

The Impact of Digitalization on customer satisfaction: case of NAFTAL KHADAMAT

تأثير الرقمنة على رضا العملاء : حالة نفطال خدمات

BOUZEROUATA Ilhem¹, HAMIDA Feriel Raouane²

¹ National School of Management ENSM, Kolea– Tipaza, Algeria,

i.bouzerouata@ensmanagement.edu.dz

² National School of Management ENSM, Kolea– Tipaza, Algeria,

f.hamida@ensmanagement.edu.dz

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Abstract:

This study explores the influence of digitalization, particularly through "NAFTAL KHADAMAT" mobile application, its free nature, and quality, on customer satisfaction. Using a quantitative research approach and an online survey with 150 respondents, multiple linear regression analysis was employed to examine the relationship between the variables.

The findings reveal a positive correlation between these variables and customer satisfaction, highlighting the importance of embracing digital services and prioritizing quality and affordability in digital offerings to enhance overall customer satisfaction.

Keywords: Digitalization, customer satisfaction, quality, free nature, NAFTAL KHADAMAT.

Jel Classification Codes : C12, C82, M31, O33.

ملخص:

تستكشف هذه الدراسة تأثير الترقية الرقمية، خاصة من خلال تطبيق "نفطال خدمات"، وطبيعته المجانية، وجودته، على رضا العملاء. باستخدام نهج البحث الكمي واستطلاع عبر الإنترنت مع 150 مجيب، تم استخدام تحليل الانحدار الخطي المتعدد لاستكشاف العلاقة بين الترقية الرقمية، وتطبيق "نفطال خدمات"، وطبيعته المجانية، وجودته، مع رضا العملاء. تكشف النتائج عن وجود علاقة إيجابية بين هذه المتغيرات ورضا العملاء، مما يؤكد على أهمية اعتماد الخدمات الرقمية وإعطاء الأولوية للجودة والتوفر في العروض الرقمية لتعزيز رضا العميل العامة للجودة والتوفر في العروض الرقمية لتعزيز رضا العميل العامة

كلمات مفتاحية: الترقية الرقمية، رضا العملاء، تطبيق نفطال خدمات، الجودة، المجانية

تصنيف JEL: C12, C82, M31, O33

¹ Corresponding author : Bouzerouata Ilhem, e-mail: i.bouzerouata@ensmanagement.edu.dz

INTRODUCTION

In today's era, the integration of digital technology has emerged as indispensable for shaping the modern customer experience. By harnessing digital tools, businesses can enhance their customer service, personalize interactions based on individual preferences, and gain profound insights into customer needs. This paradigm shift towards digitalization offers businesses with unparalleled opportunities to elevate customer experience and satisfaction, promising substantial benefits for those who fully embrace it. As time progresses, catalyzed by the digital revolution, society undergoes an unprecedented transition from an industrial-centric to a digital-centric focus. A fresh wave of customers, raised amidst the democratization of the internet, exhibits a heightened affinity towards technological advancements. For contemporary organizations, the adoption of digital transformation is not just optional, it's an imperative necessity.

Given this context, our research aims to explore how the integration of digital tools specifically affects customer satisfaction within the framework of the "NAFTAL KHADAMAT" mobile application developed by NAFTAL. To effectively tackle this objective, we have crafted the following research question:

What is the impact of "NAFTAL KHADAMAT" mobile application on users' satisfaction?

Based on the literature review, the following hypotheses have been formulated:

General hypothesis:

H: "NAFTAL KHADAMAT" mobile application has a significant positive impact on users' satisfaction.

The general hypothesis is divided into three specific hypotheses:

- H1: "NAFTAL KHADAMAT" mobile application's quality has a positive impact on users' satisfaction;
- H2: The free nature of "NAFTAL KHADAMAT" mobile application has a positive impact on users' satisfaction;
- H3: The digitalization has a positive impact on users' satisfaction.

1. Literature review

1.1. Digitalization

In recent years, digitalization has transformed from a new technology into a key tool for improving business efficiency and reshaping customer perceptions. (Boustani mallah & Ibrahim, 2021) highlight that digitalization has become a mainstream approach that enhances business operations and positively influences how customers view technological changes. In addition, (Kane, 2019) emphasizes that digitization offers significant benefits by creating opportunities for businesses to build and strengthen customer relationships. By adopting digital technologies, companies can achieve greater operational effectiveness and explore innovative ways to engage with customers, thereby enhancing their overall experience and satisfaction.

