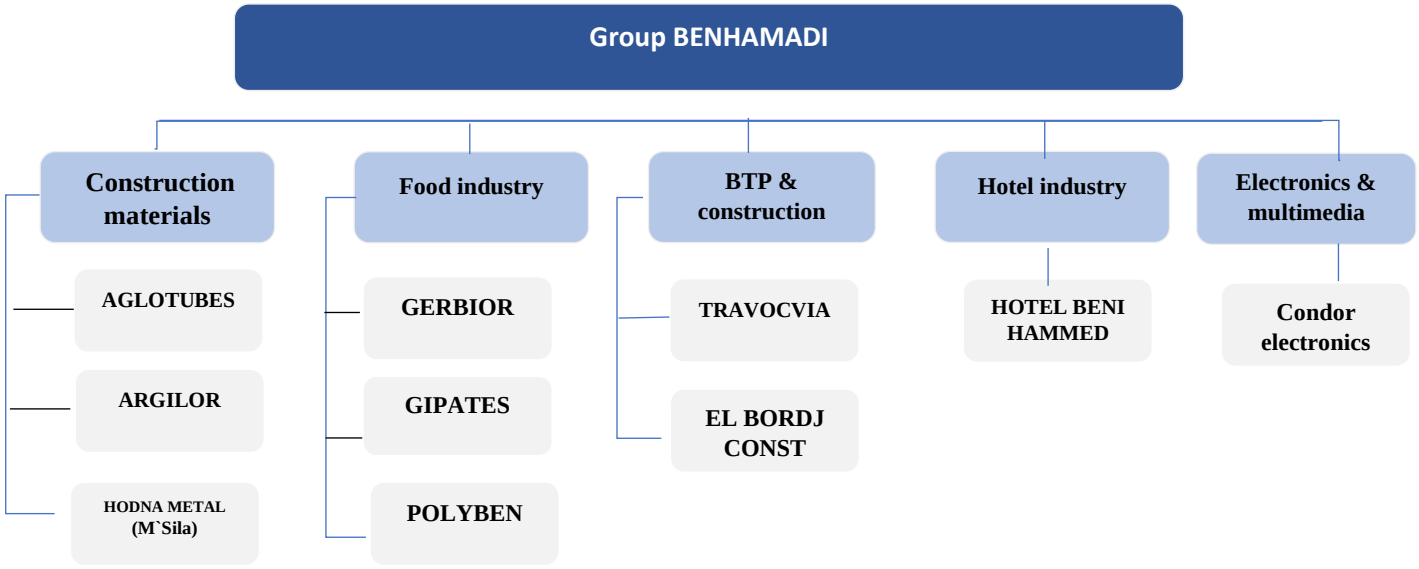
The tremendous success that Condor`s products have on the Algerian market and well beyond its borders, is indicative of the very high quality of manufacture and the effectiveness of its devices, which can now make the pride of Algeria, and this, at the dawn of its accession to the WTO (World Trade Organization).

The success of Condor rests mainly on the human factor, a key element of its approach, these latter have been invested with autonomy such that they can only enhance and develop their professional skills. The enthusiasm and the total involvement of each one in the service of the company -and this, in the same team spirit- has contributed to achieving the goals, the extension of the products range to always more innovative ones, which provide more comfort, satisfaction, ease of use and security. Condor`s customers have been able to assess all of that and return it well by trusting the company even more.

It was originally a small business of trade in foodstuffs and transport, founded and shaped by the head of the family, El Hadj Mohamed Taher Benhamadi. Thanks to its business reflexes, commercial spirit, and an acute sense of creation, El Hadj Mohamed Taher, traced the first track that led to the creation of the Group Benhamadi.

Today, the group represents one of the Algerian companies conglomerates most powerful and active in the economic sphere of the country. It operates in various fields of activities and displays results worthy of being cited as an example (http://www.condor.dz/, 2022).

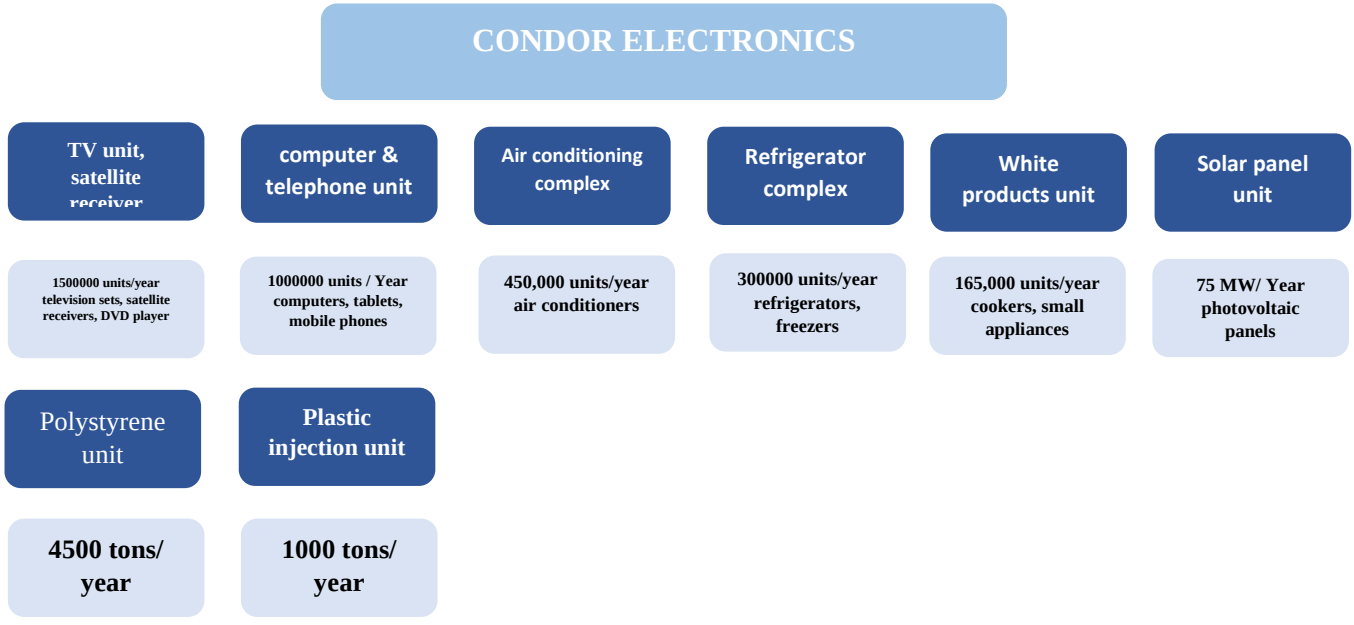
Figure 32: Group Benhamadi



Source: (http://www.condor.dz/, 2022)

Condor electronics: is a company specializing in the manufacture of electronic equipment and home appliances and computers. With a root in diversity, Condor electronics is active in the market of household equipment. This is explained by the importance of industrial investments, which allowed it to handle a large volume of businesses and projects.

Figure 33: Condor Electronics` Units



Source: (http://www.condor.dz/, 2022)

Condor Electronics is present in 12 countries, on 3 continents, with an expansion plan targeting 35 countries. The figure 34 shows these countries.

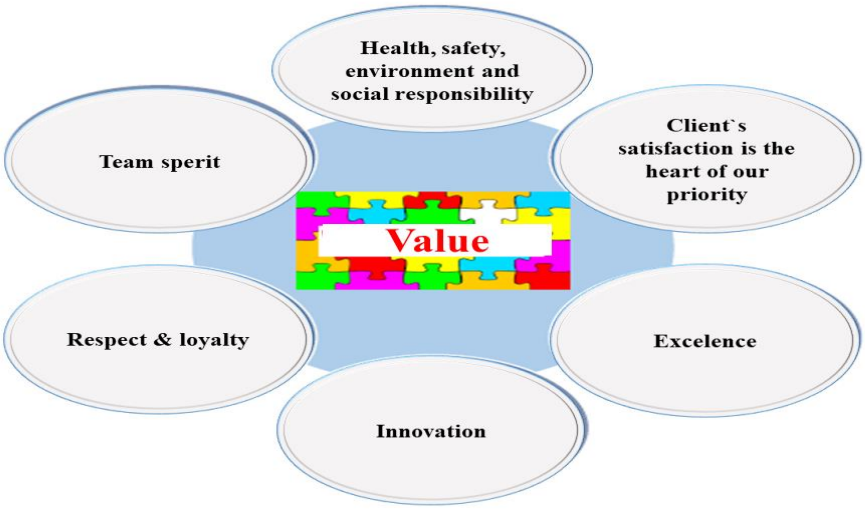
Figure 34: Condor Electronics` global markets

Source: Elaborated by the researcher using Canva based on document from Human Resources department

II. Condor Electronics: Vision and value creation principles:

Condor electronics looking to become the leader in its markets at the national level (preferred brand of Algerians). Condor electronics depend on a set of integrated principles to create value which are the following.

Figure 35: Principal values of Condor Electronics



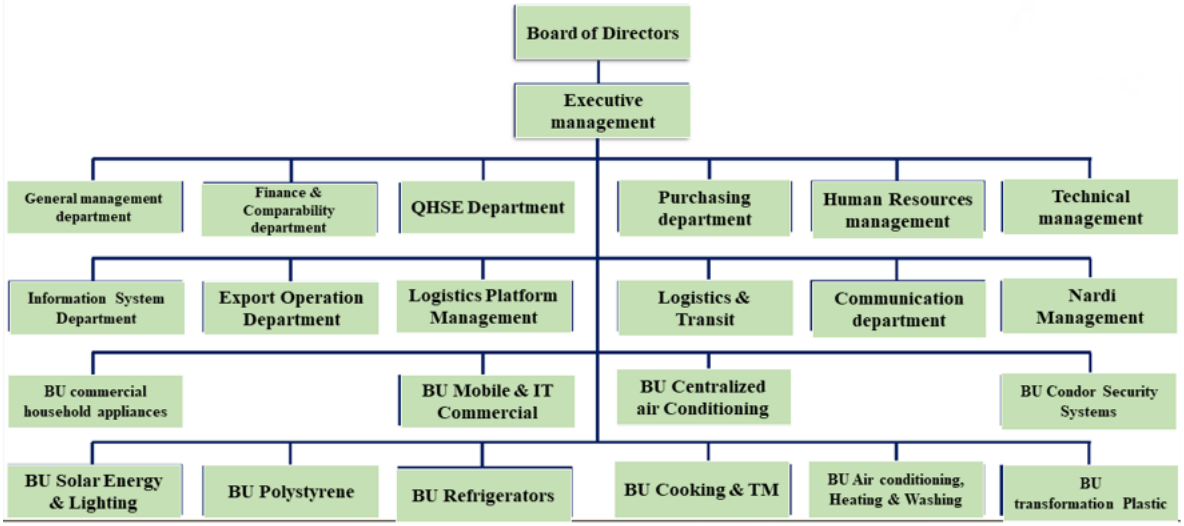
Source: Condor Electronics document from Human resources department

In addition to several support departments (DRH, DFC, QHSE, DSI, etc.), Condor Electronics has six (06) Business production units, implemented in Bordj Bou Arreridj

- BU Refrigerators
- Metal Processing Firing BU
- BU Air conditioning, Heating Washing
- Plastic Processing BU
- Polystyrene BU
- Solar Energy Lighting BU
-

The following figure presenting Condor Electronics` hierarchy.

Figure 36: Condor Electronics` hierarchy



Source: Condor Electronics` document form Human Resources department

III. Data analyses: Descriptive statistics and normality test

Descriptive statistics of respondents' background profile

According to the respondents' data statistical analysis using the SPSS V.26, the following table summarizes the demographic, educational, and experience characteristics of the study sample**.**

Table 7: The demographic profile and descriptive statistics of the respondents

Variable		Percentage	Frequency
Gender	Male	74.7 %	127
	Female	25.3 %	43
	Total	100 %	170
Age	<40	84.7 %	144
	40-50	14.7 %	25
	51-60	0.6 %	1
	>60	0 %	0
	Total	100 %	170
Academic qualification	High school	10 %	17
	Senior technician	15.9 %	27
	Applied studies diploma	2.9 %	5
	Bachelor	25.3 %	43
	Master	33.5 %	57
	Engineer	10.6 %	18
	Doctorate	1.8 %	3
	Total	100 %	170
Current position	Strategic level	42.4 %	72
	Operational level	50 %	85
	Executive level	7.6 %	13
	Total	100 %	170
No° of experience years	3-5	42.3 %	72
	5-10	41.8 %	71
	>10	15.9 %	27
	Total	100 %	170

Source: IBM SPSS Statistics V. 26 Output

In terms of gender; the majority of the respondents were males, with a percentage of (74.7 %), while the percentage of females was (25.3 %). This is primarily due to the nature of the economic activity of the firm, as the firm is industrial, with specific efforts and missions.

In terms of age; we note that the highest percentage is the youth employees. We find that the age range of (20-39 years old) occupied the highest percentage of (84.7 %), the age range of (40-50 years old), with a percentage of (14.7 %), and this indicates that most of the respondents are from the youth category, and the firm is interested in the process of attracting and employing this range, while the percentage of respondents for the range of (51-60 years old) was (0.6 %) and no employees over this age due the retirement age. Thus, it should be noted that the percentage (0.6 %) is low, as it is due to the referral of many employees to retirement in the past few years, especially as this range is approaching the retirement age, which leads to the exit of human resources from the firm and those are the experienced, especially if the firm does not have any kind of plans manage the professional career of these human resources or to re-contract with them, to obtain their human capital.

Regarding academic qualification; the largest percentage was for Master's degree holders with a percentage of (33.5 %), followed by Bachelor degree holders at (25.3 %) then Senior technician degree holders at (15.9 %) and Engineering degree at (10.6 %), followed by high school degree with (10 %) and doctorate holders with (1.8 %). This indicates that the majority of the respondents have academic degrees that qualify them to occupy positions at various organizational levels, which enables them to be considered as human capital – not a condition but can address the HC-, sharing with making strategy and taking strategic decisions.

According to the currently occupied position: We note that half percentage of the respondents are from the operational level of the firm (50 %), with a close percentage of the employees of the strategic level (42.4 %), a few respondents from the Executive level (7.6 %). This explains the high percentage of technicians and engineers at Condor Electronics, and this is due to the nature of this firm's activity. It also indicates that most of the respondents are competent and familiar with management practices and strategic processes in the firm, and this is also accurate with the high percentage of respondents with higher educational degrees.

According to the number of experiences years; it is clear that the largest percentage is in the range of (3-5 years) with a percentage of (42.3 %) of respondents, then the range of experience (5-10 years) with a percentage of (41.8 %) which is very close to the first rage, then the range of respondents with more than 10 years of experience are (15.9 %). This confirms the orientation of Condor Electronics to hire and retain human resources with long experience, -we started the range of experience of 3 years according to the conditions of hire which is usually 3 years of experience-, with the possibility of contracting with them even after retirement and promoting them, as this strategy can attract and motivate the human resources in and outside the firm which is crucial to develop IC within the firm and achieving its strategic goals effectively.

