The Impact of Intellectual Capital on Customer Satisfaction and Loyalty in Startups: An Applied Study on Yassir Company.

Nabti Sara [1] / **Laboratory for the Evaluation of Algerian Capital Markets and Their Development Prospects in the Context of Globalisation (LEMAC), Ferhat Abbas University - Setif 1 – Algeria, nabti.sara@univ-setif.dz**

Mechri Hasna / **Laboratory of Partnership and Investment in Small and Medium Enterprises in the Euro-Maghreb Space, Ferhat Abbas University - Setif 1 – Algeria, mechrihasna@univ-setif.dz**

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***Abstract*:**

This research aims to examine the impact of the dimensions of intellectual capital (human, structural, relational) on customer satisfaction and loyalty at Yassir Company, while exploring the role of customer satisfaction as a mediating variable. The study employs a descriptive analytical approach supported by statistical methods using SPSS software to test the hypotheses.

The results showed that structural and relational capital significantly influence customer satisfaction, which is a key factor in enhancing loyalty. It was also observed that the effect of these two dimensions on loyalty decreases or disappears when satisfaction is included as a mediator, confirming that customer satisfaction fully mediates the relationship. Conversely, human capital did not have any notable effect on either satisfaction or loyalty, reflecting its limited role in shaping the customer experience.

Keywords: intellectual capital, customer satisfaction, loyalty at Yassir.

Jel Classification Codes: *O34; M31; L86.*

***Résumé*:**

Cette recherche vise à examiner l'impact des dimensions du capital intellectuel (humain, structurel, relationnel) sur la satisfaction et la fidélité des clients de l'entreprise Yassir, tout en explorant le rôle de la satisfaction client en tant que variable médiatrice. L'étude adopte une approche analytique descriptive appuyée par des méthodes statistiques utilisant le logiciel SPSS pour tester les hypothèses.

Les résultats ont montré que le capital structurel et le capital relationnel influencent significativement la satisfaction client, qui constitue un facteur clé dans le renforcement de la fidélité. Il a également été observé que l'effet de ces deux dimensions sur la fidélité diminue ou disparaît lorsque la satisfaction est incluse en tant que médiateur, confirmant ainsi que la satisfaction client joue pleinement un rôle médiateur dans cette relation. En revanche, le capital humain n'a exercé aucun effet notable sur la satisfaction ou la fidélité, reflétant son rôle limité dans la construction de l'expérience client.

Mots-clés : capital intellectuel, satisfaction client, fidélité chez Yassir.

Jel Classification Codes: *O34; M31; L86.*

1. **Corresponding author:** Nabti Sara, **e-mail address: sara_nabti@hotmail.fr**

I. Introduction:

The modern business environment is characterised by increased competition driven by technological advancements, greater globalisation, and shifting client expectations. In this context, success no longer depends solely on delivering high-quality services; it now relates to the organisation's ability to utilise its intellectual resources, including knowledge, expertise, effective systems, and strong relationships with various stakeholders. Intellectual capital is regarded as one of the key pillars that help organisations understand customer needs, anticipate their expectations, and offer innovative solutions that deliver genuine added value. Consequently, investing in intellectual capital enhances customer satisfaction, which is a strategic aim for startups, as it supports building long-term relationships based on trust and boosts customer loyalty to the organisation.

Yassir, as one of the startups, presents an interesting model for examining the impact of the relationship between the dimensions of intellectual capital and customer satisfaction and loyalty. The company operates in an environment that demands high levels of technical expertise and innovation. It must build strong relationships with customers in a sector characterised by high sensitivity to trust and security.

I. 1. Problem Statement

Startups, especially Yassir, face multiple challenges, including the urgent need to build a sustainable customer base in an increasingly competitive environment. On the other hand, despite the growing interest in intellectual capital as a strategic driver of performance, the relationship between its various components and the achievement of customer satisfaction and loyalty remains a subject of debate between supporters and opponents.