1.2. Digitalization vs. Digitization and Digital Transformation

The definitions of these three important concepts are often implicit, and in practice, there isn't a clear agreement on how to define either of them. Consequently, within innovation management research, a single construct has been employed to denote to different phenomena. The table 1 displays chosen definitions regarding the distinction between digitization, digitalization and digital transformation.

Table 1. Exemplary concepts for digitization, digitalization and digital transformation

(Tilson, Lyytinen, & Sørensen, 2010)	Digitization: “[technical] process of converting analog signals into a digital form, and ultimately into binary digits (bits)” (p. 749) Digitalization: “[...] socio-technical process of applying digitizing techniques to broader [...] contexts” (p. 749).
(Clarke, 2019)	Digitization: “[...] a large proportion of data is now ‘born digital’, and analogue data can be inexpensively converted into digital form” (p. 59) Digitalization: “interpretation and management of the world [...] [through] processes, that are almost entirely dependent on digital data” (p. 59)
(T.Eymann, et al., 2017)	Digitization: “[...] the technical process of converting analog signals into a digital form, ultimately into binary digits. “(p.301) Digitalization: “[...] manifold sociotechnical phenomena and processes of adopting and using these technologies in broader contexts.” (P. 301)
(PwC, 2013)	Digital transformation: describes the fundamental transformation of the entire business world through the establishment of new technologies based on the internet with a fundamental impact on society as a whole.

Source : (Tilson, Lyytinen, & Sørensen, 2010), (Clarke, 2019), (T.Eymann, et al., 2017), (PwC, 2013).

1.3. Customer satisfaction

Customer satisfaction is a fundamental concept in economics, evolving from a simple response to fulfilment into a complex understanding of consumer experiences and behaviours. Recent perspectives in consumer studies emphasize that satisfaction is not a static state but a dynamic and malleable response that can adjust and evolve over time. According to (Dhingra, Gupta, & Bhatt, 2020), customer satisfaction is deeply influenced by the overall customer experience throughout the consumption process, which significantly impacts future customer behaviours such as repurchase intentions and recommendations, as also highlighted by (Pereira, de Fátima Salgueiro, & Rita, 2016). Furthermore, (Rania AZEROUAL, QMICHCHOU, & SALEK, 2023) assert that the quality of online customer service plays a crucial role in shaping a company's image, which directly affects customer satisfaction. These insights collectively illustrate that customer satisfaction is a key economic concept shaped by the entire customer experience and is essential for fostering positive future customer interactions.

1.4. Role of digitalization in customer satisfaction

The digital transformation of businesses offers new opportunities to enhance the customer experience, which can lead to increased satisfaction and loyalty. Among its numerous advantages, it allows the company to (Baabdullah, Ainin, & Suurna, 2021):

- Facilitate faster and personalized communication with customers, thereby enriching their experience and satisfaction;
- Utilize tools for tracking and analysing digital data to gain deeper insights into customer preferences and needs, facilitating the delivery of more tailored offers and services;
- Ensure availability of online services for streamlined access;
- Digitize after-sales and support services, enabling swift and efficient issue resolution, thus contributing to increased customer satisfaction etc.

Overall, the relationship between digitalization and customer satisfaction is complex and multifaceted, often requiring a balance between technological advancements and maintaining personal interaction.

2. Methodology

2.1. Presentation of the application

SONATRACH, the Algerian company specializing in the research, exploration, pipeline transportation, processing, and marketing of hydrocarbons and their derivatives, is the largest oil and gas company in both Algeria and Africa. Beyond its core operations, SONATRACH is also involved in sectors like electricity generation, new and renewable energies, and seawater desalination. According to Decree No. 80-101 of April 6, 1980, SONATRACH spun off its refining and distribution activities by establishing the National Company for Marketing and Distribution of Petroleum Products, NAFTAL, which operates as an entity under the Ministry of Energy and whose name is derived from two symbolic elements:

- “NAFT” Oil
- “AL” Algeria

"NAFTAL KHADAMAT" is an innovative free application, was officially launched on Thursday, February 24, 2022, by Mr. Mourad MENOUEAR, the Chief Executive Officer on Play Store with over 50,000 downloads and has updated on September 10, 2023. On March 13, 2024 NAFTAL has launched the application on the App Store.