Internal consistency test

To test internal consistency, Cronbach's alpha method has been applied; Cronbach's alpha is a reliability coefficient that measures the internal consistency of a scale constructed from a set of items. The practice consists in reducing the number of initial items contained in the scale

according to the value of the alpha coefficient, to increase the reliability of the measurement of the construct. The value varies between 0 and 1. The closer it is to 1, the stronger the internal consistency of the scale. Values greater than or equal to 0.7 are generally accepted (Thietart & coll, 2003). In order to determine the internal consistency reliability, we have relied also on Guttman Split-Half Coefficient, values less than Cronbach's alpha and above 70% are considered acceptable (Guttman Split-Half Coefficient assumes that the two halves of a test should produce similar true scores and error variances, this assumption is based on the idea that the test items are specifically designed to measure the same underlying construct).

Table 1 demonstrates the internal consistency of the survey statements according to Cronbach's alpha coefficient value of the IC statements (.903) and strategic performance statements (.926), and Guttman Split-Half Coefficient value of IC (.830) and strategic performance (0.873) which are a very high-reliability coefficient. Even the variables and each of its sub dimensions` statements are having high value of Cronbach's alpha coefficient, which makes us confident in the validity and reliability of this thesis survey and the analysis of its results. These results indicate that the scale is reliable and has acceptable internal consistency.

Table 8: Cronbach's alpha reliability coefficient

Variables & Dimensions	N°. Statements	Cronbach's alpha	Guttman Split-Half Coefficient
Human capital	13	.781	0.750
Organizational capital	10	.823	0.742
Relational capital	10	.820	0.790
Intellectual capital	33	.903	0.830
The growth and learning perspective	06	.789	0.774
Internal business process perspective	10	.835	0.766
Customer perspective	06	.720	0,702
Financial perspective	06	.849	0.758
Strategic performance	28	.926	0.873

Source: IBM SPSS Statistics V. 26 Output

IV. A normality test: Skewness and Kurtosis Test

To test of normality of the data, many statistical measures are used, for example, according to IBM SPSS V.26 documentation the **Kolmogorov-Smirnov statistic**, with a Lilliefors significance level for testing normality, is displayed. If non-integer weights are specified, the **Shapiro-Wilk statistic** is calculated when the weighted sample size lies between 3 and 50. For no weights or integer weights, the statistic is calculated when the weighted sample size lies between 3 and 5,000.

There is another method of testing normality using skewness and kurtosis of the distribution, which may be relatively correct in both small samples and large samples. For this purpose, we are using skewness and kurtosis measures that compare the shape to the normal curve of our data.

Skewness is an asymmetry measure of the distribution of a variable's data. The skew value of normality is zero, which means a symmetric distribution. the positive skew value indicates that the tail on the right side of the distribution is longer than the left side and the bulk of the values lie to the left of the mean.

Kurtosis is the "peakedness" measure of the data distribution. The excess kurtosis value of perfect normality is zero. The positive excess kurtosis is "leptokurtic distribution" or high peak, and the negative excess kurtosis is "platykurtic distribution" or flat-topped curve.

A z-test is applied for the normality test using skewness and kurtosis. A z-score could be obtained by dividing the skew values or excess kurtosis by their standard errors.

$$Z = \frac{Skew\ value}{\text{SE skewness}} \qquad Z = \frac{\text{Excess kurtosis}}{\text{SE excess kurtosis}}$$

As the standard errors get smaller when the sample size increases, z-tests under the null hypothesis of normal distribution tend to be easily rejected in large samples with a distribution that may not substantially differ from normality, while in small samples null hypothesis of normality tends to be more easily accepted than necessary (Kim, 2013).

Therefore, for medium-sized samples ($50 < n < 300$), the null hypothesis at absolute z-value over 3.29, with alpha level 0.05 is rejected, and conclude the distribution of the sample is non-normal.

The acceptable values of skewness fall between ±1, and kurtosis is appropriate from a range of ±3, so the distribution can be considered normal.

Based on the above, whereas the sample size of this study is (n=170), according to the results in the table below, we conclude that the dependent and the independent variables data are almost perfectly normally distributed.

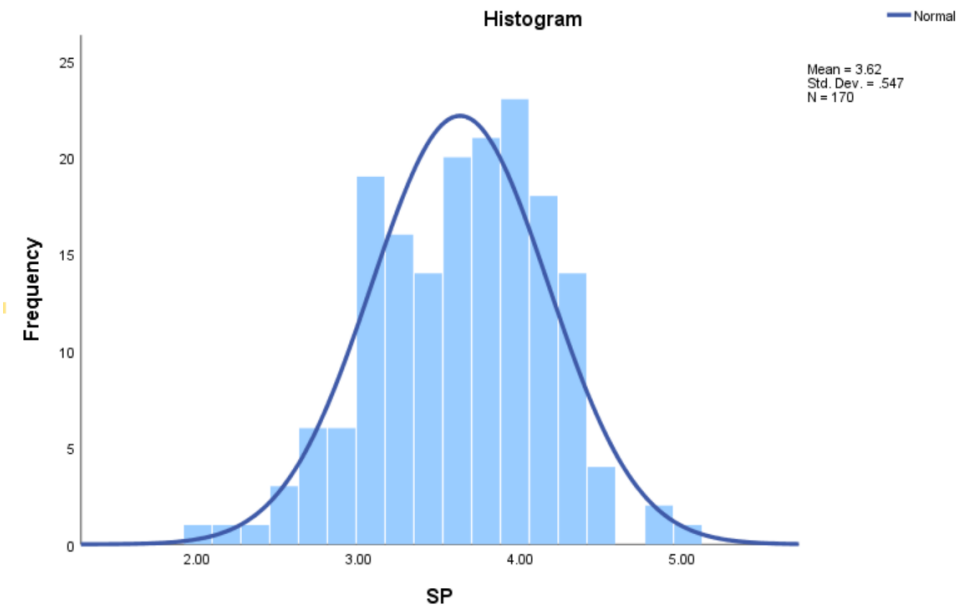
Table 1: Testing normality with Skewness and Kurtosis

Variable	Skewness	Kurtosis
Intellectual capital	-0.301	-0.267
Human capital	-0.128	-0.324
Organizational capital	-0.336	-0.013
Relational capital	-0.662	1.507
Strategic performance	- 0.295	-0.064
Growth and learning perspective	-0.398	0.053
Internal business process perspective	-0.247	0.032
Customer perspective	-0.431	0.327
Financial perspective	-0.472	1.003

Source: IBM SPSS Statistics V. 26 Output

The figure below shows the normality histogram of the independent variable SP.

Figure 37: Normality histogram of Strategic performance



Source: IBM SPSS Statistics V. 26 Output

V. Statistics descriptive of survey statements

Here, we are analyzing the survey's statements of each variable and its sub-dimensions, in order to answer the questions of the study, as descriptive statistics were used to extract the arithmetic mean and standard deviation (on a Likert scale "1 to 5") (where 1: Insignificant to 5: Extremely significant) of the study respondents' responses of survey` statements about each variable IC and SP.

Considering that the arithmetic mean (indicating a “low” level of acceptance: from [1-2.33], and a “medium” level of acceptance from [2.34-3.67], and a “high” level of acceptance, from [3.68-5] (Ramli, Omar, Bolong, D’Silva, & Shaffril, 2013).

Q1: What is the level of IC in Condor Electronics?

To answer this question, we will analyze the statistics descriptive results (Arithmetic means, standard deviations, and the relative importance) shown in the following table:

Table 2: Statistics descriptive of IC statements.

N°	IC dimensions & statements	Mean	Std. Deviation	relative importance	Acceptance level
Human Capital		3.736	.450	2	**High**
01	The individuals have good skills for their work	4.07	.684	2	High
02	This firm's recruitment program is accordance with organizational development	3.86	.724	3	High
03	The firm`s human resources are best in the industry	3.75	.947	6	High
04	The firm gives attention to upgrade its competencies management through training program	3.12	1.114	13	Medium
05	This firm`s education and training program are compatible with the training needs of individuals	4.11	.824	1	High
06	The firm` training program upgrade and develop the required skills	3.85	.882	4	High
07	This firm's training program is compatible with the modern requirements of work	3.72	.808	9	High
08	This firm's recruitment program attaches great importance to recruiting and maintaining competencies	3.79	.739	5	High
09	Employees are proud to work in this firm	3.72	.771	8	High
10	Work in this firm may be a challenge to develop the competencies of individuals	3.72	.829	10	High
11	This firm's individuals are devoted and committed to the firm`s goals due the recognition for their efforts	3.74	.939	7	High
12	This firm values the contributions of exceptional individuals in the workplace	3.55	.897	12	Medium
13	This firm's individuals have innovative ideas to adapt with market changes well	3.58	.908	11	Medium

Organizational capital		**3.578**	**0.603**	**3**	**Medium**
14	This firm's individuals are highly empowered	3.41	1.058	8	Medium
15	This firm supports managers and staffs to communicate well besides its interest in their performance	3.75	.857	3	High
16	Leadership styles contribute to motivating individuals to take initiatives	3.42	1.070	7	Medium
17	This firm' s constantly encourages and improves teamwork environment	3.71	.927	4	High
18	Cooperation across departments in this firm is well developed	3.29	1.053	10	Medium
19	The organizational structure is flexible to the changes in this firm	3.31	1.066	9	Medium
20	Organizational culture supports innovative ideas and solutions in this firm	3.77	.843	2	High
21	Knowledge sharing across organizational levels is well supported in this firm	3.63	.947	5	Medium
22	Individuals are well empowered with greater power and responsibilities in this firm	3.57	.947	6	Medium
23	This firm is interested in moving towards a greater emphasis on E-management.	3.92	.904	1	High
Relational capital		**3.754**	**.561**	**1**	**High**
24	This firm places great importance on understanding and addressing the aspirations and concerns of its customers.	3.81	.877	4	High
25	This firm's customer is considered in top priority	3.81	.919	6	High
26	This firm is committed to enhancing organizational loyalty among its individuals	3.54	1.050	9	Medium
27	This firm is working to improve the perceived image of its brand	3.85	.870	3	High
28	Destination of this firm is important for attracting consumers	3.92	.757	1	High
29	This firm`s reputation is valued by customers better than competitors	3.81	.897	5	High
30	This firm's market is constantly studied to determine and launches what customers want	3.71	.868	8	High

31	This firm offers value added service or benefits to certain customers	3.75	.857	7	High
32	This firm is committed to ensuring after-sales services for its products	3.86	.925	2	High
33	This firm is well oriented to build good relationships among its individuals and with its customers	3.50	1.039	10	Medium
Intellectual capital		**3.693**	**.448**	**/**	**High**

Source: Elaborated by the researcher based on IBM SPSS Statistics V. 26 Output

Relational capital, a total relevance score is high, with arithmetic mean (3.754) and standard deviation (.561), ranked first in terms of the given relative importance. 8 of 10 measures are high, arithmetic means ranged between (3.50-3.92) and standard deviations ranged between (.757-1.050).

This can refer to good relationships and connections that Condor Electronic has, according to the results in table 10 all sub-dimensions of relational capital have high relevance scores, especially market share which indicates the priority to improve its market share continuously besides its image and reputation by handling the customers' queries and meeting their needs through the good study and well understanding of the market`s customers, thus, Condor Electronics is highly customer oriented. In different words, Condor Electronics, according to the high relevance score is having good relational capital through focusing on having excellent relationships with all the stakeholders, this can include good relationships with customers, its environment firms, competitors, government institutions, shareholders, etc.

Human capital, a total relevance score is high, with arithmetic mean (3.736) and standard deviation (.450), ranked second in terms of the given relative importance. 10 of 13 measures are high while the rest of the measures are medium arithmetic means ranging between (3.12-4.11) and standard deviations ranging between (.684-1.114).

This indicates that Condor Electronics is interested in acquiring and training human competencies and is well-oriented toward encouraging creativity and innovation as a source of value. Condor Electronics focuses as well focuses on motivating its employees to achieve their satisfaction and maintain the HC and cares the most about this HC as a crucial strategic value creation source. We can conclude accordingly that Condor Electronics implements the concept of organizational learning in various ways; training and development programs, knowledge sharing and transferring, mentoring, and motivating, and career development opportunities, these strategies can help generate IC within Condor Electronics by helping the employees better understand their strategic goals and processes and to develop needed HC to accede strategy making and succeed accomplishing their roles.

Organizational capital, a total relevance score is medium, with arithmetic mean (3.578) and standard deviation (.602), ranked third in terms of the given relative importance. 04 of the 10 measures are high while the rest of the measures are medium arithmetic means ranging between (3.29-3.92) and standard deviations ranging between (.843-1.070).

These results indicate the medium level of organizational capital in Condor Electronics, which was achieved through the medium relevance score of dimensions and terms of measurement; this can be explained by the non-supporting management philosophy to involve employees in

making strategic decisions and delegating extra authority to achieve more effectiveness and efficiency in performing tasks at the level of each unit with integrated and flexible manner. Furthermore, the lack of a supportive work environment for skills and knowledge sharing, especially, the continuous improvement of used technology in Condor Electronics in order to improve and succeed in its orientation towards innovation and continuous development. Condor Electronics` intangible value comes from its employees, processes, and systems, it is composed of the knowledge, skills, processes, resources, management philosophy, and organizational culture. Therefore, it is worth mentioning that the medium relevance score of OC could be indicating a lack in the main OC aspects or measures such as: nonflexible or rigid organizational structure, competencies, organizational culture (division of work, coordination, determination of powers and direct supervision, standardization of work methods, work systems and procedures, centralization, high degree of complexity and formality, comparing with the orientation towards competencies, and operating model), which all must be compatible and aligned with the Condor Electronics' strategy, especially from the perspective of the strategic intent approach (vision) in addition to the strategic resources and capabilities based view, meaning that Condor Electronics should takes into account its resources and competencies to achieve its strategic goals, also needs to reduce the strategic gap to reach its strategic performance.

Generally, the intellectual capital acceptance score is high within its lower range, very close to 3.68, it can be considered to be within the medium range. with arithmetic mean (3.693) and standard deviation (.448), which indicates according to these measurements the relatively strong intellectual capital that Condor Electronics has according to the high relevance score of its dimensions` measurements. This level of IC indicates that Condor Electronics has some strengths in terms of HC, OC, and RC, but there are still improvements to focus on such as (specialized expertise, continuous development, effective talent acquisition strategies, and more specific training programs, …etc). Condor Electronics has a decent (not very high) level of IC, this can be due to the lack of specialized skills or effective optimization and integration of new processes and systems within the firm, even the level of investment in R&D at Condor Electronics might not be adequately significant to achieve sustainable entrepreneurship. Moreover, Condor Electronics might need extensive engagement with external collaborations, and industry networks. That could contribute to leveraging opportunities and reducing the strategic gap in order to achieve the strategic goals.

Q1: What is the level of SP in Condor Electronics?

To answer this question, we will analyze the statistics descriptive results (Arithmetic means, standard deviations, and the relative importance) shown in the following table:

Table 3: Statistics descriptive of SP statements.