Therefore, the following question can be posed: ***Does intellectual capital and its components affect customer satisfaction and loyalty to the startup 'Yassir'?***

From this problem statement, the following sub-questions emerge:

- What is the availability level of the dimensions of intellectual capital in the Yassir company?
- What is the relationship between intellectual capital and customer satisfaction?
- How does customer satisfaction help improve loyalty among Yassir service users?

I. 2. Study Hypotheses:

Main Hypothesis:

There is a statistically significant effect of intellectual capital on customer satisfaction and loyalty in Yassir Company.

Sub-Hypotheses:

H1: There is a positive impact of dimensions of intellectual capital on customer satisfaction.

H2: There is a statistically significant effect of intellectual capital dimensions on loyalty.

H3: Customer satisfaction mediates the relationship between intellectual capital and customer loyalty.

I. 3. Importance of the Study

The study contributes to bridging the knowledge gap regarding the relationship between intellectual capital and customer satisfaction and loyalty in the context of startups.

It is one of the first studies to address this topic in the Algerian environment, contributing to the development of local scientific research.

It serves as a practical guide on how to invest intellectual capital to improve customer relationships and ensure sustainable growth.

It provides a framework for making informed strategic decisions about investing in intellectual assets.

It offers important insights for developing policies to support startups and the knowledge economy.

It encourages innovation as a key driver of economic growth.

I. 4. Objectives of the Study

To measure the level of availability of intellectual capital with its three dimensions (human, structural, relational) in the Yassir company.

To evaluate the degree of satisfaction and loyalty of Yassir Company's customers.

To analyse the relationships between the dimensions of intellectual capital and customer satisfaction and loyalty;

To provide practical recommendations to improve the investment of intellectual capital of the company, Yassir, in particular, and startups in general.

I. 5. The Methodology:

The study employed the inductive approach when reviewing relevant literature and theories to formulate the study's theoretical framework and construct its hypotheses. In the applied aspect, we relied on a descriptive-analytical method to describe customer satisfaction and loyalty in practice and to analyse the impact of the independent variable (intellectual capital) on the dependent variables (customer satisfaction and loyalty).

To address the problem, the study was divided into the following axes:

Intellectual Capital - Concept and Components;

Customer Experience and Behaviours;

The Theoretical Relationship Between Intellectual Capital and Customer Experience

The Applied Aspect.

The sample was chosen through random sampling, which was used because of the ease of access to customers and the uniformity of the categories.

The sample represents the population to an acceptable degree, as the basic characteristics of the sample were compared with those of the population.

I-6 Previous studies

Nadji Mouhammed, B. Mustapha, Factors Affecting The Success Of Startup Company: A Case Study of YASSIR Transportation Company In Algiers, Journal of Economics and Sustainable Development, Volume: 60 / N°: 60 (2023), P:779-797 :

The aim of the research was to study the impact of the availability of qualified employees, infrastructure, systems, help desk and equipment, and design preparation on the performance and success of the start-up company 'Yassir'.

A questionnaire was used for a sample of 121 employees at the management level, and the information was examined using analytical methods.

The study concluded that each of the above factors has an impact on the success of the start-up company.

Mukran Aldjia, Al-aifa Muhamed, The role of intellectual capital in customer loyalty - case study of Algeria telecom Tébessa agency, Volume: 08 / N°: 02 (2021), P:100-112 :

This study aimed to discover the effect of intellectual capital, with its components (structural capital, human capital, customer capital), on customer loyalty through a field study by Algeria Telecom and the Tebessa agency from the point of view of workers. In order to achieve the objectives of the study, a questionnaire was formulated composed of two main axes, which are a focus for intellectual capital and a focus for customer loyalty, the study sample being composed of 110 workers, chosen at random, and the results of the study indicated that there is a statistically significant impact of intellectual capital on customer loyalty from the point of view of the employees of Algeria Telecom of the Tebessa agency.