This initiative is part of the company's service modernization efforts, in line with the national plan for digitizing services.

In addition, "NAFTAL KHADAMAT" provides a variety of services, including:

- Geolocation and routes to the nearest gas station and SIRGHAZ conversion centers;
- Discovering the latest promotions offered by NAFTAL, such as maintenance packages and tire changes;
- Accessing information on the different fuels available, including their specifications and daily updated prices;
- Exploring details about products and equipment for sale at NAFTAL;
- Utilizing a precise inventory of the company's various stations nationwide, covering regular, Sirghaz, green fuel, and retail points;

- Accessing information about each gas station, including opening hours, email addresses, phone numbers.

Furthermore, the application facilitates communication between the company and the customer, allowing for the submission of complaints, feedback, and grievances.

2.2. Method and data

To fulfill the research objectives and ensure robust reliability, a quantitative approach was adopted, reflecting a positivist stance and a hypothetico-deductive framework for hypotheses testing. An online survey, conducted from April 29, 2024, to May 15, 2024, employed a simple random sampling method via Google Forms, including six distinct sections on demographic profile, user profile, digitalization, quality assessment, the free nature, and finally satisfaction. A total of 150 responses were collected, and data were analyzed with SPSS 28.0, including reliability checks with Cronbach's Alpha Coefficient. Initial descriptive and frequency analyses providing an overview of the data, and multiple regression analysis was performed to test hypotheses and explore the relationships between variables.

3. Results

1. Statistical reliability

The table below shows Cronbach's Alpha coefficient as a statistical measure of the reliability analysis of a questionnaire, which evaluates the internal consistency or reliability of a test or questionnaire, gauging how well various items align with the same underlying concept.

Table 2. Cronbach's Alpha coefficient

Section	Expressions	Cronbach's alpha coefficient
Digitalization	04	0.801
Quality assessment	04	0.788
The free nature	04	0.804
Satisfaction	04	0.715

Source: Authors based on SPSS results.

In this case, the Cronbach's these values suggest that the questionnaire items are relatively consistent in measuring the same concept. Moreover, all coefficients exceeded 0.70, indicating good reliability.

2. Univariate descriptive analysis

In this stage, a univariate descriptive analysis of the survey questions is conducted. This involves using descriptive statistics like frequency tables and percentage distributions to summarize the responses for each question.

2.1.Demographic profile of the respondent:

After confirming the strong reliability of the questionnaire items, a descriptive analysis was performed to gain further insights into the study sample. The analysis included 150 responses. In terms of the demographic profile, 22% of the respondents were female (33 individuals), while males made up 78% of the sample. The majority of respondents, 51%, were aged between 18 and 25, with the smallest percentage, 3.3%, in the 56-65 age group. Educationally, 83.3% of the respondents had a university education, while just 2.7% had only attended secondary school. Geographically, 40.7% of the respondents lived in the western region, followed by 27.2% in the central region, and the southern region had the lowest representation at 14.7%. The table below provides a detailed overview of the demographic information for the sample.

Table 3. Demographic profile of respondents

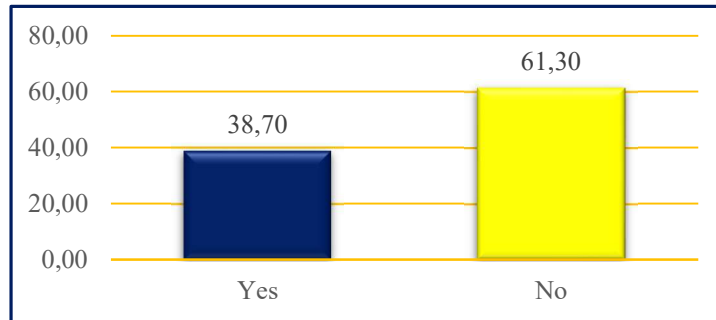
Variable	Spécification	Frequency	Percentage%
Q1: what is your gender?	Female	33	22
	Male	177	78
Q2: How old are you?	18-25	77	51
	26- 35	32	21.30
	36-45	23	15.30
	46-55	13	8.70
	56-65	05	3.30
	66 and more	00	0.00
Q3: What is your current family situation?	Single	91	60.70
	Married	52	34.70
	Widow	01	0.70
	Divorced	06	4.00
Q4: What is your level of education?	Middle school	04	2.70
	Secondary school	13	8.70
	University	125	83.30
	Professional training	08	5.30
	Other	00	0.00
Q5: Which region do you currently reside in?	North	24	16.00%
	South	07	4.70%
	East	19	12.70%
	West	61	40.70%
	Center	39	26.00%

Source: Authors based on SPSS results.