N°	SP dimensions & statements	Mean	Std. Deviation	relative importance	Acceptance level
The growth and learning perspective (Can we continue to improve and create value?)		**3.604**	**.674**	**4**	**Medium**
01	This firm is committed to providing continuous learning opportunities for individuals	3.71	.976	2	High
02	This firm is focuses on attracting competent individuals	3.73	.984	1	High
03	This firm is committed to continuously develop its information technology	3.64	.921	3	Medium
04	This firm has training programs for individuals to upgrade their competencies	3.42	.990	6	Medium
05	This firm`s organizational environment is motivating an increase in job performance	3.55	.979	5	Medium
06	This firm is committed to improve a pleasant working atmosphere	3.58	.946	4	Medium
Internal business process perspective (What must we excel at?)		**3.621**	**.598**	**3**	**Medium**
07	This firm has advanced technological work systems	3.77	.884	2	High
08	This firm is committed to produce according to the required norms	3.82	.873	1	High
09	This firm adopts a policy of continuous improvement in all its processes	3.62	.883	6	Medium
10	This firm is committed to develop its work methods continuously	3.59	.951	8	Medium
11	There is flexibility in making changes to product specifications	3.57	.909	9	Medium
12	This firm carries out regular maintenance to minimize breakdowns	3.71	.932	3	High
13	This firm encourages the creative thinking to solve its problems during the production processes	3.66	.923	4	Medium

14	This firm is well oriented to R&D to improve its products	3.64	.882	5	Medium
15	This firm produces new products	3.62	.930	7	Medium
16	This firm is committed to ensuring timely after sales services	3.20	1.214	10	Medium
Customer perspective (How do customers see us?)		**3.631**	**.592**	**2**	**Medium**
17	This firm is committed to resolving customer complaints in the shortest possible time	3.49	.837	6	Medium
18	This firm constantly improve the quality of its products in line with customer expectations	3.55	.930	5	Medium
19	This firm is working on increasing its sales outlets	3.75	1.008	2	High
20	This firm is committed to satisfy its customers and earn their loyalty	3.57	.984	4	Medium
21	This firm aims to acquire new customers to increase its market share	3.61	.918	3	Medium
22	There is a focus on delivering products to customers within specified deadlines	3.81	.929	1	High
23	This firm cares about ecological and social concerns to enhance the perceived image by customers	3.49	.837	7	Medium
Financial perspective (How do we look to shareholders?)		**3.643**	**.709**	**1**	**Medium**
24	This firm conducts a financial performance analysis to assess its most profitable activities on a regular basis	3.59	.920	4	Medium
25	This firm is committed to achieving financial balance and meeting its financial obligations	3.59	.977	5	Medium
26	The financial decisions are aligned with the firm's strategy	3.65	.975	3	Medium
27	This firm’s production cost is lower than its competitors	3.76	.860	1	High
28	The firm`s increased profits and economic value creation (EVA) due R&D	3.72	.944	2	High
Strategic performance		**3.624**	**.546**	**/**	**Medium**

Source: Elaborated by the researcher based on IBM SPSS Statistics V. 26 Output

The initial set of performance measures was applied from the four BSC perspectives. According to table 11, the acceptance score or the relative importance of the measures to the respondents is illustrated and categorized with BSC perspectives.

From the financial perspective, the relevance score is medium, with arithmetic mean (3.643) and standard deviation (.709), ranked first in terms of the given relative importance. 02 of the 05 measures are high with arithmetic means ranging between (3.59-3.76) and standard deviations ranging between (.860-.977).
This is not surprising because Condor Electronics is profit-oriented and need a wide range of performance measures to monitor their financial performance. These results refer as well to the moderate and relatively effectiveness of Condor Electronics` financial performance, and its ability to gain profit, manage costs and expenses, effectively use assets, and effectively meeting of its financial objectives such as having a good balance sheet, maintaining a desired return on capital, and improving shareholder value that needs to be more focused on. Moreover, the investment of R&D has achieved its goal, through the return on investment and increased sales of new products in return for reducing the cost of projects to produce new products and also increasing the market share due to the orientation towards investing in R&D, but still has some gaps to be filed in order to achieve a high level of financial perspective.

From the customer perspective, the relevance score is Medium, with arithmetic mean (3.631) and standard deviation (.592), ranked second in terms of the given relative importance. 02 of 07 measures are high while the rest of the measures are medium arithmetic means ranging between (3.49-3.81) and standard deviations ranging between (.837-1.008).

Basically, this means that Condor Electronics has a relatively medium focus on understanding and meeting its customers` needs and expectations to ensure their satisfaction, loyalty, and growth. This also can be referring to the firm strategy's orientation toward managing customer knowledge in order to optimize customer experience and make strategies more customer oriented to achieve entrepreneurship excellence in the market. Thus, customer perspective here can be realized through customer loyalty, customer satisfaction, customer perception, and customer trends by understanding and improving these areas of customer focus, a firm can better serve their customers.

It is worth mentioning, that Condor Electronics prioritizes the external perspectives: financial perspective (increasing profitability), and customer perspective. Financial and customer perspectives ranked first and second respectively in terms of acceptance level and relative importance, more than internal perspectives (growth, learning, and internal processes). While Norton and Kaplan argue that the relationship between different perspectives is based on causal analysis, Condor Electronics is more concerned with financial outcomes, increasing market share, and sales by working on customers' satisfaction and gaining their loyalty.

From the internal business process perspective, the relevance score is medium, with arithmetic mean (3.604) and standard deviation (.598), ranked third in terms of the given relative importance. 03 of 10 measures are high while the rest are medium with arithmetic means ranging between (3.20-3.82) and standard deviations ranging between (.873-1.214).
This indicates the medium orientation of Condor Electronics towards excellence in internal business processes by focusing on the employee experience in R&D projects, focusing on improving operational performance through excellence in internal processes and systems, such as reducing completion time, reducing cost, reducing the percentage of errors, and reducing the performance gap at the level of each unit and each process. This perspective typically assesses the effectiveness and the flexibility of Condor Electronics' core processes, such as product

design and development, production, marketing, customer service, and routines, to align its strategic goals and objectives with its core operations. While this perspective allows the firm to identify the processes and systems that need to be improved in order to achieve its strategic performance, Condor Electronics needs to focus on its structure and internal process flexibility.

From the Growth and learning perspective, the relevance score is medium, with arithmetic mean (3.5920) and standard deviation (.674), ranked fourth in terms of the given relative importance. 02 of the 06 measures are high while the rest are medium with arithmetic means ranging between (3.42-3.73) and standard deviations ranging between (.920-.990).
This can refer to the medium capability of Condor Electronics to develop and maintain the resources needed to keep its competitiveness in the market. Moreover, its ability to acquire, deploy and use knowledge and technology to develop and improve products, services, and processes for greater competitive advantage. Here is the crucial importance of investing and managing human capital to improve continuously their performance and create value. This perspective of innovation and learning indicates how Condor Electronics needs to focus on areas such as training, R&D, innovation, knowledge sharing, and organizational learning within a pleasant, supporting, and flexible work environment.

Generally, the strategic performance acceptance score is medium with arithmetic mean (3.624) and standard deviation (.546), which indicates according to these measurements the medium relevance score of Condor Electronics` ability to achieve its strategic goals, and its efficiency to develop strategies to improve its performance. This is confirmed by the measurement of the four perspectives above. The medium level of strategic performance at Condor Electronics can be explained by several reasons, such as the ineffective strategic planning and lack of alignment among well-defined goals, departments objectives, and the firm`s resources, moreover the inadequate orientation and supportive leadership. This could be due to the lack of its competitive advantage in the context of intensive competition against its competitors such as (ENIE, Iris, Geant, ...etc) which is tied mainly to the quality of the products. Also, the inadequate market analysis and customer understanding, as the rigid structure and slow adaptability to respond to a rapidly changing complex market.

VI. Hypotheses testing and results interpreting.

H0.1: Intellectual capital does not affect the firms` strategic performance, at a significance level (α= 0.05), in Condor Electronics.

1. The overall significance of the model

The results of the analysis of variance were used to test the validity and determine how well the model fits the hypothesis test, as shown in Table 12. The One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable (Intellectual capital) by a single factor independent variable (Strategic performance). Analysis of variance is used to test the hypothesis that several means are equal.

Based on the results shown in Table 12, the calculated F score is (109.839), and the significance level is (0.000), which is less than the approved significance level (α=0.05). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of the model to test the main hypothesis**.

Table 4: The One-Way analysis of variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.	T	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	18,515	**1**	**18.515**	**109.839**	**.000**	**10.480**	**0.000**	**1.795**	**-0.457**	**1.798**
Residual	28,319	**168**	**.169**							
Total	46,834	**169**								

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .629
R^2= .395
Adjusted R^2= .392

Thus, one-way ANOVA analysis in table 12 revealed that there is a statistically significant difference in strategic performance, at least one dimension of intellectual capital explains the variation in SP. **The linearity of the relationship between IC and SP has been achieved (the model is significantly statistically fit)**.

2. Partial significance of the model

The partial significance of the model is relying on the t-value, where at least one of the coefficients should have statistical significance apart from the constant. The significance levels are determined based on the t-value, which should be statistically significant if its value is less than 5%.

In the following, we have performed the t-test in order to test the significant effect of IC on strategic performance in Condor Electronics (the main null hypothesis).

Table 5: The significance of intellectual capital effect on strategic performance

Model	Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
	B	Std. Error			
Constant	.979	.255	**.629**	3.842	.000
Intellectual Capital	**.715**	**.068**		**10.480**	**.000**

Source: IBM SPSS Statistics V. 26 Output

R= .629
R^2= .395
Adjusted R^2= .392

The unstandardized coefficient B for intellectual capital is equal to (.715), this means that for each increase in intellectual capital, there is an increase in strategic performance of (.715).

Based on table 13 **the statistical significance of intellectual capital can be tested, while the t-value is equal to (10.480) and "Sig" is equal to zero (p < .05), if Sig. is < 0.05,** therefore, the model exhibits adequacy or statistically significant.

If Sig. is > 0.05, then the null hypothesis is accepted. While the "Sig" is equal to zero (p < .05).

The first null hypothesis is rejected, and the alternative hypothesis is accepted, which indicates that there is an effect of intellectual capital on strategic performance.

Thus, the regression equation for this model would be:

$$y = 0.979 + 0.715\ (x) \text{ or } SP = 0.979 + 0.715\ (IC)$$

The unstandardized coefficient B for intellectual capital is equal to (.715), this means that for each increase in intellectual capital, there is an increase in strategic performance of (.715). The statistical significance of IC can be tested, while the t-value is equal to (10.480) and "Sig" is equal to zero ($p < .05$), we conclude that intellectual capital statistically significantly predicted strategic performance. As for the rest of the percentage (.285), it is due to other factors that are not within this model, and it is mainly related to the difficulty of identifying the factors that accurately affect strategic performance, which can be studied in future research. The value of the correlation coefficient (R =.629) indicates that the relationship between intellectual capital and strategic performance is a positive and relatively strong relationship.

3. The fulfilment extent of conditions to estimate the coefficient of the simple linear regression model (The Least Squares Method):

a. The normality of residuals: In order to test the normality of residuals, we have carried out the Skewness and Kurtosis test. Based on Table 12, the Skewness statistic is (-0.457) which is in the field of [-1,1], and the Kurtosis statistic is (1.798) which is in the field of [-3,3], according to the results in the table below, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model. The DW statistic can be accepted in two cases: if DW has a value ranging between (2<DW<4-du) or if (du<DW<2). A value of 2 indicates there is no autocorrelation detected in the sample. Value from 0 to less than 2 indicates a positive autocorrelation and values from 2 to 4 indicates a negative autocorrelation.

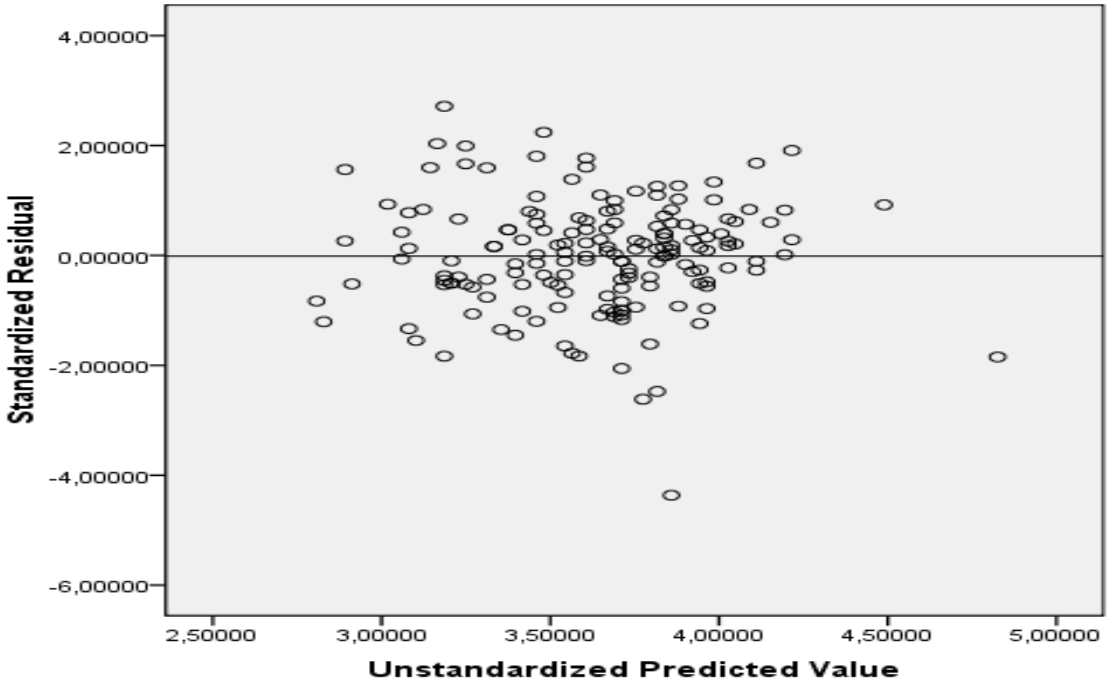
According to table 12, the Durbin-Watson statistic is (1.795) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (**n=170**) and one dependent variable we find **dL= 1.758** and **dU= 1.779**.

Therefore, while (**du<DW<2**) (1.779 < **1.795** < 2) it indicates a **positive autocorrelation of residuals.**

c. The homogeneity of residuals: The assumption of homogeneity of variance is about the consistency of variability of a specific variable across the studied sample. When working with grouped data, this assumption suggests that the variance of the outcome variable should be equal across all the groups.

Figure 38 shows the visualization assessing homogeneity, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 38: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

After ensuring the conditions for simple regression analysis are met, based on Tables 12 and 13 the value of the correlation coefficient was R= 62.9% and it indicates the relatively strong and positive correlation between intellectual capital and strategic performance, as 39.2% of the changes in strategic performance is explained by intellectual capital, based on the adjusted R^2 coefficient. While the unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant.

While the F statistic is significant, follow-up analyses can be conducted to determine which dimensions have means that are larger and significantly different.

VII. Interpreting the Output of Regression Analysis to test the sub-hypothesis.

1. The overall significance of the model (multiple regression)

Based on the results shown in Table 14, it is clear that the calculated F score is (41.805), and the significance level is (0.000), which is less than the approved significance level ($\alpha = 0.05$). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of the model to test the main hypothesis**.