Yuliati, Mediation OF Customer Satisfaction And Intellectual Capital: The Effect Of Digital Marketing On Company Performance, Fokus Ekonomi: Jurnal Ilmiah Ekonomi, Volume: 15 / N°: 02 (2020), P:288-306:

The aim of this study is to provide clarity of intellectual capital effects and customer satisfaction as a mediating variable in the relationship between digital marketing for firm performance. The study was conducted on Small and Medium Enterprises (SMEs) in the Kudus district by taking a sample of 134 SME managers, such as owners and operational managers. Through structural equation modelling (SEM) analysis, it is discussed that the mediated hypothesised effect is statistically significant. In other words, intellectual capital and customer satisfaction can bridge the relationship of digital marketing variables to firm performance. This finding helps management in understanding the ability of

internal resources to be able to utilise information technology to support the resources they have. Therefore, SMEs must pay attention to factors both internal and external, agreeing to understand the suitability of the firms in determining the most appropriate use of digital marketing.

Fellague Mohamed, Youcef Ahmed, Intellectual capital and its role in achieving sustainability of competitive advantage of the economic institution – case study of SAIDAL GROUP Pharmaceutical industry, Ma'arif Magazine, Volume: 14 / N°: 01 (2019), P:272-313 :

This study aimed to identify the impact of intellectual capital on achieving sustainable competitive advantage in the Algerian economic institutions. We selected a random sample of 250 employees in the pharmaceutical industry in Sidal. We focused on factories that have a larger pool of employees with excellent competitive human resources for the sake of achieving the objectives of the study. The study presented a comprehensive recommendation to focus on high-competence human resources, which represent intellectual capital, and to place greater emphasis on the customer. Additionally, it seeks to win satisfaction and loyalty to maintain and deepen the relationship with customers, because they are very important resources in achieving sustainable competitive advantage.

Despite the numerous studies that have addressed intellectual capital and its relationship to institutional performance or customer loyalty, a review of the previous literature revealed a clear difference between them and the current research problem, which makes its study a valuable scientific and practical addition. In previous studies, we found an absence of integration between intellectual capital and customer satisfaction as a direct or intermediate variable, and a focus on competitive performance rather than customer opinion itself. Therefore, this study focused on researching the direct impact of intellectual capital and customer satisfaction and loyalty based on their opinions.

II. Intellectual capital — concept and components:

II.1. The Concept of Intellectual Capital:

Researchers have varied opinions on the concept of intellectual capital, considering it a modern concept that emerged with the rise of the knowledge economy and its management. This variation is due to the different nature of the problems they addressed during the analysis of the concept of intellectual capital. However, administrative researchers have focused on studying intellectual capital as a true representation of an organisation's ability to compete and achieve success, after material resources represented the real wealth of the organisation.(المنسي & هاني سعيد, 2020, 4) Therefore, it can be said that intellectual

capital has multiple definitions. It was defined by Stewart as "resources consisting of knowledge, information, intellectual property, and experience that can be used to create wealth." It was also defined as "resources that can be used to create profits, representing the recorded cognitive value of the institution that affects the current and future success of the business and establishes its rank compared to other organisations." (نور قصي عبد الرزاق, 2020,ص 101) Youndt defined it as "distinctive capabilities possessed by a limited number of individuals employed in companies that enable them to make distinct intellectual contributions, enabling companies to increase their production and achieve high levels compared to their counterparts."(أمل غالب, 2024,ص 805)

As for Roos, intellectual capital is "non-monetary and intangible resources that are partially or wholly controlled by the entity and contribute directly or indirectly to value creation, as well as being represented in knowledge and other intangible assets that produce or create value in the present or future." (Hejase and all,2016,574) Radhi and Mishiel indicated that intellectual capital is used to refer to the possession of professional knowledge, experience, skill, good relationships, and technological capabilities, which combine to achieve a company's competitive advantage by adding value to key stakeholders." Or it is "the mental capacity of a specific category of human resources that possesses competencies and the ability to create ideas related to creative development within the organization's strategies and objectives, thereby sustaining its competitive advantage. (Hejase and all,2016,575)

Based on the above and considering the dynamic and intangible nature of intellectual capital, it can be defined as" highly distinguished intellectual resources possessed by individuals within an organisation, which can be transformed into competencies, expertise, and creative skills to ensure organisational survival and generate added value."