To provide further clarity, the comprehensive set of questions and items included in the survey is detailed in the questionnaire located in Appendix 1.

2.2. User profile :

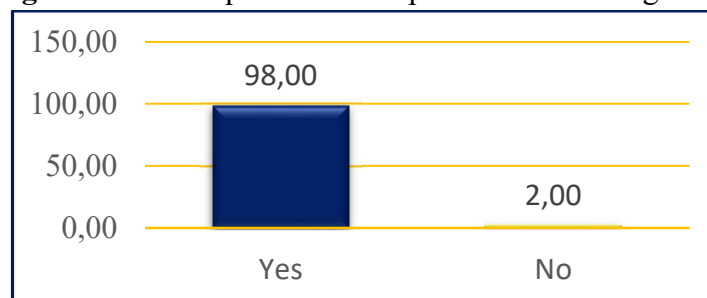
Figure 1. The frequencies of respondents according to Q6



Source: Self-developed based on SPSS results.

According to **Figure 1**, it's evident that over 92 respondents **do not own a vehicle**, constituting precisely 61.30% of the total study sample. Conversely, **vehicle owners** represent only 38.70% of the sample.

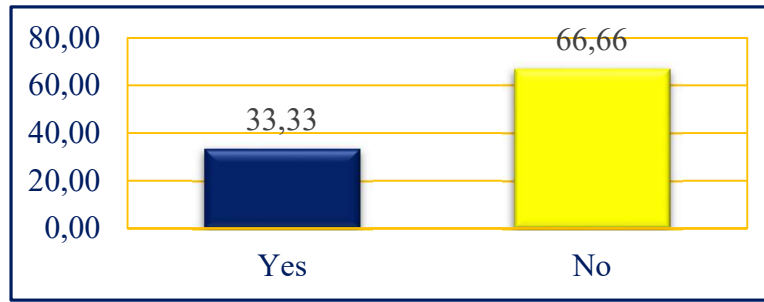
Figure 2. The frequencies of respondents according to Q7



Source: Self-developed based on SPSS results.

As depicted in **Figure 2**, it's apparent that over 147 respondents possess a smartphone or mobile device capable of running mobile applications, constituting precisely 98.00% of the total study sample. Alternatively, those without access to such devices represent only 2% of the sample.

Figure 3. The frequencies of respondents according to Q8



Source: Self-developed based on SPSS results.

We observe from **Figure 3**, that 100 of the respondents currently not a user of "NAFTAL KHADAMAT" mobile application, where their exact percentage reached 66.66% of the total sample of the study, while the percentage of currently a user of "NAFTAL KHADAMAT" mobile application in the sample was only 33.33%.

2. 3. Digitalization :

Table 4. Likert Scale 5 Points according to Q9

Degré	1	2	3	4	5
Category	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Moyenne	1-1.79	1.8--2.59	2.6-3.39	3.4-4.19	5-4.2

Source: Self-developed based on SPSS results.

Table 5. Frequencies and descriptive statistics according to Q9

N°	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation	overall tendency	Order
		N								
		%								
01	Digitalization has made it easier to interact with [Company/Organization] as a customer	01	09	09	26	05	3.50	0.97	Agree	4
		2.0	18.0	18.0	52.00	10.00		4		
02	Digitalization increases convenience, raising satisfaction levels.	01	03	02	39	05	3.88	0.74	Agree	1
		2.0	6.0	4.00	78.00	10.0		6		
03		02	03	08	32	05	3.70		A	3

	Personalization through digitalization enhances overall customer experience, leading to greater satisfaction.	4.00	6.00	16.00	64.00	10.00	0.88		
		0	0	0	0		6		
04	Digital tools provide customers with more control over interactions, contributing to increased satisfaction.	01	03	03	38	05	3.86	0.75	2
		2.00	6.00	6.00	76.00	10.00		6	
		0	0	0	0				
	Digitalization						3.73	0.67	Agree
								2	

Source: Self-developed based on SPSS results.