Table 6: The One-Way analysis of variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	**6,719**	**3**	**6.719**	**41.805**	**.000**	**1.790**	**-0.574**	**2.128**
Residual	**,161**	**168**	**.161**					
Total	**6,719**	**169**						

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .656
R^2= .430
Adjusted R^2= .420

Thus, one-way ANOVA analysis in table 14 revealed that there is a statistically significant difference in strategic performance, at least one dimension of intellectual capital explains the variation in SP. **The linearity of the relationship between IC`s dimensions and SP has been achieved (the model is significantly statistically fit)**.

2. Partial significance of the model

The partial significance of the model is relying on the t-value, where at least one of the coefficients should have statistical significance apart from the constant. The significance levels are determined based on the t-value, which should be statistically significant if its value is less than 5%.

In the following, we have performed the t-test in order to test the significant effect of IC`s dimensions on strategic performance in Condor Electronics (the sub-null hypothesis).

Table 7: Multiple Linear Regression Analysis (IC dimensions)

BSC Perspectives	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW	Standardized Residual		Collinearity Statistics	
	B	Std. Error	Beta				Skewness	Kurtosis	Tolerance	VIF
HC	**.284**	**.086**	**.243**	**3.304**	**.001**	**1.790**	**-.574**	**2.128**	**.636**	**1.572**
OC	**.083**	**.059**	**.108**	**1.424**	**.156**				**.602**	**1.661**
RC	**.397**	**.068**	**.423**	**5.829**	**.000**				**.651**	**1.537**

Source: IBM SPSS Statistics V. 26 Output

3. The fulfilment extent of conditions to estimate the coefficient of the multiple linear regression model (The Least Squares Method):

a. The normality of standardized residual: In order to test the normality of standardized residual, we have also carried out the Skewness and Kurtosis test. Based on Table 15, the Skewness statistic is (-.574) which is in the field of [-1,1], and the Kurtosis statistic is (2.128)

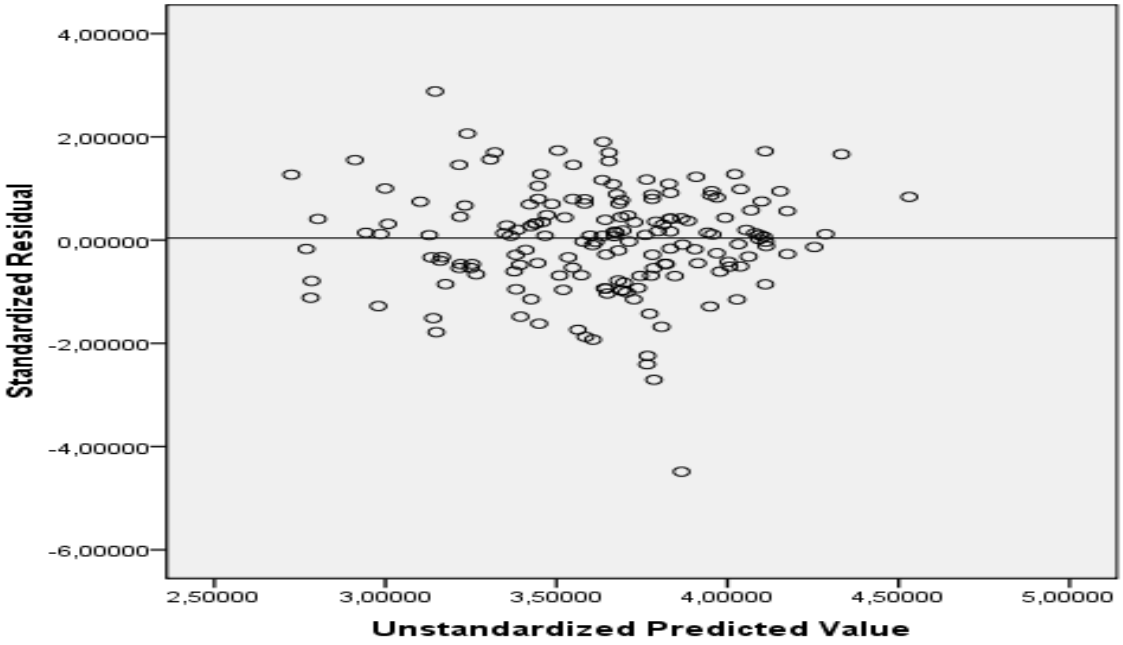
which is in the field of [-3,3], according to these results, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model.

According to table 15, the Durbin-Watson statistic is (1.790) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while (du<DW<2) (1.779 < 1.790 < 2) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 39 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 39: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 15, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC, OC, RC) and that multicollinearity will not be a problem in the regression model. So, because

all tolerance statistics in table 15 are much greater than (.01) there will be no collinearity with our multiple linearity.

After ensuring the conditions for multiple regression analysis are met, the sub-null hypothesises are tested as the following:

H0.1.1: There is no effect of human capital on strategic performance, at a significance level (α= 0.05), in Condor Electronics.

According to table 15, the unstandardized coefficient B for human capital is equal to (.284), this means that for each increase in human capital, there is an increase in strategic performance of (.284). The statistical significance of human capital can be tested, while the t-value is equal to (3.304) and "Sig" is equal to (0.001) ($p < .05$), we conclude that human capital statistically significantly predicted strategic performance.

The first sub-null hypothesis is rejected, and the alternative hypothesis is accepted, which indicates that there is an effect of human capital on strategic performance.

Human capital positively affects strategic performance in Condor Electronics through its contributions to market knowledge, quality control, well decision and policy making, employee engagement, talent acquisition and development, and organizational agility through innovative processes in adapting to constant changes and strategic vigilance. This also indicates that the recruitment policy followed by Condor Electronics is effective. Competencies and experiences rooted in human capital generate strategic value, through creative ideas, continuous innovation in processes and methods of work, and the creation of a flexible work environment that encourages knowledge sharing. This also indicates that Condor Electronics' individuals are highly qualified and skilled to accomplish their tasks effectively in order to meet the strategic goals. In different words, strong HC has a crucial effect on strategic performance through its strong contribution to strategic decision-making, and its execution effectively. Therefore, Condor Electronics is advised to invest in its HC to achieve exceptional strategic performance.

H0.1.2: There is no effect of organizational capital on strategic performance, at a significance level (α= 0.05), in Condor Electronics.

According to Table 15, the unstandardized coefficient B for organizational capital is equal to (.083), while the t-value is equal to (1.424) and "Sig" is equal to (.156) ($p > .05$), we conclude that organizational capital is not statistically significantly predicted strategic performance.

The second sub-null hypothesis is accepted, which indicates that there is no effect of organizational capital on strategic performance.

While OC does not have a significant effect on strategic performance, it is still crucial in providing the infrastructure and resources that support the effective employment of human capital and relational capital as well. These results indicate that Condor electronics does not focus on competencies management as much as it focuses on task allocation and specialization, leading to a rigid organizational structure that lacks flexibility in facing continuous changes. Condor electronics' efforts in creating a flexible work environment that supports creativity in

its leadership styles and internal processes, and promotes teamwork, do not affect, or upgrade the level of strategic performance.

The non-significant effect of OC on strategic performance may indicate that core components of OC are not fully achieved such as information technology, supportive organizational culture, and flexible leadership methods, as well as its hierarchy and routines agility. In the context of business complexity, Condor Electronics has to adopt new organizational structures and processes to perform effectively and compete in the market. The rigid and mechanistic structure (lacks flexibility) is typical for a stable business environment, unlike the complex and dynamic business environment of Condor Electronics, thus, effecting its strategic performance and goal achievement.

In different words, the non-significant effect of OC on strategic performance could be due the insufficient resources, ineffective execution, and lack of alignment between organizational culture and strategy and between organizational structure and strategy, (lack of alignment between strategy and the OC components). Therefore, the organic structure is crucial for Condor Electronic in order to optimize the effect of OC on its strategic performance by promoting its agility, innovation, knowledge sharing, employee empowerment, and adaptability to change, supporting the environment to achieve strategic goals and responding effectively to dynamic market challenges.

H0.1.3: There is no effect of relational capital on strategic performance, at a significance level (α= 0.05), in Condor Electronics.

According to table 15, the unstandardized coefficient B for relational capital is equal to (.397), this means that for each increase in relational capital, there is an increase in strategic performance of (.397). The statistical significance of relational capital can be tested, while the t-value is equal to (5.829) and "Sig" is equal to zero ($p < .05$), we conclude that relational capital statistically significantly predicted strategic performance.

The third sub-null hypothesis is rejected, and the alternative hypothesis is accepted, which indicates that there is an effect of relational capital on strategic performance.

The effect of RC on strategic performance indicates the significant attention that Condor Electronics gives to building excellent relationships with customers, earning their satisfaction and loyalty through efforts to enhance its market reputation and image, and also to meet the needs of both customers and employees. RC can be achieved through good human capital which comes with the second effect on strategic performance at Condor Electronics, which indicates the high level of skilled employees and their crucial contribution in achieving strategic goals as well as the effectiveness alignment of recruitment policy with Condor Electronics` development vision which focuses on customers as a priority. By prioritizing strong relationships with stakeholders and effective management of external relationships Condor Electronics is more likely to achieve its strategic goals, attracts new customers and investors, and build loyalty and credibility, which facilitates new opportunities, and resources, which contribute to more effective strategic performance. Also, RC enables knowledge exchange and learning between Condor Electronics and its stakeholders (external environment); which reinforces Condor Electronics' capabilities to make better strategic decisions and improves its strategic performance.

The relational capital has a greater effect on strategic performance with an unstandardized coefficient (B = 39.7%) and t-value of (5.829) and "Sig" is equal to zero ($p < .05$), then the human capital has a second effect with an unstandardized coefficient (B = 28.4%) and t-value of (3.304) and "Sig" is equal to (.001) ($p < .05$).

It is worth mentioning that these results are matched with the results of the survey statements analysis (see table 10), whereas RC has got the highest relative importance followed by the HC with high relevance score, while the OC has got the medium relevance importance.

For identifying the significant effect of all significant independent variables (HC, OC, RC) on strategic performance, stepwise multiple regression analysis was applied, in order to identify the biggest contribution variable in explaining strategic performance.

Stepwise, at each step, excludes the weakest correlated independent variable, the variable not in the equation that has the smallest probability of F is entered, if that probability is sufficiently small. Variables already in the regression equation are removed if their probability of F becomes sufficiently large. The method terminates when no more variables are eligible for inclusion or removal. This is shown in the following table:

Table 8: Stepwise multiple linear regression analysis

Model	Predictors	R	R^2	Adj. R^2	B	F	Sig.	t	Sig.	Durbin-Watson	Standardized Residual	
											Skewness	Kurtosis
1	Relational capital	.614	.377	.373	.598	101.627	.000	10.081	.000	1.918	-.644	2.055
2	Relational capital + Human capital	.665	.443	.436	.454 .359	66.309	.000	6.981 4.437	.000			

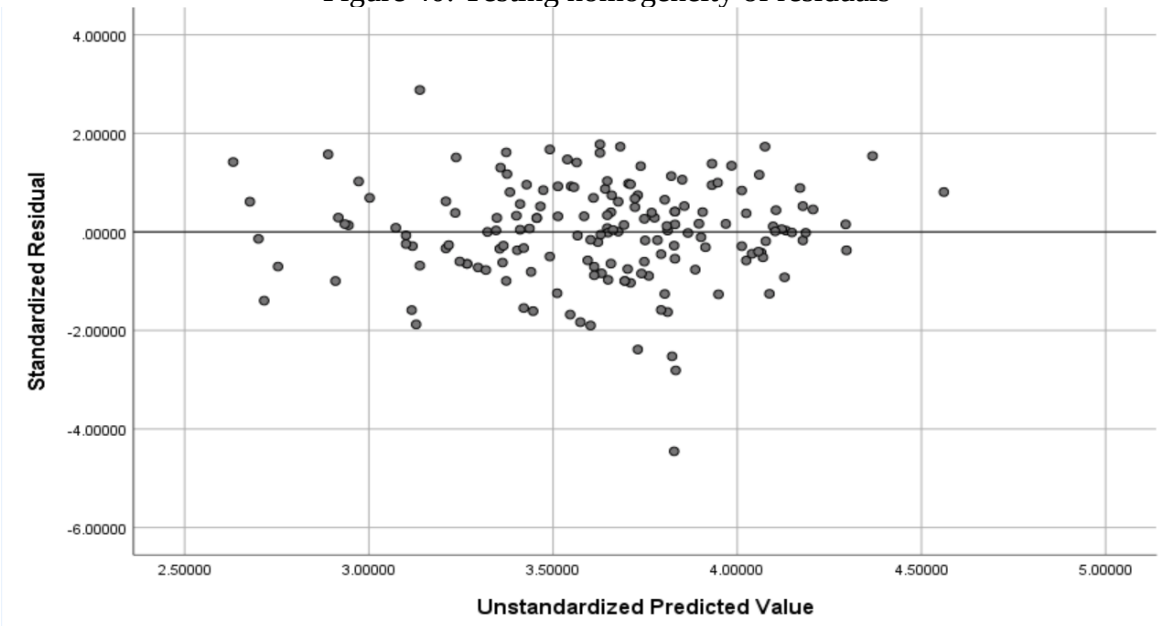
Source: IBM SPSS Statistics V. 26 Output

a. The normality of residuals: In order to test the normality of standardized residuals, we have also carried out the Skewness and Kurtosis test. Based on Table 16, the Skewness statistic is (-.644) which is in the field of [-1,1], and the Kurtosis statistic is (2.055) which is in the field of [-3,3], according to the results in the table below, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model. According to table 16, the Durbin-Watson statistic is (1.918) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while ($du<DW<2$) ($1.779<1.918<2$) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 40 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 40: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 17, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC, OC, RC) and that multicollinearity will not be a problem in the regression model. So, because all tolerance statistics in table 17 are much greater than (.01) there will be no collinearity with our multiple linearity.

Table 9: Multicollinearity diagnostics

	Collinearity Statistics	
	Tolerance	VIF
Human Capital	.588	1.700
Organizational Capital	.514	1.944
Relational Capital	.625	1.600

Source: IBM SPSS Statistics V. 26 Output

According to table 16, the value of adjusted R^2 for model 1 is equal to (.373), shows that there are 37.3% of the variance in strategic performance explained by the relational capital, while the strength of the correlation between relational capital and strategic performance is inferred with R which is equal to 61.4%, it indicates a direct, positive, and relatively strong correlation coefficient.

We note here that relational capital is the first independent variable to select in the model because it has the largest R^2 with strategic performance, and even when comparing to the rest

of the variables in this model, we find that it has the highest level in terms of the relevance or acceptance score according to measures (see table 11) above, and hence the largest t-value.

Furthermore, in stepwise multiple linear regression analysis the unstandardized coefficient B for relational capital is equal to (.598), this means that for each increase in relational capital, there is an increase in strategic performance of (.598), The statistical significance of relational capital can be tested, while the t-value is equal to (10.081) and "Sig" is equal to zero ($p < .05$), we conclude that relational capital statistically significantly predicted strategic performance.

