Digital Transformation and the D17 Application: A Case Study of the Tunisian Post Office

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Abstract

This study is based on a sample of 100 customers of the Tunisian Post, the objective is to know the impact of digital transformation on the Tunisian Post through the D17 application. Based on our analysis; the results show that mobile payments constitute an attractive solution for individuals because they are practical and easy to use tools. For the Post, the D17 application can be considered a powerful instrument not only for the development of digital strategies, but also for the country's financial sector and the economy in general.

Keywords: Digital transformation; Post-customer relationship

Introduction

In recent years, the rise of digitalization has begun to gain importance within businesses, and the latest health crises have accelerated this trend, pushing the world towards digital tools to limit contact between individuals (Modgil et al., 2022; Corvello et al., 2023). These authors add that all sectors have accelerated the process of digitalization as a means of coping with the consequences of these crises (Ardolino et al., 2024). Thus, in the postal domain, for example, the Tunisian Post has heavily invested in this phenomenon in recent years (Kannou et al., 2024). Now, it offers a diverse range of digital services to its customers (Kannou et al., 2024). In this paper, it is highly relevant to examine a question that appears pertinent to us: how can the Tunisian Post carry out its digital transformation to improve the quality of its services, optimize its costs, and adapt to the new consumption habits of customers? Consequently, the main objective is to explain the importance of digital transformation within the Tunisian postal service.

To address this question, we will divide the work into two parts: The first part will discuss a literature review on the importance of digital transformation, seeking to define digitalization and present its advantages and disadvantages. In the second part, we will seek to understand the

importance of determinants of Tunisian consumer behavior towards mobile payment through the D17 application. Finally, the third part will be devoted to the methodology adopted as well as the results.

2. Review of literature

In the literature, several definitions of digital transformation are available. To properly understand this concept, it is essential to clarify two notions beforehand: digitization and digitalization.

Digitization involves converting analog information and data into digital format. For example, this could be the digitization of a photo or a document to store them on a computer (Musarat et al., 2024). On the other hand, digitalization concerns the processing of these digitized data by digital technologies with the aim of modifying business processes and projects within the company (Broccardo et al.,2024). For example, this could involve training employees on a new software platform designed to expedite the launch of new products (Ali, et al., 2024). Although digital transformation includes digitalization initiatives, it goes beyond the project level and has implications for the entire enterprise (Vendrell-Herrero et al., 2024).

2.1. Definition of digital transformation

The concept of digital transformation is characterized by the integration of IT, personal, and business environments, summarizing the transformative impact of new digital technologies such as Social, Mobile, Analytics (Olaniyi et al., 2024).

Fors and Stolterman (2004) defined digital transformation as the changes that digital technology brings about or influences in all aspects of human life. However, according to Ettien and Peron (2018), transformation involves a process aimed at identifying, mobilizing, and organizing resources to move from one point to another. In the same context, Bos (2018) and Tsaples et al., (2024) views digital transformation as the adoption of easily accessible technological skills that enhance the organization's responsiveness to market changes (Adhiatma et al., 2024). Digital-related transformations can generally be classified into three categories: automation, which involves the mechanical reproduction of a sequence of actions using a program; dematerialization, which entails replacing physical media with computer files; and disintermediation, which involves the elimination of intermediaries made possible by digital means (David F., 2018).

Mele et al., (2024) highlighted that digital transformation relies on the use of digital technology to make changes in the technological structure of the company, including its products, services, and processes. It is a voluntary process initiated by companies to capitalize on new opportunities offered by digital technologies (Dardani et al., 2024). Other authors such as

Fischer, et al. (2024); Ferri et al., (2024); Kao et al., 2024) explained that major organizational changes motivated by digital technology are considered digital transformations, altering the way business is conducted.

Indeed, according to Coco et al., (2024), digital transformation is the process aimed at guiding an organization with a traditional approach towards new ways of thinking and working, using digital, social, mobile, and emerging technologies. This involves a change in leadership, different thinking, increased innovation, and other economic models (Raban et al., 2023), including digitization of assets and increased use of technology to enhance the quality of the experience of suppliers, customers, partners, employees, and stakeholders within the organization.

In summary, digital transformation can be defined as a revolution in practices, involving the automation and simplification of processes (Makukh et al., 2024) Its aim is to accelerate and optimize internal and external exchange flows between the postal service and its customers (Nkeiruka et al., 2024).

Table 1: Advantages and Disadvantages of Digital Transformation

Avantages	Disadvantages
Enhancement of Service Quality: Providing faster, more accurate, and more personalized services to customers by digitizing processes.	Security Risks: Making Tunisian Post vulnerable to cyber-attacks, which can compromise the confidentiality and security of customer data.
Improvement in Efficiency: Automating repetitive tasks, thereby reducing the time and costs associated with these tasks	Computer Security Risks: Increasing computer security risks for both customers and the postal service itself.
Increase in Customer Satisfaction: Accessing online services anytime, anywhere, to enhance overall satisfaction	Impact on Employment: Reduction in the number of jobs in certain areas of the company.
Business expansion: developing new services and reaching new customers.	High initial cost: acquiring new software, hardware, and technologies

2.2. Digital Transformation: An Interaction Tool between the Customer and the Post Office

Digitization represents a major asset for improving interaction between the postal service and its customers (Rozikin et al., 2024). The implementation of various initiatives as part of this transition, such as the creation of an online portal allowing customers to access various services

such as parcel sending and tracking, mail management, and online payment, demonstrates the postal service's commitment to this path (Saxena, 2024). The use of data generated by these interactions enables the postal service to enhance its products and services and better meet customer needs (Aripin et al., 2024). For example, by analyzing online shopping habits of customers, the postal service can offer personalized offers for an optimal customer experience. The Tunisian Post has been committed to digitization for several years. This transformation is evident through various services, including the complete digitization of the school tuition payment process for students launched in 2019 (Tinjić et al., 2024). To further consolidate this digitization logic, the Tunisian Post recently launched a dedicated mobile application for money transfer, particularly for sending (Tapo et al., 2024).