II.2. Components of Intellectual Capital:

The variance existing in researchers' perspectives on the concept of intellectual capital has been accompanied by differences in categorising its elements and fundamental components. This study focuses on the common classification of intellectual capital: human capital, relational capital, and structural capital.

a. Human Capital: This represents the value that human resources provide to the organisation through the provision of skills, experience, and knowledge. Human capital is also defined as the knowledge stored in the individual's mind, which is personally linked to the individual and is manifested in knowledge, experiences, skills, creativity, and innovation. (Alžbeta and all, 2023, p3)

Additionally, it is embodied in creative workers who can perform good services and produce new products through which customers can be attracted and value created for the organisation. (2023 ,بوشرى & محمد)

Human capital refers to "the value of human resources available to the organisation, calculated according to what has been spent on education, training, social and cultural care, and opportunities for self-learning during the organisation's time." (Alžbeta and all, 2023, p3)

Based on the aforementioned definitions, it can be stated that human capital is represented by employees and their valuable experiences, knowledge, capabilities, and competencies through which a competitive advantage for the organisation can be achieved.

b. Structural Capital: This is considered the other face of organisational capital and refers to all organisational and administrative dimensions of the organisation, such as creativity and innovation that result in patents and production licenses. (nabti & mechri, 2024,p) Daum defines it as "the structures, processes, and procedures that help transform tacit knowledge among employees as quickly as possible into codified knowledge owned by the organisation. The value of structural capital comes through continuous repetition and innovative use of shared knowledge and experience." (Dinko, 2025, p5)

Structural capital is associated with internal processes, infrastructure, culture, information systems, patents, and other systems.

c. Relational Capital: This is evident from the relationship that the organisation establishes with the external environment. It shows the nature of relationships that connect the institution with its customers, suppliers, competitors, or any other party that transforms an idea into a product or service. (محمد & بوشرى, 2023,ص 209)

Alternatively, it encompasses everything related to improving the organisation's external relationships with customers (reputation, customer retention capability, distribution channels...), with suppliers (commitment toward suppliers) or consumer protection organisations, labour unions considered as pressure groups, or with governments. Relational capital is considered the highest value among the components of intellectual capital. (مرزوقي رفيق, 2023 ,ص469)

The degree of integration and interaction among these three elements comprising intellectual capital determines its real value for the organisation.

II.3. The Importance of Intellectual Capital:

Intellectual capital is considered a resource of paramount importance, particularly in light of intense competition and heavy reliance on knowledge, technology, and innovation. Consequently, organisations have begun to give the development of knowledge bases the importance they deserve, along with the necessity of possessing and managing them. Given the effective and growing role of intellectual capital, "Al-Ubairi" considered it the true reflection of companies'

ability to compete and succeed in the labour market. Furthermore, attention to intellectual capital by business organisations will assist them in:

- Creating new knowledge;
- Providing creative capabilities that contribute to problem-solving and developing performance methods within the organisation;
- Supporting the organisation's objective of increasing shares and its efficiency in the capital market;
- Reducing costs and improving productive capacity, thereby enhancing competitive ability;
- Satisfying customers;
- Intellectual capital cannot be imitated and thus creates added value for the organisation;
- Making better investment decisions;

Organisations' exploitation of their intellectual capital also enables the achievement of the following: (مرزوقي رفيق, 2023, ص471)

- Learning from distinguished competitive cases and benefiting from them within the organisation's work framework;
- Identifying existing frameworks for the most important competitive standards while determining how to audit those standards, particularly those related to the core competencies of intellectual capital;
- Enhancing leadership, as knowledge, skills, experiences, and relationships become the most important source for achieving superiority over competitors;
- Attracting investments, considering that investors seek the institution's capacity for future growth, which depends on the efficiency of work teams and organisational knowledge;
- Building strategic relationships and networks through relational capital, which provides institutions with opportunities for expansion and entry into new markets;
- Supporting adaptation to changes, as the work environment is characterised by uncertainty, intellectual capital grants the flexibility to keep pace with developments.