The value of adjusted R2 is equal to (.436) for Model 2, showing that there are 43.6% of the variance in strategic performance occurred because of changes in the combination of both relational capital & human capital, while the strength of the correlation between both (relational capital & human capital) and strategic performance is inferred with R which is equal to 66.5%, it indicates as well, a direct, positive and relatively strong correlation coefficient. .454

Furthermore, in stepwise multiple linear regression analysis in model 2 the unstandardized coefficient B for relational capital is equal to (.454), this means that for each increase in relational capital, there is an increase in strategic performance of (.454), and for human capital is equal to (.359), this means that for each increase in human capital, there is an increase in strategic performance of (.359), The statistical significance of relational & human capital can be tested, while the t-value of relational capital is equal to (6.981) while the t-value of human capital is equal to (4.437) and "Sig" is equal to zero ($p < .05$), we conclude that relational capital & human capital statistically significantly predicted strategic performance.

According to table 16 of stepwise multiple linear regression analysis, we notice that the organizational capital dimension has been excluded as it has no statistical significance to predict strategic performance.

Analysis of IC's dimensions effect on BSC's perspectives

In the following, we have run the linear regression analysis to determine the BSC`s perspectives of strategic performance that were most affected by IC's dimensions.

1. Analysis of IC's dimensions effect on growth & learning perspective:

1.1. The significance of the model (multiple regression)

Based on the results shown in Table 18, the calculated F score is (15.357), and the significance level is (0.000), which is less than the approved significance level ($\alpha = 0.05$). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of this model**.

Table 10: The One-Way analysis of variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	**16,709**	**3**	**5.570**	**15.357**	**.000**	**1.750**	**1.385**	**11.334**
Residual	**60,203**	**166**	**.363**					
Total	**76,912**	**169**						

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .466
R^2= .217
Adjusted R^2= .203

Thus, one-way ANOVA analysis in table 18 revealed that there is a statistically significant difference in growth & learning perspective, at least one dimension of intellectual capital explains the variation in growth & learning perspective. **The linearity of the relationship between IC`s dimensions and growth & learning perspective has been achieved (the model is significantly statistically fit)**. The value of the correlation coefficient (R =.466) indicates that the relationship between intellectual capital dimensions and growth & learning perspective is a positive and relatively strong relationship.

1.2. The significant effect of IC`s dimensions on growth & learning perspective

In the following, we have run the t-test to test the significant effect of IC`s dimensions on growth & learning perspective in Condor Electronics.

Table 11: Multiple Linear Regression Analysis of IC's dimensions on the growth & learning

BSC Perspectives	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW	Standardized Residual		Collinearity Statistics	
	B	Std. Error	Beta				Skewness	Kurtosis	Tolerance	VIF
HC	**.294**	**.129**	**.196**	**2.278**	**.024**	**1.750**	**1.385**	**1.334**	**.636**	**1.572**
OC	**.065**	**.088**	**.065**	**.738**	**.462**				**.602**	**1.661**
RC	**.347**	**.102**	**.289**	**3.392**	**.001**				**.651**	**1.537**

Source: IBM SPSS Statistics V. 26 Output

1.3. The fulfilment extent of conditions to estimate the coefficient of the multiple linear regression model (The Least Squares Method):

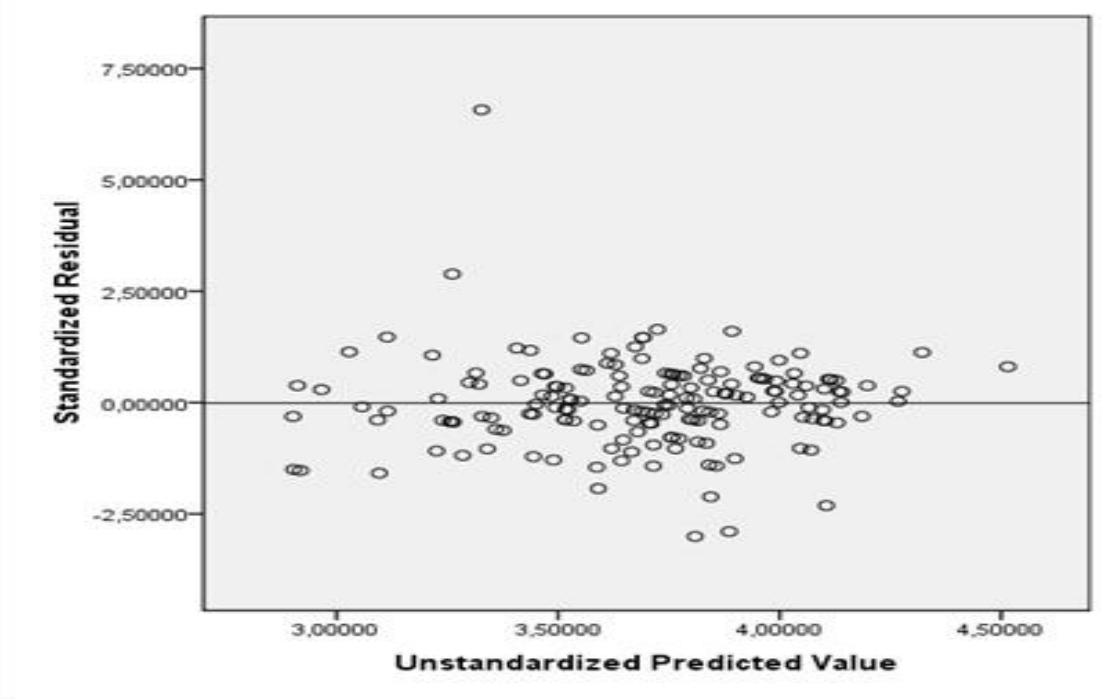
a. The normality of standardized residual: In order to test the normality of standardized residual, we have also carried out the Skewness and Kurtosis test. Based on Table 19, the Skewness statistic is (1.385) which is in the field of [-2,2], and the Kurtosis statistic is (1.334) which is in the field of [-3,3], according to these results, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model.

According to table 19, the Durbin-Watson statistic is (1.750) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while (du<DW<2) (1.779 < 1.750< 2) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 40 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 41: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 19, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC, OC, RC) and that multicollinearity will not be a problem in the regression model. So, because all tolerance statistics in table 19 are much greater than (.01) there will be no collinearity with our multiple linearity.

After ensuring the conditions for multiple regression analysis are met, the effect of IC's dimensions on growth & learning perspective can be tested as the following:

According to table 19, the unstandardized coefficient B for human capital is equal to (.294), this means that for each increase in human capital, there is an increase in growth & learning perspective of (.294). The statistical significance of human capital can be tested, while the t-value is equal to (2.278) and "Sig" is equal to (0.024) ($p < .05$), we conclude that human capital statistically significantly predicted the growth & learning perspective.

While the strong HC leads to improved individuals' performance, a culture of continuous learning and continuous improvement, better innovation and creativity, and effective knowledge sharing. These factors contribute to Condor Electronics' ability to grow and adapt. These results may also indicate that Condor Electronics needs to invest more in its HC, fostering the training programs, knowledge, and talent management processes, and R&D projects that support growth and learning, leading to continuous improvement and competitiveness.

According to Table 19, the unstandardized coefficient B for organizational capital is equal to (.065), while the t-value is equal to (.738) and "Sig" is equal to (.462) ($p > .05$), we conclude that organizational capital is not statistically significantly predicted the growth & learning perspective.

The non-significant effect of OC on growth & learning perspective in Condor Electronics indicates the lack of OC infrastructure, which creates a supporting environment for the growth of Condor Electronics and learning to achieve its goals based on its experiences, whether by fostering strengths or addressing weaknesses.

According to table 19, the unstandardized coefficient B for relational capital is equal to (.347), this means that for each increase in relational capital, there is an increase in growth & learning perspective of (.347). The statistical significance of relational capital can be tested, while the t-value is equal to (3.392) and "Sig" is equal to (0.001) ($p < .05$), we conclude that relational capital statistically significantly predicted the growth & learning perspective.

While a strong relational capital can positively affect the growth and learning perspective, these results indicate that Condor Electronics is supporting knowledge exchange, collaboration, resource access, reputation building, and continuous-development orientation in order to achieve its strategic goals.

2. Analysis of IC's dimensions effect on internal business process perspective:

2.1. The significance of the model (multiple regression)

Based on the results shown in Table 20, the calculated F score is (32.119), and the significance level is (0.000), which is less than the approved significance level ($\alpha = 0.05$). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of this model**.

Table 12: The One-Way analysis of variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	**22,200**	**3**	**7.400**	**32.119**	**.000**	**2.055**	**-.562**	**2.011**
Residual	**38,244**	**166**	**.230**					
Total	**60,444**	**169**						

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .606
R^2= .367
Adjusted R^2= .356

Thus, one-way ANOVA analysis in table 20 revealed that there is a statistically significant difference in the internal business process perspective, at least one dimension of intellectual capital explains the variation in the internal business process perspective. **The linearity of the relationship between IC`s dimensions and internal business process perspective has been achieved (the model is significantly statistically fit)**. The value of the correlation coefficient (R =.606) indicates that the relationship between intellectual capital dimensions and internal business process perspective is a positive and relatively strong relationship.

2.2. The significant effect of IC`s dimensions on internal business process perspective

In the following, we have run the t-test to test the significant effect of IC`s dimensions on the internal business process perspective in Condor Electronics.

Table 13: Multiple Linear Regression Analysis of IC` dimensions on the internal business process perspective

BSC Perspectives	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW	Standardized Residual		Collinearity Statistics	
	B	Std. Error	Beta				Skewness	Kurtosis	Tolerance	VIF
HC	**.307**	**.103**	**.232**	**2.001**	**.003**	**2.055**	**-.562**	**2.011**	**.636**	**1.572**
OC	**.111**	**.070**	**.126**	**1.589**	**.114**				**.602**	**1.661**
RC	**.387**	**.082**	**.363**	**4.743**	**.000**				**.651**	**1.537**

Source: IBM SPSS Statistics V. 26 Output

2.3. The fulfilment extent of conditions to estimate the coefficient of the multiple linear regression model (The Least Squares Method):

a. The normality of standardized residual: In order to test the normality of standardized residual, we have also carried out the Skewness and Kurtosis test. Based on table 21, the Skewness statistic is (-.562) which is in the field of [-2,2], and the Kurtosis statistic is (2.011) which is in the field of [-3,3], according to these results, we conclude that the residuals are normally distributed.

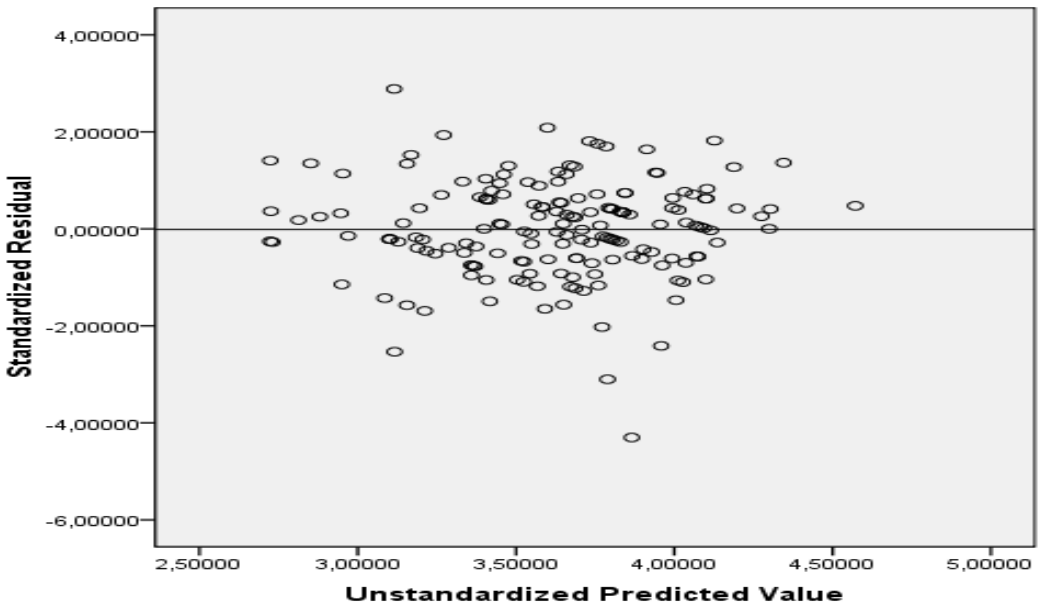
b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model.

The DW statistic can be accepted in two cases: if DW has a value ranging between (2<DW<4-du) or if (du<DW<2). A value of 2 indicates there is no autocorrelation detected in the sample. Value from 0 to less than 2 indicates a positive autocorrelation and values from 2 to 4 indicates a negative autocorrelation.

According to table 15, the Durbin-Watson statistic is (2.055) which is above 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while (2<DW<4-du) (2 < 2.055 < 4-1.779) which is (2 < 2.055 <2.221) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 42 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 42: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 21, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC,

OC, RC) and that multicollinearity will not be a problem in the regression model. So, because all tolerance statistics in table 21 are much greater than (.01) there will be no collinearity with our multiple linearities.

After ensuring the conditions for multiple regression analysis are met, the effect of IC's dimensions on the internal business process perspective can be tested as the following:

According to table 21, the unstandardized coefficient B for human capital is equal to (.307), this means that for each increase in human capital, there is an increase in internal business process perspective of (.307). The statistical significance of human capital can be tested, while the t-value is equal to (2.001) and "Sig" is equal to (0.003) ($p < .05$), we conclude that human capital statistically significantly predicted the internal business process perspective.

At Condor Electronics, HC is considered a crucial asset for developing internal business process performance. It encompasses skills, expertise, training and development, job satisfaction, employee engagement, innovation, and creativity, in different words, strong HC means a more effective internal business process. Therefor, it is a must that Condor Electronics focus on developing its HC continuously.

According to Table 21, the unstandardized coefficient B for organizational capital is equal to (.111), while the t-value is equal to (1.589) and "Sig" is equal to (.114) ($p > .05$), we conclude that organizational capital is not statistically significantly predicted the internal business process perspective.

Also here, the non-significant effect of OC on internal business process perspective in Condor Electronics indicates the lack of OC's infrastructure, which is considered as an engine to drive internal processes within Condor Electronics to achieve its goals, thus, Condor Electronics needs to think of new strategies to fostering it OC.

According to table 21, the unstandardized coefficient B for relational capital is equal to (.387), this means that for each increase in relational capital, there is an increase in the internal business process perspective of (.387). The statistical significance of relational capital can be tested, while the t-value is equal to (4.743) and "Sig" is equal to (0.000) ($p < .05$), we conclude that relational capital statistically significantly predicted the internal business process perspective.

These results indicate that Condor Electronics is focusing on fostering its RC, through building strong relationships with suppliers and customers, stakeholders' collaborations, employee engagement, knowledge exchange, and well-planned communication channels, which contributes to the effectiveness and efficiency of internal business processes and developed operational performance.

3. Analysis of IC's dimensions effect on customer perspective:

3.1. The significance of the model (multiple regression)

Based on the results shown in Table 22, the calculated F score is (22.554), and the significance level is (0.000), which is less than the approved significance level ($\alpha = 0.05$). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of this model**.