The analysis of digitalization's impact on customer satisfaction, as outlined in **Table 5**, reveals a generally positive perception among respondents. The statements **"digitalization increases convenience, raising satisfaction levels"** and **"digital tools provide customers with more control over interactions, contributing to increased satisfaction,"** are the highest-ranked, with means of 3.88 and 3.86, respectively, both falling in the "Agree" range. Additionally, **"personalization through digitalization enhances overall customer experience, leading to greater satisfaction,"** and **"digitalization has made it easier to interact with [Company/Organization] as a customer,"** also receive favorable responses, with means of 3.70 and 3.50. Overall, the findings indicate a tendency of respondents to agree with the positive influence of digitalization on customer satisfaction, with an average mean of 3.73.

2.4.Quality assessment :

Table 6. Frequencies and descriptive statistics according to Q10

N°	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation	overall tendency	Order
		N								
		%								
01	The navigation is fast and easy.	01	09	09	26	05	3.50	0.974	Agree	4
		2.00	18.00	18.00	52.00	10.00				
		0	0	0						
02	The information provided is clear, and relevant.	01	04	03	37	05	3.82	0.800	Agree	2
		2.00	8.00	6.00	74.00	10.00				
		0								
03	The features and functionalities offered meet the expectations and requirements.	02	03	07	32	06	3.74	0.899	Agree	3
		4.00	6.00	14.00	64.00	12.00				
		0		0	0					
04		01	03	03	38	05			A	1

The overall design and visual appeal are modern and aesthetically pleasing.	2.00	6.00	6.00	76.00	10.00	3.86	0.756	
Quality assessment						3.73	0.671	Agree

Source: Self-developed based on SPSS results.

Based on **Table 6**, **"the overall design and visual appeal are modern and aesthetically pleasing"** ranks first with an arithmetic mean of 3.86 and a standard deviation of 0.756. This falls within the "Agree" range on the Likert scale, indicating that respondents perceive the quality of "NAFTAL KHADAMAT" mobile application positively. Following closely is **"the information provided is clear and relevant,"** also with a mean of 3.82 and a standard deviation of 0.800, suggesting an "Agree" overall response tendency among respondents. Ranked third is **"the features and functionalities offered meet the expectations and requirements,"** with a mean of 3.74 and a standard deviation of 0.899, indicating another "Agree" overall response tendency. Ranked last is **"the navigation is fast and easy,"** with a mean of 3.50 and a standard deviation of 0.974, suggesting an "Agree" overall response tendency among respondents. Overall, the subsection assessing the quality of "NAFTAL KHADAMAT" mobile application demonstrates a "Rather Agree" tendency, with an arithmetic mean of 3.73 and a standard deviation of 0.671, highlighting respondents' agreement with the application's quality.

2.5.The free nature :

Table 7. Frequencies and descriptive statistics according to Q11

N°	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Ecart type	overall tendency	Order
		N								
		%								
01	The free nature enhances users' satisfaction with the service.	01	05	13	26	05	3.58	0.883	Agree	3
		2.00	10.00	26.00	52.00	10.00				
02	The free nature influences users' decisions to continue using it	01	05	02	37	05	3.80	0.883	Agree	2
		2.00	10.00	4.00	74.00	10.00				
03	The free nature contributes positively to users' overall experience.	04	07	08	26	05	3.42	1.108	Agree	4
		8.00	14.00	16.00	52.00	10.00				
04	The free nature motivates users to engage more frequently with the application's features.	01	05	03	34	07	3.82	0.873	Agree	1
		2.00	10.00	6.00	68.00	14.00				

The free nature	3.65	0.73	Agree
		8	

Source: Self-developed based on SPSS results.

Based on Table 7, "the free nature motivates users to engage more frequently with the application's features" ranks first with an arithmetic mean of 3.82 and a standard deviation of 0.873. This falls within the "Agree" range on the Likert scale, indicating that respondents perceive the free nature of "NAFTAL KHADAMAT" mobile application positively. Following closely is "the free nature influences users' decisions to continue using it," also with a mean of 3.80 and a standard deviation of 0.883, suggesting an overall "Agree" response tendency among respondents. Ranked third is "the free nature enhances users' satisfaction with the service," with a mean of 3.58 and a standard deviation of 0.883, indicating another "Agree" overall response tendency. Ranked last is "the free nature contributes positively to users' overall experience," with a mean of 3.42 and a standard deviation of 1.108, suggesting an overall "Agree" response tendency among respondents. Overall, the subsection assessing the free nature of "NAFTAL KHADAMAT" mobile application demonstrates a "Rather Agree" tendency, with an arithmetic mean of 3.73 and a standard deviation of 0.671, highlighting respondents' agreement with the application's free nature.