II. Customer experience and behaviours :

In an environment characterised by intense competition in the business world, customer acquisition and retention have become among the top priorities that organisations strive to achieve. This is accomplished by adopting strategies and methods to reach customer needs and desires, not just to satisfy their needs, but to achieve their satisfaction and loyalty.

III.1. The Concept of Satisfaction and its Determinants:

Humans now demand more individualised attention when consuming an item due to the business world's rapid expansion, which forces corporations to contend with fierce rivalry and increasingly stringent regulations.(Hendy, Purnamaningsih, 2023,p1)

Customers compare the product's value with the price and effort expended to obtain it. For customers to be satisfied, these elements need to be equal, or the product's value should exceed them, regardless of the impact of previous experiences or customer expectations.

According to Kotler, customer satisfaction is the positive or negative impression resulting from the purchase and/or consumption experience. It represents a comparison made by the customer between performance and expectations regarding a product. (Philip and all,2015,p4)

This definition adds an important concept: the customer's comparison of expectations derived from previous experiences with the actual performance of the product. The concept of satisfaction has been summarised as the result of an objective judgment.

Customer satisfaction is determined within three fundamental dimensions:(nadia & Hamza, 2020,p628)

a. **Expectations:** Expectations represent the performance that the customer anticipates or expects to receive from acquiring a particular product or brand. This is expressed as the expected value before implementing the purchase decision. The fundamental aspects of customer expectations about the product can be determined as: Expected quality, social costs, and product costs (predictive expectations, normative expectations, and comparative expectations).

b. **Perceived Performance**: Perceived performance represents the actual level of performance that the customer receives as a result of using and consuming the product.

Perception is considered among the criteria adopted in comparison standards theory for measuring satisfaction, represented by (ideal performance and average performance, etc.).

c. **Conformity or non-conformity**: The conformity process is achieved by equating the actual performance of the product with the expected performance.

Non-conformity can be defined as the degree of deviation of product performance from the level of expectation that appears before the purchase process.

We find two cases : (nadia & Hamza, 2020)

Positive deviation: That is, the actual performance is greater than the expected performance, which is a desirable condition that results in a state of satisfaction.

Negative deviation: that is, the actual performance is less than the expected performance, which is an undesirable situation that results in dissatisfaction.

III.2. Concept and Types of Loyalty

Customer loyalty is a psychological behaviour which makes most organisations strive to gain the largest possible number of loyal customers. Studies have shown that retaining customers by 5% increases the organisation's profits by 25% to 95%. (nadia & Hamza, 2020, p631)

a. Concept of Customer Loyalty:

Numerous studies and research have sought to regulate customer behaviour toward products or brands. Sparks provided a comprehensive definition as "a permanent psychological attachment of customers toward service providers, which ultimately leads to the organisation's customers not switching to competitors, with great compatibility with the service provider and preference over competitors." (nadia & Hamza, 2020)

Mown defined it as the degree of positive customer belief regarding the brand, commitment toward it, and intention to continue purchasing it.

From Kotler's perspective, it is the sincere commitment by the customer to repurchase the preferred product or service in the future, despite marketing efforts and external influences aimed at converting customer behaviour to other products. (Philip 2015 ,وآخرون)

b. Types of Customer Loyalty:

There are four types of loyalty: (nadia & Hamza, 2020)

• No Loyalty: Customer behaviour and attitude are characterised by no specific attitude or behaviour toward repurchasing the same brand.

• Spurious Loyalty: The customer purchases due to certain influences, but positive attitudes toward the brand are low, with no intention to repurchase.