Table 14: The One-Way analysis of variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	**15,028**	**3**	**5.009**	**22.554**	**.000**	**1.837**	**-.556**	**.969**
Residual	**36,870**	**166**	**.222**					
Total	**51,898**	**169**						

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .538
R^2= .290
Adjusted R^2= .277

Thus, one-way ANOVA analysis in table 22 revealed that there is a statistically significant difference in internal business process perspective, at least one dimension of intellectual capital explains the variation in customer perspective. **The linearity of the relationship between IC`s dimensions and customer perspective has been achieved (the model is significantly statistically fit)**. The value of the correlation coefficient (R =.538) indicates that the relationship between intellectual capital dimensions and customer perspective is a positive and relatively strong relationship.

3.2. The significant effect of IC`s dimensions on the customer perspective

In the following, we have run the t-test to test the significant effect of IC`s dimensions on customer perspective in Condor Electronics.

Table 15: Multiple Linear Regression Analysis of IC Dimensions on the customer perspective

BSC Perspectives	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW	Standardized Residual		Collinearity Statistics	
	B	Std. Error	Beta				Skewness	Kurtosis	Tolerance	VIF
HC	**.128**	**.101**	**.104**	**1.265**	**.208**	**1.837**	**-.556**	**.969**	**.636**	**1.572**
OC	**.113**	**.069**	**.138**	**1.641**	**.103**				**.602**	**1.661**
RC	**.378**	**.080**	**.383**	**4.725**	**.000**				**.651**	**1.537**

Source: IBM SPSS Statistics V. 26 Output

3.3. The fulfilment extent of conditions to estimate the coefficient of the multiple linear regression model (The Least Squares Method):

a. The normality of standardized residual: In order to test the normality of standardized residual, we have also carried out the Skewness and Kurtosis test. Based on Table 23, the Skewness statistic is (-.556) which is in the field of [-2,2], and the Kurtosis statistic is (.969)

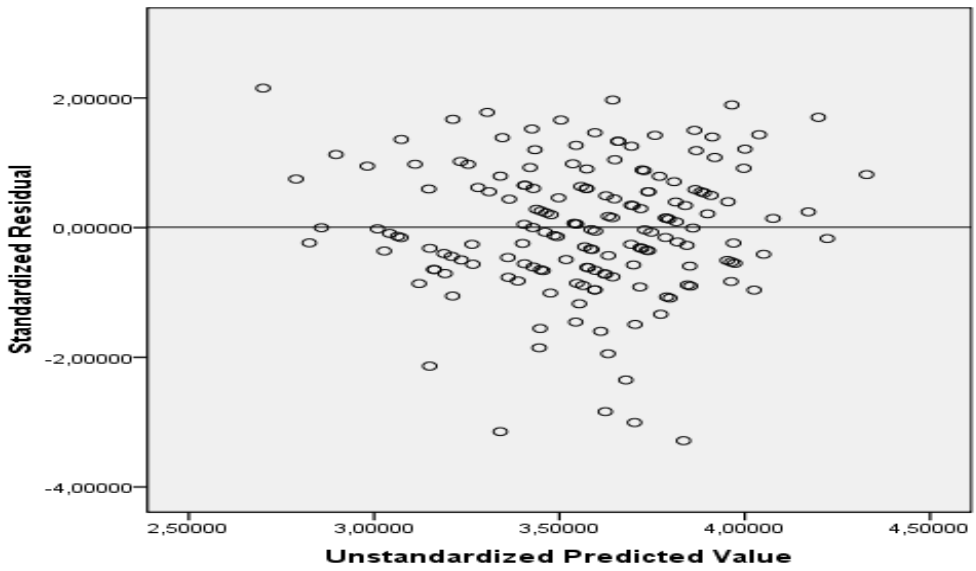
which is in the field of [-3,3], according to these results, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model.

According to table 23, the Durbin-Watson statistic is (1.837) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while (du<DW<2) (1.779 < 1.837< 2) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 43 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 43: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 23, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC, OC, RC) and that multicollinearity will not be a problem in the regression model. So, because all tolerance statistics in table 23 are much greater than (.01) there will be no collinearity with our multiple linearity.

After ensuring the conditions for multiple regression analysis are met, the effect of IC's dimensions on customer perspective can be tested as the following:

According to Table 23, the unstandardized coefficient B for human capital is equal to (.128), while the t-value is equal to (1.265) and "Sig" is equal to (.208) ($p > .05$), we conclude that human capital is not statistically significantly predicted the customer perspective.

These results indicate that Condor Electronics` HC, do not affect the customer perspective, which means that Condor electronics needs to focus on developing their customer service quality, relationship building, product knowledge, problem-solving, personalized experiences, and employee-customer engagement, significantly influences the customer perspective. In different words, by investing in the development and empowerment of its HC, Condor Electronics can create positive and unique customer experiences, leading to significant customer satisfaction, loyalty, and advocacy.

According to Table 23, the unstandardized coefficient B for organizational capital is equal to (.113), while the t-value is equal to (1.641) and "Sig" is equal to (.103) ($p > .05$), we conclude that organizational capital is not statistically significantly predicted the customer perspective.

While OC is crucial for creating strong RC, the results above indicate the non-significant effect of OC on the customer perspective, which means that Condor Electronics needs to invest in developing its OC including brand reputation, operational efficiency, service quality, innovation marketing strategy, customer-oriented strategy, and effective communication in order to create positive customer experiences and maintain a competitive advantage in the market.

According to table 23, the unstandardized coefficient B for relational capital is equal to (.378), this means that for each increase in relational capital, there is an increase in customer perspective of (.378). The statistical significance of relational capital can be tested, while the t-value is equal to (4.725) and "Sig" is equal to (0.000) ($p < .05$), we conclude that relational capital statistically significantly predicted the customer perspective.

These results indicate that RC has a positive and significant effect on the customer perspective, which means that there is a strong focus by Condor Electronics on the marketing aspect and efforts to increase market share and attract new customers to reinforce their sales in the context of intense competition in the market. By investing in RC Condor Electronics will be able to create a positive customer experience, gain their satisfaction and loyalty, fostering customer knowledge management, gain positive word-of-mouth, maximize customer lifetime value, and deliver service excellence which significantly affects the customer perspective.

4. Analysis of IC's dimensions effect on financial perspective:

4.1. The significance of the model (multiple regression)

Based on the results shown in Table 24, the calculated F score is (28.684), and the significance level is (0.000), which is less than the approved significance level ($\alpha = 0.05$). For it to be significant the value of Sig has to be 0.05 or less, in other words, the higher the **F** score gets, the lower will be the **significance value.**

Therefore, we conclude **the validity of this model**.

Table 16: The One-Way analysis of variance (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.	Durbin-Watson	Skewness	Kurtosis
Regression	**29,063**	**3**	**9.688**	**28.684**	**.000**	**1.702**	**-.628**	**2.410**
Residual	**56,065**	**166**	**.338**					
Total	**85,128**	**169**						

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.
R= .584
R^2= .341
Adjusted R^2= .330

Thus, one-way ANOVA analysis in table 24 revealed that there is a statistically significant difference in growth & learning perspective, at least one dimension of intellectual capital explains the variation in financial perspective. **The linearity of the relationship between IC`s dimensions and financial perspective has been achieved (the model is significantly statistically fit)**. The value of the correlation coefficient (R =.584) indicates that the relationship between intellectual capital dimensions and financial perspective is a positive and relatively strong relationship.

4.2. The significant effect of IC`s dimensions on the financial perspective

In the following, we have run the t-test to test the significant effect of IC`s dimensions on the financial perspective of Condor Electronics.

Table 17: Multiple Linear Regression Analysis of IC` dimensions on the financial performance

BSC Perspectives	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	DW	Standardized Residual		Collinearity Statistics	
	B	Std. Error	Beta				Skewness	Kurtosis	Tolerance	VIF
HC	**.414**	**.124**	**.263**	**3.327**	**.001**	**1.702**	**-.628**	**2.410**	**.636**	**1.572**
OC	**.024**	**.085**	**.023**	**.281**	**.779**				**.602**	**1.661**
RC	**.494**	**.099**	**.391**	**5.006**	**.000**				**.651**	**1.537**

Source: IBM SPSS Statistics V. 26 Output

4.3. The fulfilment extent of conditions to estimate the coefficient of the multiple linear regression model (The Least Squares Method):

a. The normality of standardized residual: In order to test the normality of standardized residual, we have also carried out the Skewness and Kurtosis test. Based on Table 25, the Skewness statistic is (-.628) which is in the field of [-2,2], and the Kurtosis statistic is (2.410)

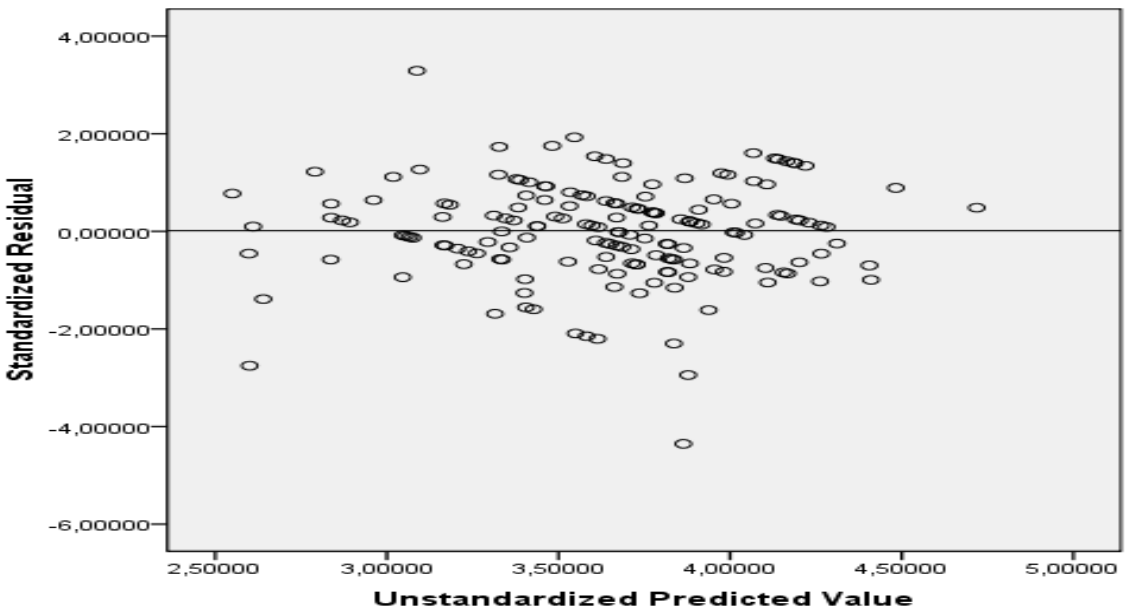
which is in the field of [-3,3], according to these results, we conclude that the residuals are normally distributed.

b. The autocorrelation in the residuals: We have performed the Durbin Watson (DW) statistic test in order to test the autocorrelation in the residuals obtained from a linear regression model.

According to table 25, the Durbin-Watson statistic is (1.702) which is below 2, compared with the Durbin-Watson Statistic: 5 Per Cent Significance Points of dL and dU table, with sample size (n=170) and one dependent variable we find dL= 1.758 and dU= 1.779. Therefore, while (du<DW<2) (1.779 < 1.702< 2) it indicates a positive autocorrelation of residuals.

c. The homogeneity of the standardized residuals: Figure 44 shows the visualization assessing the homogeneity of the standardized residuals, it illustrates that the dots are spread out and distributed fairly evenly across both sides of the line that represents zero (which is the line separating the negative residuals and positive residuals), as we can observe that there is no particular pattern, this is what is meant by the homogeneity of variance.

Figure 44: Testing homogeneity of residuals



Source: IBM SPSS Statistics V. 26 Output

d. The multicollinearity test: We have performed the variance inflation factor (VIF) to test the multicollinearity of the predictor or the independent variables variable in our regression model, which measures the correlation between these predictor variables. If (VIF) value is greater than 10 indicates a potentially high correlation between the independent or the predictor variables with other predictor variables in this regression model. Thus, the coefficient estimates and p-values in the regression output are likely unreliable. While tolerance measures the influence of one independent or predictor variable on all other independent variables.

According to table 25, none of the VIF values for the independent variables are greater than 10, which indicates that there is no correlation between the independent or predictor variables (HC, OC, RC) and that multicollinearity will not be a problem in the regression model. So, because

all tolerance statistics in table 25 are much greater than (.01) there will be no collinearity with our multiple linearities.

After ensuring the conditions for multiple regression analysis are met, the effect of IC's dimensions on financial perspective can be tested as the following:

According to table 25, the unstandardized coefficient B for human capital is equal to (.414), this means that for each increase in human capital, there is an increase in financial performance of (.414). The statistical significance of human capital can be tested, while the t-value is equal to (3.327) and "Sig" is equal to (0.001) ($p < .05$), we conclude that human capital statistically significantly predicted the financial perspective.

The significant effect of HC on financial performance may not be immediate, investing in HC development is a strategic long-term investment that can yield positive financial returns over time. The results above indicate that Condor Electronics' investments in its HC are effective, through enhancing productivity, product/service quality, fostering innovation and creativity, increasing customer satisfaction and retention, reducing employee turnover, and attracting top talents. This also indicates that Condor Electronics have well-aligned its strategic decisions with its financial goals, focusing on attracting HC as a strategic approach to achieve success and competitiveness in the market.

According to Table 25, the unstandardized coefficient B for organizational capital is equal to (.024), while the t-value is equal to (.281) and "Sig" is equal to (.779) ($p > .05$), we conclude that organizational capital is not statistically significantly predicted the financial perspective.

The non-significant effect of OC on the financial perspective also indicates that Condor Electronics needs to focus on aligning its structure with its financial decisions and strengthening its infrastructure of OC elements to enable structure flexibility. The results also can indicate a lack of alignment between OC and financial decisions; thus, Condor Electronics should focus on ensuring that its structure supports the achievement of financial goals, this will promote flexibility and enable employees to actively contribute to financial outcomes. by investing in OC, Condor Electronics is likely to improve its financial performance.

According to table 25, the unstandardized coefficient B for relational capital is equal to (.494), this means that for each increase in relational capital, there is an increase in financial performance of (.494). The statistical significance of relational capital can be tested, while the t-value is equal to (5.006) and "Sig" is equal to (0.000) ($p < .05$), we conclude that relational capital statistically significantly predicted the financial perspective.

These results indicate that the attention and focus of Condor Electronics on strengthening the connection between RC and its customers, suppliers, and other stakeholders positively affect its financial performance. Thus, Condor Electronics' ability to effectively algin its RC with its financial goals depends on establishing strong customer relationships, strategic partnerships, and supplier networks, leading to improved sales, profitability, and achieved financial goals. The significant effect of RC on the financial perspective indicates the importance of investing in these external relationships as a crucial engine to drive sustainable financial growth and competitive advantage for the Condor Electronics market.

H0.2: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to organizational and profile variables, at a significance level (α= 0.05).

H0.2.1: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to "gender", at a significance level (α= 0.05).