2.6.Satisfaction:

Table 8. Frequencies and descriptive statistics according to Q12

N°	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Ecart type	overall tendency	Order
		N								
		%								
01	Users' satisfaction is high.	01	07	09	26	07	3.62	0.96	Agree	2
		2.0	14.0	18.0	52.00	14.00		7		
02	Overall performance enhances user satisfaction.	03	07	02	33	05	3.60	1.05	Agree	3
		6.0	14.0	4.00	66.00	10.0		0		
03	users are satisfied with the range of services available.	02	05	08	26	09	3.70	1.01	Agree	1
		4.0	10.0	16.0	52.0	18.00		5		
04	Users are satisfied with the level of support and assistance	01	09	09	25	06	3.52	0.99	Ag	4
								5		

provided by NAFTAL	2.0	18.	18.0	50.0	12.00
employees through the mobile application	0	00	0	0	
Satisfaction					3.61 0.73 9 Agree

Source: Self-developed based on SPSS results.

According to **Table 8**, **"users are satisfied with the range of services available"** ranks first with an arithmetic mean of 3.70 and a standard deviation of 1.015, falling within the "Agree" range on the Likert scale. This indicates that respondents perceive the digitalization of "NAFTAL KHADAMAT" mobile application positively. Following closely is **"users' satisfaction is high,"** with a mean of 3.62 and a standard deviation of 1.050, suggesting an overall "Agree" response tendency among respondents. Ranked third is **"overall performance enhances user satisfaction,"** with a mean of 3.60 and a standard deviation of 1.050, indicating another "Agree" overall response tendency. Ranked last is **"users are satisfied with the level of support and assistance provided by NAFTAL employees through the mobile application,"** with a mean of 3.52 and a standard deviation of 0.995, suggesting an overall "Agree" response tendency among respondents. Overall, the subsection assessing the digitalization of "NAFTAL KHADAMAT" mobile application demonstrates a "Rather Agree" tendency, with an arithmetic mean of 3.61 and a standard deviation of 0.739, highlighting respondents' agreement with the satisfaction levels related to "NAFTAL KHADAMAT" mobile application.

Hypotheses testing

- H0: There is no impact of digitalization, quality assessment and the free nature on the dependent variable Satisfaction.
- H1: There is impact of digitalization, quality assessment and the free nature on the dependent variable Satisfaction.

Table 9. Multiple linear regression

Model	The sum of squares	DF	Mean square	F	Sig
Regression	24.480	03	8.160	163.905	0.000
Residuals	2.290	46	0.050		
Total	26.77	49			
Variables	Coefficient	Std Error	T		Sig
Digitalization	1.036	1.042	1.705		0.011
Quality assessment	1.828	1.086	2.005		0.014
The free nature	0.265	0.090	2.95		0.005
Dependante Variable :		Correlation Coefficient :		Coefficient of determination :	
Satisfaction		R = 0.956		R² = 0.914	

Source: Authors based on SPSS results.

The results from the presented table indicate that the calculated f-value was 163.90, accompanied by a significance probability value of 0.000, which is less than the significance level ($\alpha=0.05$). This underscores the validity of the model in testing the hypotheses. Subsequently, the hypotheses were further examined using the multiple linear regression method to assess the impact of the independent variables (**digitalization, quality assessment, and the free nature**) on the dependent variable (**satisfaction**). Moreover, the table reveals a correlation coefficient of 0.956 between the independent variables, signifying a strong positive correlation among them. It is also noted that the coefficient of determination is equal to 0.914. This means that 91.5% of the variation in satisfaction can be explained by the variation in digitalization, quality assessment and the free nature. The remaining percentage is due to other factors.

The multiple linear regression model:

Satisfaction= 1.828 Quality assessment + 0.265 The free nature + 1.036 Digitalization.

➤ The impact of quality assessment of "NAFTAL KHADAMAT" mobile application on users' satisfaction:

The table shows a statistically significant relationship is evident at the significance level ($\alpha=0.05$) between the independent variable quality assessment and the dependent variable satisfaction. The calculated t-value is 2.005, with a probability value (sig) of 0.014, which is below the significance threshold of 0.05. Hence, we reject the null hypothesis, suggesting that the coefficient is equal to zero (no effect).