• Latent or Attitudinal Loyalty: Here, the customer's attitude is positive toward the brand, but the behavioural tendency to repurchase remains low.

• True Loyalty: Where the behavioural attitude is positive toward the brand and rejects all competitor offers (state of devotion or complete loyalty).

III.3. Customer Retention Strategies:

Leonard and Parasuraman presented a set of strategies that work on customer retention, the most important of which are: (**Suphan, 2017, p.246)**

a. Financial Bunds: Based on providing incentives to encourage customers to repeat purchases and bind them to the organisation for the longest possible period. However, this strategy is easy to imitate and has short-term effects.

b. Social Bunds: Depends on building personal relationships with customers, while continuing to recognise customers and their needs and working to satisfy them in a way that ensures their loyalty.

c. customisation Bunds: This is done by providing flexible offers that can be adapted according to customer needs, or providing many offers, alternatives, and solutions for each customer.

d. Structural Bunds: This strategy depends on sharing information and technology used with customers and integrating relationships for the longest period. This strategy is difficult to imitate and gives the organisation a competitive advantage.

III. Practical aspect:

IV.1. Methodological framework of the study:

A- **Data collection tools:** To examine the impact of intellectual capital on customer satisfaction and loyalty, a questionnaire was used for Yassir customers. Answers were coded using a five-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree). SPSS 27 software was employed for statistical analysis of the data and hypothesis testing.

B. **Study population and sample:** The study involved a random sample of 100 customers who used the Yassir app, without reference to the customer's name.

C. **Reliability of the study instrument:** We employed Cronbach's alpha coefficient to assess the reliability of the axes.

And the results were as follows:

Table 01: Cronbach's Alpha Reliability Coefficient

axis	Cronbach's Alpha Reliability Coefficient	
	Minimum	Maximum
Human Capital	74.3	84.7
Structural Capital	72	83.1
Relational Capital	72.4	84.6
Satisfaction	76.1	89.8
Loyalty	90.8	95.7

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

The above results indicate that the alpha coefficient is satisfactory and adequate for the study's purposes, as it exceeds the minimum acceptable threshold of 60%.

IV.2. Presentation and discussion of the study results:

a- -AAnalysis of the intellectual capital of Yassir:

The study indicates that 61.3% of Yassir app users are female, while 38.7% are male. Regarding usage, 1.6% access the app daily, 30.6% weekly, 19.4% monthly, and 48.4% less often than that.

The assessment by the researchers of Yassir's human capital shows an overall average of 3.50, indicating that human capital is rated as good in this assessment. The findings reveal that the strongest aspect of human capital is that Yassir drivers demonstrate professional behaviour (3.77). Conversely, the weakest area is that Yassir employees lack the necessary skills and experience to solve problems (3.28). This highlights the need to enhance training and ongoing education programmes to improve the efficiency of the company's human resources.

The results of the relational capital analysis showed averages ranging from 3.15 to 3.89, that is, from average to good. The company's good reputation among app users was the highest, while the lowest item was responsiveness to comments and suggestions. The overall average for relational capital was 3.60, indicating the strong relationships it fosters with its customers.

The results also indicated that structural capital is one of Yassir's strengths, with an overall average of 3.83, reflecting a good level. The item 'clear and easy-to-use interface' received the highest rating from respondents, while 'the company provides a clear mechanism for submitting complaints and suggestions' received the lowest (3.31). This underscores that Yassir's organisational structure is generally viewed as good, with potential for enhancement in internal innovation. (Improving the application to provide a clear mechanism for submitting complaints and suggestions).

b- Testing hypotheses and analysing results:

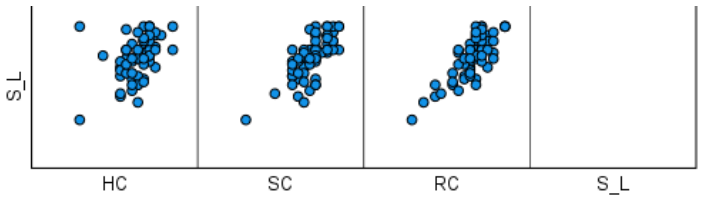
Table 2:Kolmogorov-Smirnov[a]:

	Statistic	df	Sig.
S_L	,098	100	,200*

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

To verify the normality of the data, it must be confirmed that the dependent variable follows a normal distribution and that sig is greater than 0.05 in the table above. Therefore, customer satisfaction and loyalty follow a normal distribution, and the normality condition is satisfied.