To test this hypothesis, the T-Test Independent-samples test was applied, and the results are as shown in the following table:

Table 18: T-Test Independent- samples (gender)

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	Df	Sig.	Mean Difference	Std. Error Difference
SP	Equal variances assumed	.526	.469	.345	168	.731	.03335	.09674
	Equal variances not assumed	-	-	.347	73.310	.730	.03335	.09611

Source: IBM SPSS Statistics V. 26 Output

Table 26 shows the results of the independent samples t-test. Levine's test of equality of variances is testing the homogeneity of variance assumption, t-test assumes that the variance of independent groups or standard deviation is the same in both samples -not exactly the same, but very close-.

The p-value of Levene's test (sig) is equal to (.731) > 0.05, so we accept the null of Levene's test and conclude that the variance in SP is not significantly different due to the gender variable -the stander deviations are equal-. The positive t-value indicates that the SP for the second group "female", is less than the mean for the first group "male" (3.633 - 3.599 = .034).

Since p < .731 is more than our chosen significance level α = 0.05, we can accept the null hypothesis, and conclude that the SP has no significant difference between males and females. ($t_{73.310}$ = .345, p < .731). The mean SP for males was greater than the mean SP for females.

H0.2.2: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to "age", at a significance level (α= 0.05).

To test this hypothesis, One-Way-ANOVA was performed, the One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable (strategic performance) by a single factor independent variable "age". The outputs are shown in the following table:

Table 19: The One-Way analysis of variance (ANOVA) (age)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.054	2	.027	.090	.914
Within Groups	50.484	167	.302		
Total	50.539	169			

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.

A one-way ANOVA was performed to compare the variance in IC is significantly different due to the age variable.

It is clear that the calculated F score is (.090), and the significance level is (.914), which is more than the approved significance level (α = 0.05). Thus, one-way ANOVA in table 27 revealed that there is no statistically significant difference in SP due to the age variable.

H0.2.3: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to "academic qualification", at a significance level (α= 0.05).

To test this hypothesis, One-Way-ANOVA was performed, the One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable (strategic performance) by a single factor independent variable "academic qualification". The outputs are shown in the following table:

Table 20: The One-Way analysis of variance (ANOVA) (academic qualification)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5.423	6	.904	3.266	.005
Within Groups	45.115	163	.277		
Total	50.539	169			

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.

A one-way ANOVA was performed to compare the variance in strategic performance significantly different due to the academic qualification variable.

It is clear that the calculated F score is (3.266), and the significance level is (.005), which is the approved significance level (α = 0.05). Thus, one-way ANOVA in table 28 revealed that there is a statistically significant difference in SP due to the academic qualification variable. This can be explained by the skilled and qualified employees within the firm, whereas the competencies and knowledge of employees are improved by their qualifications which are maintaining and investing in the HC of the firm, this can drive overall strategic performance.

H0.2.4: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to "current position", at a significance level (α= 0.05).

To test this hypothesis, One-Way-ANOVA was performed, the One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable (strategic performance) by a single factor independent variable "current position". The outputs are shown in the following table:

Table 21: The One-Way analysis of variance (ANOVA) (current position)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.462	2	.231	.772	.464
Within Groups	49.684	166	.299		
Total	50.146	168			

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.

A one-way ANOVA was performed to compare the variance in strategic performance is significantly different due to the "current position" variable.

It is clear that the calculated F score is (.772), and the significance level is (.464), which is more than the approved significance level (α = 0.05). Thus, one-way ANOVA in table 29 revealed that there is no statistically significant difference in SP due to the "current position" variable.

H0.2.5: There are no significant differences in the respondents' perceptions about the level of strategic performance, due to the "number of experience years", at a significance level (α= 0.05).

To test this hypothesis, One-Way-ANOVA was performed, the One-Way ANOVA procedure produces a one-way analysis of variance for a quantitative dependent variable (strategic performance) by a single factor independent variable "number of experience years". The outputs are shown in the following table:

Table 22: The One-Way analysis of variance (ANOVA) (N° of experience years)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.465	4	.866	3.036	.019
Within Groups	47.074	165	.285		
Total	50.539	169			

Source: IBM SPSS Statistics V. 26 Output

*Significance level at α= 0.05.

A one-way ANOVA was performed to compare the variance in strategic performance is significantly different due to the "number of experience years" variable.

It is clear that the calculated F score is (3.036), and the significance level is (.019), which is less than the approved significance level (α = 0.05). Thus, one-way ANOVA in table 30 revealed that there is a statistically significant difference in SP due to the "number of experience years"

variable. That makes so much sense, because the strategic performance is a result of the integrated efforts of experienced human resources within the firm, that IC is more effective and helpful to achieve its goals, experienced employees are crucial to ensure strategic success through aligning HC to the strategy and vision of the firm, they know better and more familiar and flexible active with the inner firm environment (know + know-how + know-to be).

Conclusion:

In conclusion of this empirical study, since we were studying the intellectual capital` effect on strategic performance in Condor Electronics - Bordj Bou Arreridj, we can summarize the main results as follows:

- The relevance score for intellectual capital is high, with an arithmetic mean of (3.693) and a standard deviation of (.448).
- The relevance score for strategic performance is relatively medium, with arithmetic mean (3.624) and standard deviation (.546).
- There is a statistical significance of the intellectual capital 'effect on strategic performance, with an unstandardized coefficient (B = 71.5%) of strategic performance differences predicted by intellectual capital, for the rest of the percentage (28.5%), it is due to other factors that are not within this model. The value of the correlation coefficient (R = 62.9%) indicates that the correlation between intellectual capital and strategic performance is a strong positive correlation.
- There is a significance effect of human capital and relational capital on strategic performance, whereas relational capital has a greater effect on strategic performance with an unstandardized coefficient (B = 39.7%) and t-value of (5.829) and "Sig" is equal to zero ($p < .05$), then the human capital effect with an unstandardized coefficient (B = 28.4%) and t-value of (3.304) and "Sig" is equal to (.001) ($p < .05$). While the organizational capital has no statistically significant effect on strategic performance.
- The relational capital has a greater effect on all the BSC's perspectives (the growth and learning perspective, internal process, customer, and financial perspectives). Whereas the relational capital has a greater effect on the financial performance, then the internal business processes, then the customer perspective, then growth & learning perspective, with t-values in the order as follows (5.006), (4.743), (4.725), and (3.392).
- The human capital has a significance effect on (the growth and learning perspective, internal process, and financial perspectives). Whereas the human capital has a greater effect on financial performance, then the internal business processes, then the growth & learning perspective, with t-values in the order as following (3.327), (2.991), (2.278).
- The organizational capital does not have a significance effect on any of the BSC's perspectives.
- There is a statistically significant difference in SP due to the academic qualification and the number of experience years variables.
- There is no statistically significant difference in SP due to the gender, age, and current position variables.

Conclusion

Conclusion

I. Main findings and model creation

It is agreed that IC is a strategic key resource for creating strategic value and sustainable competitive excellence, this thesis proposed to analyze and determine the effect of intellectual capital on strategic performance, through the adoption of BSC. Therefore, an empirical study has been performed and the main findings are exposed as the following:

- **In the chapter of systematic review**, we have discussed the importance of IC to drive strategic performance across a range of industries and contexts. Through effective management and investment in IC, firms can boost their competitiveness and strategic success. This review findings can assist to develop more effective strategies for managing IC and upgrading firms` strategic performance. A bibliometric analysis was carried out on publications yielded from the Scopus database, in the period between 2003-2023. We have suggested a research model for future studies based on the gaps in the analyzed reviews.
- **In the chapter of theoretical framework strategic performance**, We have discussed the most important concepts of strategic performance, with a focus on the most important approaches to measuring strategic performance and how the BSC can be used as a strategic methodology to measure and manage strategic performance and achieve value for the firms.
- **In the chapter of the theoretical framework of intellectual capital**, a resource-based view is a strategic approach that emphasizes that achieving competitive excellence is not just about the outer environment with various variables, as far as its holdings of internal resources, which must be taken into consideration when formulating strategy.

Depending on the RBV is based on two assumptions: heterogeneity and mobility of resources. Whereas the firm's capabilities and the core competencies, skills, and knowledge it possesses contribute in a significant manner to the use of the firm's resources. Based on these assumptions and the fact that internal resources and their uniqueness a strategic and crucial factor for the excellence of a firm's performance, where through the assumptions of the RBV and the integration and combination of the capabilities and resources, the firm, can obtain intellectual capital that contributes to achieving high performance, through human capital which generates and earns the firm an organizational capital, which can also contribute to achieving distinctive relationships with stakeholders, which distinguishes the firm’ performance and create a value compared to competitors.

In other words, the firm's capabilities, core competencies, and human capital are the intangible and crucial resources in achieving high performance through professionalism in the use of available resources. Strategic flexibility in adapting and facing changes in the business environment as well as creating (sniping) opportunities for achieving sustainable competitive advantage.

So, it has become the main strategic bet represented in the acquisition and control of resources and core competencies that allow excellence of the firm's performance compared to its competitors and expand their activities and possess sufficient flexibility to adapt to the changing requirements of the business environment.

It is noted that studies have not touched in some detail on how resources and capabilities affect on firm’s performance and how RBV explains the firm's achievement of competitive advantage in a complex and dynamic environment through resources and capabilities, in other words, RBV

lacks the practical and experimental aspect of explaining the firm's achievement of competitive advantage through its intangible resources, and how empirically resources and capabilities can improve or decrease the firm's performance. From this perspective, there is a need for more emphasis on the practical framework.

- **From the statistical analysis of the empirical study**, we have yielded the following results:
  a) The relevance score for intellectual capital is high, with an arithmetic mean of (3.693) and a standard deviation of (.448).
  b) The relevance score for strategic performance is relatively medium, with arithmetic mean (3.624) and standard deviation (.546).
  c) There is a statistical significance of the **intellectual capital 'effect on strategic performance**, with an unstandardized coefficient (B = 71.5%) of strategic performance differences predicted by intellectual capital, for the rest of the percentage (28.5%), it is due to other factors that are not within this model. The value of the correlation coefficient (R = 62.9%) indicates that the correlation between intellectual capital and strategic performance is a strong positive correlation.
  d) There is a **significance effect of human capital and relational capital on strategic performance**, whereas relational capital has a greater effect on strategic performance with an unstandardized coefficient (B = 39.7%) and t-value of (5.829) and "Sig" is equal to zero ($p < .05$), then the human capital effect with an unstandardized coefficient (B = 28.4%) and t-value of (3.304) and "Sig" is equal to (.001) ($p < .05$). While the organizational capital has no statistically significant effect on strategic performance.
  e) **The relational capital has a greater effect** on all the BSC's perspectives (the growth and learning perspective, internal process, customer, and financial perspectives). Whereas the relational capital has a greater effect on the financial performance, then the internal business processes, then the customer perspective, then growth & learning perspective, with t-values in the order as follows (5.006), (4.743), (4.725), and (3.392).
  f) **The human capital has a significance effect on (the growth and learning perspective, internal process, and financial perspectives**). Whereas the human capital has a greater effect on financial performance, then the internal business processes, then the growth & learning perspective, with t-values in the order as following (3.327), (2.991), (2.278).
  g) **The organizational capital does not have a significance effect on any of the BSC's perspectives.**
  h) There is a statistically significant difference in SP due to the academic qualification and the number of experience years variables.
  i) There is no statistically significant difference in SP due to the gender, age, and current position variables.

II. Limitations and suggestions for future research

Any scientific investigation inevitably incurs its limitations. In order to give more credibility to the results of this study the limitations detected in the investigations must become explicit, which must be taken into account when interpreting the results and in future investigations.

The fact that the empirical study was based only on one firm, it would be interesting to apply this subject to multiple firms in the same sector in terms of innovation characteristics and strategic aspects.

A lot of important research topics can be derived from this research for future exploration. We suggest focusing efforts on IC and especially human capital as the core resource in creating value. The distinction of human capital is a result of effective investment in its development as Shultz's famous statement "The most valuable investment, is what invests in humans". HC can contribute to creating intellectual capital for the firm and achieve excellent strategic performance.

The effect of organizational culture and inner processes on intangible assets, especially in must be taken into consideration, by seeking to realize the strategic flexibility in dealing with continuous changes in the internal and external environment. We believe managers may take an important step towards sustainable excellence, by applying psychological exams and measurements to manage talents within the firms, as well as to create a dynamic mechanism to transfer inner knowledge of the firm's human capital and to maintain it.

III. Future research suggestions

For future research topics, it is suggested to analyze the relationship between IC and strategic performance in a group of hospitals or a group of research and development centers, it would have a very interesting and important added value to the results of the empirical study, which helps to manage the strategies of those firms based on their IC.

There is a lack of qualitative research on this subject, to come up with approaches that can be applied in the strategic processes to achieve the firm's vision. Moreover, focussing on mediating variables such as cross-cultural factors and talent management mechanisms and their impact on strategic performance.

Finally, we believe this subject would add important value if we applied it to the healthcare sector through the intellectual capital management mechanisms, the talent and core competencies as a main engine of competitive excellence, and more importantly enhance the service to patients, stakeholders, etc.

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Appendices

Appendices

Appendice I: Survey applied in Condor Electronic-Bordj Bou Arreridj (English version)

University Mohamed Khider Biskra
Faculty of Economics, Commerce and Management Science
Management Department

Dear Madam...Dear Sir,

It is an honor for us to put in your hands this survey, which was designed as a tool of collecting the primary data necessary for the research that we are preparing in order to complete the PHD thesis in Human Resources management entitled:

"**Intellectual Capital 'effects on firms' strategic performance- An empirical study in Condor Electronics, Bordj Bou Arreridj**"

We aim through this research to clarify the Intellectual Capital 'effects on firms' strategic performance. Given the importance of your opinion as you represent the human capital in this firm, the success of this scientific research depends on your answer. Appreciating your support of science and knowledge.

We assure you that your answer will only be used for scientific research purposes.

Sincer greetings, thanks, and gratitude.

Social and functional characteristics: Kindly tick the appropriate field

Gender: Male ☐ Female ☐

Age: Less than 40 ☐ 40-50 ☐ 51-60 ☐ years old

Your position: Top management ☐ Operational management ☐ Executive management ☐

No of years of experience: 3-5 years ☐ 5-10 years ☐ >10 years ☐

Your academic qualification is: High School ☐ Senior Technician ☐

Diploma in Applied Studies (DEUA) ☐ Bachelor ☐

Engineering ☐ Master ☐ PhD ☐

Appendices

Please tick the choice as you see fi, from among the available options that measure your degree of approval.