Consequently, we accept the alternative hypothesis, affirming that the coefficient is statistically significant at the 0.05 significance level. In addition, the positive coefficient means that there is a positive impact of quality assessment on the dependent variable satisfaction at the 0.05 significance level, which means too that an increase in the independent variable (quality assessment) will lead to an increase in the dependent variable (satisfaction).

➤ **The impact of the free nature of "NAFTAL KHADAMAT" mobile application on users' satisfaction:**

Based on the same table, a statistically significant relationship is observed at the 0.05 significance level ($\alpha = 0.05$) between the independent variable "free nature" and the dependent variable "satisfaction." The t-value calculated is 2.95, with a p-value (sig) of 0.005, which is below the 0.05 threshold. This leads us to reject the null hypothesis, which suggests that the coefficient is zero (indicating no effect). Instead, we accept the alternative hypothesis, confirming that the coefficient is statistically significant at the 0.05 level. Additionally, the positive coefficient indicates that "free nature" has a positive effect on "satisfaction" at the 0.05 significance level, implying that an increase in the independent variable (free nature) will result in an increase in the dependent variable (satisfaction).

➤ **The impact of digitalization on customer satisfaction:**

From the same table, a statistically significant relationship between the independent variable "digitalization" and the dependent variable "satisfaction" is evident at the 0.05 significance level ($\alpha = 0.05$). The t-value calculated is 1.705, with a p-value (sig) of 0.011, which is below the 0.05 threshold. As a result, we reject the null hypothesis, which posits that the coefficient is zero (indicating no effect). Instead, we accept the alternative hypothesis, confirming that the coefficient is statistically significant. Furthermore, the positive coefficient indicates that digitalization has a positive impact on satisfaction at the 0.05 significance level, meaning that an increase in the independent variable (digitalization) will lead to an increase in the dependent variable (satisfaction).

Summary of hypotheses testing:

Table 10. Summary of hypotheses testing.

Hypothesis	Confirmation	
H : "NAFTAL KHADAMAT" mobile application has a significant positive impact on users' satisfaction.	Yes	Accepted
H1: "NAFTAL KHADAMAT" mobile application's quality has a positive impact on users' satisfaction.	Yes	Accepted
H2: The free nature of "NAFTAL KHADAMAT" mobile application has a positive impact on users' satisfaction.	Yes	Accepted
H3: The digitalization has a positive impact on users' satisfaction.	Yes	Accepted

Source: Authors based on multiple linear regression results.

4. Discussion

The findings of this study reveal a significant relationship between digitalization and customer satisfaction, particularly within the context of the "NAFTAL KHADAMAT" mobile application. The data confirms that the quality of the application -encompassing aspects such as performance, reliability, usability, and responsiveness- plays a crucial role in enhancing user satisfaction. This aligns with prior research, which has consistently shown that high-quality digital services are integral to positive customer experiences. Users are more likely to have favorable perceptions of a mobile application when it reliably meets their needs and offers an intuitive, responsive interface.

Moreover, the study highlights the importance of the application's free nature in driving customer satisfaction. The results suggest that users derive significant value from the fact that the service is offered at no cost, which lowers the perceived barrier to entry and increases the appeal of the application. This finding is consistent with previous studies that emphasize the influence of pricing on customer satisfaction, particularly in digital environments where free or low-cost offerings can be a major differentiator.

The research also points to a broader acceptance of digitalization among customers, evidenced by the strong link between digital adoption and satisfaction. As digital services become more integrated into daily life, customers increasingly recognize the convenience and efficiency they offer. This shift suggests that companies that embrace digitalization and prioritize the quality and accessibility of their digital services are likely to see higher levels of customer satisfaction. Overall, the acceptance of the general hypothesis H indicates that the "NAFTAL KHADAMAT" mobile application has a statistically significant positive impact on user satisfaction. This finding underscores the importance of continuous improvement in digital service offerings, as well as the strategic role of digitalization in enhancing customer experiences. By understanding and addressing the factors that drive satisfaction, such as quality, cost, and digital accessibility, organizations can better meet customer expectations and foster stronger relationships in the digital age.