Figure 1: Scatter plot representation



Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

We note that the scatter plot for each independent variable with the dependent variable is linear. Therefore, we can say that the relationship between the study variables is a 'linear relationship.'

(H1) There is a statistically significant positive effect of intellectual capital dimensions on customer satisfaction.

Therefore:

- There is a statistically significant positive effect of human capital on customer satisfaction.

- There is a statistically significant positive effect of structural capital on customer satisfaction.

- There is a statistically significant positive effect of intellectual capital on customer satisfaction.

Table 3:Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,804[a]	,647	,629	2,22642

a. Predictors: (Constant), RC, HC, SC

b. Dependent Variable: satisfaction

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From the model summary table, we observe that the correlation between the variables is strong (80.4%) and that 62.9% of the variation in customer satisfaction results from human capital, organisational capital, and relationship capital alone. Additionally, 37.1% of the variation is attributable to other independent variables not included in the model, indicating that the model has good explanatory power.

Table 4: **ANOVA[a]**

Model		F	Sig.
1	Regression	34,850	,000[b]

a. Dependent Variable: satisfaction

b. Predictors: (Constant), RC, HC, SC

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From the ANOVA table, we observed a significance level smaller than 0.05, indicating that at least one independent variable (human capital, organisational capital, relational capital) has a statistically significant impact on customer satisfaction. Consequently, the overall model is statistically significant.

Table 5: Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-,480	1,723		-,278	,782
	HC	-,043	,119	-,035	-,364	,717

	SC	,383	,152	,302	2,523	,014
	RC	,694	,129	,584	5,384	,001

a. Dependent Variable: satisfaction

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From Table 05. We find Sig for the constant and human capital at 0.782 and 0.717, respectively, indicating that the constant has no statistical significance in the model, and there is no relationship between human capital and customer satisfaction.

As for organisational capital, we find sig = 0.014, which is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis, indicating that structural capital has a statistically significant positive effect on customer satisfaction.

The sig for relational capital = 0.001, which is less than the tabulated value, and therefore we accept the alternative hypothesis: there is a positive effect of relational capital on customer satisfaction.

The equation of the model is: **S= -0.48 -0.043 HC+ 0.383 SC + 0.694 RC +Ɛ**

(H2) There is a statistically significant positive effect of intellectual capital dimensions on customer loyalty.

Therefore:

- There is a statistically significant positive effect of human capital on customer loyalty.
- There is a statistically significant positive effect of structural capital on customer loyalty.
- There is a statistically significant positive effect of intellectual capital on customer loyalty.

Table 06: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,808[a]	,653	,635	2,32957

a. Predictors: (Constant), RC, HC, SC

b. Dependent Variable: loyalty

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From the table above, we observe a strong correlation between the dimensions of intellectual capital and customer loyalty, with an estimated correlation coefficient of 80.8%. The model explains 63.5% of this relationship. This indicates that 36.5% of the variation is due to other variables not included in the model.

Table 07: ANOVA[a]

Model		F	Sig.
1	Regression	35,732	,001[b]

a. Dependent Variable: loyalty

b. Predictors: (Constant), RC, HC, SC)

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From the ANOVA table, we can conclude that at least one independent variable exerts a statistically significant influence on customer loyalty, making the overall model meaningful.