A/ Intellectual capital dimensions and measurement terms

		Unsignif-icant	Of low significant	Neutral	Signif-icant	Extremely significant
Human capital						
01	The individuals have good skills for their work					
02	This firm's recruitment program is accordance with organizational development					
03	The firm`s human resources are best in the industry					
04	The firm gives attention to upgrade its competencies management through training program					
05	This firm`s education and training program are compatible with the training needs of individuals					
06	The firm` training program upgrade and develop the required skills					
07	This firm's training program is compatible with the modern requirements of work					
08	This firm's recruitment program attaches great importance to recruiting and maintaining competencies					
09	Employees are proud to work in this firm					
10	Work in this firm may be a challenge to develop the competencies of individuals					
11	This firm's individuals are devoted and committed to the firm`s goals due the recognition for their efforts					
12	This firm values the contributions of exceptional individuals in the workplace					
13	This firm's individuals have innovative ideas to adapt with market changes well					
Organizational capital						
14	This firm's individuals are highly empowered					
15	This firm supports managers and staffs to communicate well besides its interest in their performance					
16	Leadership styles contribute to motivating individuals to take initiatives					
17	This firm' s constantly encourages and improves teamwork environment					
18	Cooperation across departments in this firm is well developed					
19	The organizational structure is flexible to the changes in this firm					
20	Organizational culture supports innovative ideas and solutions in this firm					

21	Knowledge sharing across organizational levels is well supported in this firm					
22	Individuals are well empowered with greater power and responsibilities in this firm					
23	This firm is interested in moving towards a greater emphasis on E-management.					
Relational capital						
24	These firm places great importance on understanding and addressing the aspirations and concerns of its customers.					
25	This firm's customer is considered in top priority					
26	This firm is committed to enhancing organizational loyalty among its individuals					
27	This firm is working to improve the perceived image of its brand					
28	Destination of this firm is important for attracting consumers					
29	This firm`s reputation is valued by customers better than competitors					
30	This firm's market is constantly studied to determine and launches what customers want					
31	This firm offers value added service or benefits to certain customers					
32	This firm is committed to ensuring after-sales services for its products					
33	This firm is well oriented to build good relationships among its individuals and with its customers					

B/ Strategic Performance

The level of strategic performance is measured through the BSC as a strategic thinking tool. It is based on four perspectives: growth and learning, internal processes, customers, and financial aspects.

		Unsignif-icant	Of low significant	Neutral	Signif-icant	Extremely significant
The Growth and learning perspective (Can we continue to improve and create value?)						
01	This firm is committed to providing continuous learning opportunities for individuals					
02	This firm is focuses on attracting competent individuals					
03	This firm is committed to continuously develop its information technology					
04	This firm has training programs for individuals to upgrade their competencies					
05	This firm`s organizational environment is motivating an increase in job performance					

06	This firm is committed to improve a pleasant working atmosphere					
Internal business process perspective (What must we excel at?)						
07	This firm has advanced technological work systems					
08	This firm is committed to produce according to the required norms					
09	This firm adopts a policy of continuous improvement in all its processes					
10	This firm is committed to develop its work methods continuously					
11	There is flexibility in making changes to product specifications					
12	This firm carries out regular maintenance to minimize breakdowns					
13	This firm encourages the creative thinking to solve its problems during the production processes					
14	This firm is well oriented to R&D to improve its products					
15	This firm produces new products					
16	This firm is committed to ensuring timely after sales services					
Customer perspective (How do customers see us?)						
17	This firm is committed to resolving customer complaints in the shortest possible time					
18	This firm constantly improve the quality of its products in line with customer expectations					
19	This firm is working on increasing its sales outlets					
20	This firm is committed to satisfy its customers and earn their loyalty					
21	This firm aims to acquire new customers to increase its market share					
22	There is a focus on delivering products to customers within specified deadlines					
23	This firm cares about ecological and social concerns to enhance the perceived image by customers					
Financial perspective (How do we look to shareholders?)						
24	This firm conducts a financial performance analysis to assess its most profitable activities on a regular basis					
25	This firm is committed to achieving financial balance and meeting its financial obligations					
26	The financial decisions are aligned with the firm's strategy					
27	This firm’s production cost is lower than its competitors					
28	The firm`s increased profits and economic value creation (EVA) due R&D					

Appendice II: Survey applied in Condor Electronic-Bordj Bou Arreridj (Arabic version).

جامعة محمد خيضر بسكرة

كلي ة العلوم الاقتصادية والتجارية وعلوم التسيير

قسم علوم التسيير

سيدتي المحترمة... سيدي المحترم،

تحية طيبة، وبعد،

شرف لنا أن نضع بين أيديكم هذه الإستبانة التي صممت كوسيلة لجمع المعلومات الأولية اللازمة للبحث الذي نقوم بإعداده قصد استكمال أطروحة الدكتوراه في إدارة الموارد البشرية بعنوان: "**أثر رأس المال الفكري في الأداء الاستراتيجي ـ دراسة ميدانية بمؤسسة كوندور للالكترونيات، برج بوعريريج**"

"**Intellectual Capital 'effects on firms' strategic performance- An empirical study in Condor Electronics, Bordj Bou Arreridj**"

الهدف من هذا البحث هو بيان أثر رأس المال الفكري في الأداء الاستراتيجي في المؤسسة محل الدراسة. ونظرا إلى أهمية رأيكم باعتباركم تمثلون رأس المال البشري في هذه المؤسسة، فإن نجاح هذا البحث العلمي يعتمد على دقة إجابتكم.

مثمنين لكم دعمكم للعلم والمعرفة.

نؤكد لكم بأن إجابتكم لن تستخدم إلا لأغراض البحث العلمي فقط.

تقبلوا منا خالص عبارات الاحترام والشكر والامتنان.

القسم الأول: البيانات الشخصية والوظيفية

إن الغرض من هذا القسم هو التعرف على البيانات الشخصية والوظيفية لموظفي المؤسسة محل الدراسة بغية تحليل النتائج

القسم الأول: البيانات الشخصية والوظيفية

إن الغرض من هذا القسم هو التعرف على البيانات الشخصية والوظيفية لموظفي المؤسسة محل الدراسة بغية تحليل النتائج لاسيما بما يتعلق بعلاقتها بموضوع البحث. يرجى وضع إشارة (X) أمام الإجابة المناسبة.

(1) الجنس: ذكر ☐ أنثى ☐

(2) الفئة العمرية: أقل من 40 سنة ☐ من 40-50 سنة ☐ من 51-60 سنة ☐

من 61 سنة فأكثر ☐

(3) المؤهل العلمي: ثانوي ☐ تقني سامي ☐ دبلوم دراسات تطبيقية (DEUA) ☐

ليسانس ☐ مهندس ☐ ماجستير ☐ دكتوراه ☐

(4) الوظيفة الحالية: الإدارة العليا ☐ الإدارة التنظيمية ☐ الادارة التشغيلية ☐

(5) عدد سنوات الخدمة في المؤسسة الحالية: من 3-5 سنة ☐ من 5-10 سنوات ☐

10 سنوات فأكثر ☐

القسم الثاني: محاور الإستبانة

هذه مجموعة عبارات الغرض منها قياس مستوى رأس المال الفكري والأداء الاستراتيجي في المؤسسة محل الدراسة. يرجى وضع إشارة (X) أمام الإجابة المناسبة.

المحور الأول: رأس المال الفكري

رأس المال الفكري يمثل مزيج متكامل ومتفاعل وديناميكي لرأس المال البشري ورأس المال التنظيمي ورأس المال العلائقي، مما يسمح بإنشاء قيمة استراتيجية للمؤسسة.

الرقم	العبارات	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
رأس المال البشري						
01	تتوافق مهارات الأفراد مع الوظائف الموكلة لهم					
02	تتلاءم سياسة التوظيف مع التطوير التنظيمي للمؤسسة					
03	لدى المؤسسة موارد بشرية أفضل من المنافسين					

04	يتم الاهتمام بإدارة الكفاءات في المؤسسة					
05	تتلاءم البرامج التدريبية مع الاحتياجات التدريبية للأفراد					
06	تساهم برامج التكوين في تنمية المهارات المطلوبة					
07	تتوافق برامج التدريب مع المتطلبات الحديثة للعمل					
08	تول المؤسسة أهمية كبيرة لتوظيف الكفاءات والمحافظة عليهم					
09	يشعر الأفراد بالاعتزاز لانتمائهم للمؤسسة					
10	يشكل العمل تحدي لتنمية كفاءات الأفراد					
11	يشعر الأفراد بتعنيتهم بأهداف المؤسسة والاعتراف بمجهوداتهم					
12	تهتم المؤسسة بمساهمات الأفراد المميزون في العمل					
13	يقدم بعض الافراد حلولا ابتكارية جديدة لمشاكل العمل					
رأس المال التنظيمي						
14	يتم تمكين وتفويض الصلاحيات للأفراد في المؤسسة					
15	تهتم المؤسسة بالعلاقات بين الأفراد الى جانب اهتمامها بالأداء					
16	تساهم الأنماط القيادية في دفع الأفراد وزيادة مبادراتهم					
17	تشجع المؤسسة العمل الجماعي وبناء فرق العمل					
18	يتم التنسيق الجيد لتنظيم العمل بين مختلف الوحدات الإدارية					
19	يتوافق الهيكل التنظيمي مع التغيرات التي تشهدها المؤسسة					
20	تدعم ثقافة المؤسسة مبادرات الافراد لتقديم حلول ابداعية					
21	هناك اتصال متبادل بين مختلف الوحدات التنظيمية					
22	يتم تمكين الافراد ومنحهم صلاحيات ومسؤوليات أكبر					
23	تهتم المؤسسة بالتوجه أكثر نحو الإدارة الالكترونية					

رأس المال العلائقي						
24	تولي المؤسسة اهتمام كبير لتطلعات وانشغالات الزبائن					
25	تهتم المؤسسة بعملائها باعتبارها أهم أولوياتها					
26	تسهر المؤسسة على زيادة الولاء التنظيمي لافرادها					
27	تعمل المؤسسة على تحسين الصورة المدركة لعلامتها التجارية					
28	تساهم رسالة المؤسسة في جذب العملاء					
29	لدى المؤسسة سمعة جيدة					
30	تهتم المؤسسة بدراسة السوق لتحديد الرغبات التي يتطلع إليها الأفراد					
31	تقدم المؤسسة امتيازات لبعض العملاء					
32	تسهر المؤسسة على ضمان خدمات ما بعد البيع لمنتجاتها					
33	تهتم الإدارة ببناء علاقات جيدة مع مختلف العاملين					

المحور الثاني: الأداء الاستراتيجي

يتم قياس مستوى الأداء الاستراتيجي من خلال بطاقة الأداء المتوازن باعتبارها أداة للتفكير الاستراتيجي، على أساس 04 منظورات ممثلة في النمو والتعلم، العمليات الداخلية، العملاء و المحور المالي.

الرقم	العبارات	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
منظور النمو والتعلم: هل يمكننا الاستمرار في التحسن وخلق القيمة؟						
01	تهتم الإدارة بتوفير فرص التعلم المستمر للأفراد					
02	تحرص المؤسسة على استقطاب الكفاءات					
03	تهتم المؤسسة بتحديث تكنولوجيا المعلومات بشكل مستمر					
04	تقدم المؤسسة برامج تدريبية للأفراد للرفع من كفاءتهم					

05	يحفز المناخ التنظيمي على زيادة الأداء الوظيفي					
06	تسهر المؤسسة على تحسين مناخ تنظيمي ملائم للعمل					
منظور العمليات الداخلية: ما الذي يجب ان نتميز فيه؟						
07	تتوافر بالمؤسسة أنظمة عمل تكنولوجية متطورة					
08	تسعى المؤسسة الى الانتاج بالمواصفات المطلوبة					
09	تتبنى المؤسسة سياسة التحسين المستمر في جميع العمليات					
10	تحرص المؤسسة على التطوير المستمر لطرائق العمل					
11	هناك مرونة في اجراء تغييرات على مواصفات المنتج					
12	تقوم المؤسسة باعمال الصيانة الدورية للحد من الاعطاب					
13	تعتمد المؤسسة على التفكير الابداعي للافراد في حل المشكلات التي تواجهاها خلال عمليات الإنتاج					
14	تولي المؤسسة اهتمام بعمليات البحث والتطوير لتحسين المنتجات					
15	تقوم المؤسسة بطرح منتجات جديدة					
16	تحرص المؤسسة على ضمان خدمات ما بعد البيع في الآجال المناسبة					
منظور الزبائن: كيف ينظر الينا الزبائن؟						
17	تهتم المؤسسة بمعالجة شكاوى الزبائن في أقصر مدة					
18	تسعى المؤسسة الى تحسين جودة منتجاتها باستمرار تماشيا وتطلعات الزبائن					
19	تعمل المؤسسة على زيادة نقاط بيع منتجاتها					
20	تحرص المؤسسة على ارضاء زبائنها وولائهم					
21	تسعى المؤسسة إلى كسب عملاء جدد لزيادة حصتها السوقية					

22	يتم التركيز على تسليم المنتجات للعملاء في الآجال المحددة					
23	تحرص المؤسسة على الاهتمامات الايكولوجية والاجتماعية لتحسين الصورة المدركة من قبل العميل					
المنظور المالي: كيف ترانا الأطراف ذات المصلحة؟						
24	تقوم المؤسسة بدراسة مردوديتها المالية لتقييم أنشطتها الأكثر ربحية دوريا					
25	تحرص المؤسسة على بلوغ التوازن المالي وسداد التزاماتها					
26	تتوافق القرارات المالية مع استراتيجية المؤسسة					
27	تعمل المؤسسة على تقديم منتجات بتكلفة أقل من المنافسين					
28	تساهم عمليات البحث والتطوير في زيادة الأرباح وانشاء القيمة الاقتصادية المضافة (EVA) للمؤسسة					

Appendice III: License to conduct the empirical study in Condor Electronic-Bordj Bou Arreridj

REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE
MINISTERE DE L'ENSEIGNEMENT SUPERIEUR
ET DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITE MOHAMED KHIDER BISKRA
Vice-Rectorat des Relations Extérieures, de la Coopération,
de l'Animation et de la Communication et des Manifestations Scientifiques

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي
جامعة محمد خيضر بسكرة
نيابة مديرية الجامعة للعلاقات الخارجية و التعاون
و التنشيط و الاتصال و التظاهرات العلمية

الرقم: 346/ان.م.ج.ع.خ /2022

إلى السيـــد المحترم/ مؤسسة كوندور للإلكترونيات
– ولايــة برج بوعريريج –

الموضوع: طلب ترخيص للقيام بدراسة ميدانية

تحية طيبة و بعد،

في إطار التعاون العلمي بين الجامعة والمؤسسات الوطنية الاقتصادية و الخدمية، يسعدنا أن نطلب منكم تقديم التسهيلات و المساعدات الممكنة للطالب (ة):

الاسم و اللقب: عـديلة نـادية

الرتبة: طالبة مسجلة في السنة الخامسة دكتوراه

كلية: العلوم الاقتصادية و التجارية و علوم التسيير

قسم: علوم التسيير

تخصص: إدارة الموارد البشرية

بغرض القيام بدراسة ميدانية لاستكمال الجانب التطبيقي لمذكرة الدكتوراه المعنونة :

"Intellectual Capital 'effects on firms strategic performance"

ولكم مني سيـــدي فـــائق عبارات الاحترام و التقدير

BENMOUSSA Fadila
Chargée
de la Formation

بسكرة في : 09- 06 - 2022

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و العلاقات الخارجية و التعاون و التظاهرات العلمية

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و التنشيط و الإتصال و التظاهرات العلمية

أ.د/ محمـــود دبابـــش