Conclusion

In conclusion, this study provides valuable insights into the impact of digitalization on customer satisfaction, with a specific focus on the "NAFTAL KHADAMAT" mobile application. The findings underscore the critical role of application quality, emphasizing that performance, reliability, usability, and responsiveness are pivotal in shaping positive user experiences. Additionally, the study highlights the significance of offering the application for free, demonstrating that cost-free access can significantly enhance customer satisfaction by making the service more accessible and attractive. Moreover, the strong connection between digitalization and customer satisfaction reflects a broader acceptance and preference for digital services, which offer greater convenience and efficiency. These results reinforce the importance of prioritizing quality and accessibility in digital offerings, as well as embracing digitalization as a key strategy for enhancing customer satisfaction. Ultimately, the study contributes to a deeper understanding of how digital transformation can drive customer satisfaction, offering practical.

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APPENDIX : QUESTIONNAIRE

Description:

As part of our research, we are studying the impact of digitalization on customers satisfaction, focusing on the case study of the mobile application "NAFTAL KHADAMAT." We kindly request a few minutes of your time to complete our questionnaire. Your candida responses will be kept confidential and utilized solely for academic purposes. We sincerely appreciate your valuable contribution. Thank you in advance.

Section 01: Demographic profile of the respondent		
Q01	What is you gender? (One possible answer)	☐ Female ☐ Male
Q02	How old are you ? (One possible answer)	☐ 18-25 ☐ 26- 35 ☐ 36-45 ☐ 46-55 ☐ 56-65 ☐ 66 and more
Q03	What is your current family situation ? (One possible answer)	☐ Single ☐ Married ☐ Widow ☐ Divorced
Q04	What is your level of education? (One possible answer)	☐ Middle school ☐ Secondary school ☐ University ☐ Professional training ☐ Other
Q05	Which region do you currently reside in ? (One possible answer)	☐ North ☐ South ☐ East ☐ West ☐ Center
Section 02 : User profile		
Q06	Do you own a vehicle? (One possible answer)	☐ Yes ☐ No
Q07	Do you have access to a smartphone or mobile device capable of running mobile application ? (One possible answer)	☐ Yes ☐ No

Q08	Are you currently a user of "NAFTAL KHADAMAT" mobile application ? (One possible answer)	▪ Yes ▪ No
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Section 03 : Digitalization

Q09	Please rate your level of agreement with the following statements regarding the digitalization .	▪ Strongly Disagree ▪ Disagree ▪ Neutral ▪ Agree ▪ Strongly Agree
	▪ Digitalization has made it easier to interact with [Company/Organization] as a customer. ▪ Digitalization increases convenience, raising satisfaction levels. ▪ Personalization through digitalization enhances overall customer experience, leading to greater satisfaction. ▪ Digital tools provide customers with more control over interactions, contributing to increased satisfaction.	
	(One possible answer)	

Section 04 : Quality assessment.

Q10	Please rate your level of agreement with the following statements regarding the quality of "NAFTAL KHADAMAT" mobile application.	▪ Strongly Disagree ▪ Disagree ▪ Neutral ▪ Agree ▪ Strongly Agree
	▪ The navigation is fast and easy. ▪ The information provided is clear, and relevant. ▪ The features and functionalities offered meet the expectations and requirements. ▪ The overall design and visual appeal are modern and aesthetically pleasing.	
	(One possible answer)	

Section 05 : The free nature

Q11	Please rate your level of agreement with the following statements regarding the free nature of "NAFTAL KHADAMAT" mobile application.	▪ Strongly Disagree ▪ Disagree ▪ Neutral ▪ Agree ▪ Strongly Agree
	▪ The free nature enhances users' satisfaction with the service. (Kane, 2019) ▪ The free nature influences users' decisions to continue using it. ▪ The free nature contributes positively to users' overall experience.	

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- The free nature motivates users to engage more frequently with the application's features.

(One possible answer)

Section 06 : Satisfaction

- Q12** Please rate your level of agreement with the following statements regarding your **satisfaction** with "NAFTAL KHADAMAT" mobile application.
- Strongly Disagree
 - Disagree
 - Neutral
 - Agree
 - Strongly Agree
- Users' satisfaction is high.
 - Overall performance enhances user satisfaction.
 - users are satisfied with the range of services available.
 - Users are satisfied with the level of support and assistance provided by NAFTAL employees through the mobile application

(One possible answer)