Table 08: Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-2,248	1,802		-1,247	,217
	HC	,038	,125	,029	,304	,763
	SC	,473	,159	,353	2,979	,004
	RC	,636	,135	,507	4,715	,001

a. Dependent Variable: loyalty

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

The results in the table of coefficients show that there is no statistically significant relationship between human capital and customer loyalty at Yassir (sig=0.763, greater than 0.05), unlike structural capital and relational capital, where sig values are 0.004 and 0.001, respectively, both below the tabulated value (0.05). Therefore, we accept the alternative hypothesis, indicating that there is a statistically significant relationship between organisational capital, relational capital, and customer loyalty. As a result, for each one-unit increase in structural capital, customer loyalty increases by 473, and for every one-unit rise in relational capital, customer loyalty increases by 0.636. The model equation is as follows.

L= -2.248+0.038HC +0.473SC+0.636R

(H3) Customer satisfaction mediates the relationship between intellectual capital and customer satisfaction.

To confirm the mediating role of customer satisfaction in the relationship between intellectual capital and customer loyalty, the Bootstrap method was adopted as one of the most accurate and modern methods for testing indirect effects, given that it relies on random resampling from the original sample and estimates the actual distribution of transactions without making strict assumptions about their nature.

The bootstrap method was applied by resampling the sample 5,000 times with Bootstrap to estimate the confidence interval for the indirect effect.

Table 09: Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	-1,952	1,469		-1,329	,189
HC	,065	,102	,049	,635	,528
SC	,237	,136	,177	1,736	,088
RC	,208	,135	,166	1,538	,130
satisfaction	,617	,113	,585	5,468	, 001

b. Dependent Variable: loyalty

Source: Prepared by the researchers based on the results of statistical analysis, SPSS 27.

From the above, the results show that there is no statistically significant effect of human capital on customer satisfaction and loyalty, while a statistically significant positive effect was found for both structural capital and relational capital on customer satisfaction and loyalty. After introducing customer satisfaction as a mediator, we found that it has a positive effect on customer loyalty (sig=0.001). Human capital, structural capital, and relational capital are not statistically significant.

The results suggest that customer satisfaction does not mediate the relationship between human capital and customer loyalty, but it does mediate the relationship between structural capital, relational capital, and customer loyalty.

IV. Results and recommendations:

V 1. Results: Through analysing a sample of Yassir users, we reached the following conclusions:

- The results confirm that Yassir possesses a solid intellectual capital base, but prioritising investment in human resources and developing their

competencies is essential to enhance organisational effectiveness and sustain strong relationships.

- Human capital (HC) did not have a statistically significant effect on either customer satisfaction or loyalty, suggesting that the efficiency of human resources in the organisation studied did not result in tangible added value for the customer.
- The study demonstrated that structural capital (SC) and relational capital (RC) have a statistically significant influence on customer satisfaction and loyalty, highlighting that effective operational organisation and strengthening customer relationships help to enhance the customer experience and boost satisfaction.
- Customer satisfaction has a significant and direct influence on customer loyalty, emphasising the importance of satisfaction as a prerequisite for maintaining continuity and trust.
- Customer loyalty is not gained solely through investments in intellectual capital, but rather by initially enhancing satisfaction levels.

V 2. Recommendations:

- Enhance structural capital by developing internal systems and procedures and streamlining processes to ensure higher quality, faster, and more transparent service delivery.
- Enhance relational capital by improving customer communication channels and activating loyalty programmes that focus on long-term relationships, while increasing the speed of response to customer needs.
- Reconsider investing in human capital by implementing comprehensive training and development programmes in customer service, innovation, and effective communication, ensuring a direct contribution to enhancing customer satisfaction.
- Prioritise customer satisfaction as a strategic goal in all marketing and operational plans, as it serves as the bridge linking investment in intellectual capital and customer loyalty.
- Implementing regular monitoring and evaluation systems for customer satisfaction and loyalty, and linking them to employee performance indicators and organisational efficiency, to enable continuous improvement.
- Allocate more resources to human resource development so that this dimension no longer remains the weakest link in the intellectual capital system, but rather becomes a supportive element of the organisational structure and strength of relationships.

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