2.3. The D17 Application: A Digital Service Offered by the Tunisian Post

This is a mobile application for smartphones and iOS devices linked to e-Dinars accounts (Smart, PRO, Youth, DigiCard, etc.) and offers several services. The application allows us to: make payments via QR codes securely and quickly at various points of sale affiliated with the post office, and even perform a series of financial transactions. The D17 application allows us to benefit from a series of fast and secure financial transactions.

The D17 application enables us to benefit from a range of fast and secure financial transactions.

Figure 1. The various services of the D17 application
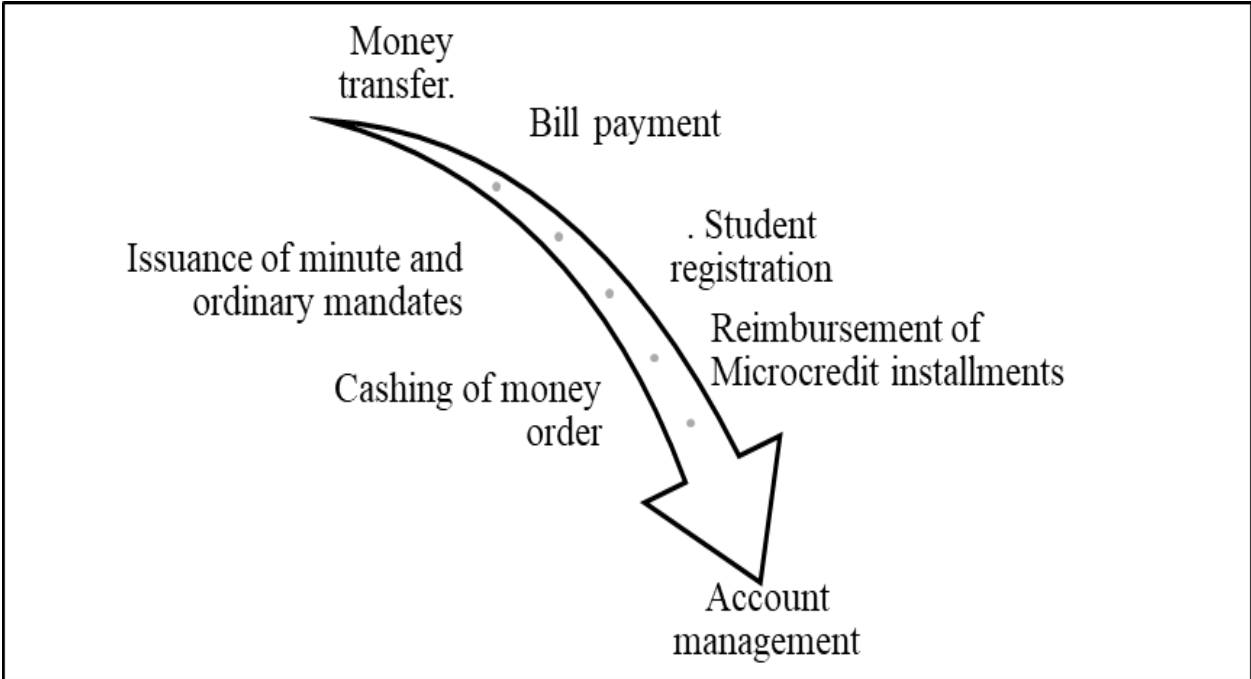
Source: Author's construction

3. Methodology and research results

We conducted a survey among Tunisian postal customers. The survey was conducted in Gafsa province during time periods distributed between March and April 2023. Our sample consists of 100 people. Google Forms developed and analyzed a questionnaire containing the following topics: context of the study, payment method used in the survey, customer experience with digitalization, visibility of the application, determinants of use (trust, security, mobility, ease, prices). (and speed) and overall appreciation and benefit to respondents.

- ✓ The objectives of this quantitative study are the following:
- ✓ Identify the motivations and obstacles to use payment through the D17 application.
- ✓ Study the expectations of Tunisian consumers regarding mobile payment.
- ✓ Conduct a rigorous empirical study in order to provide reliable results that serve as a guide for future decisions and strategies of Tunis Post regarding the implementation of D17. And develop an effective action plan and recommendations.

3.2. interpretation of results

The D17 app is particularly popular among women compared to men, or women tend to use this app more frequently or more regularly than men. In this context, the results showed that the percentage of women using the D17 application is greater than 50.5%, which means that more than half of the users are women (Table 1: P1).

Then, the numbers indicate that the majority of users of the D17 application are under 25 years old, with a rate of 47.3%. Thus, a significant 33.3% of the users of the D17 app are between 25 and 4 years old. We therefore observe that the D17 application is especially popular among young people, especially those under 25 years of age. This may be due to a variety of factors, such as features or content that appeal to this specific age group, or a marketing strategy specifically targeting young people (Table 1: Question 2).

Table 1. Gender, age and occupation of the interviewees

Question n°1 : the gender of the interviewees		
	Frequency	Percentage
Women	50,5	50,5%
Man	49,5	49,5%
Total	100	100%
Question n°2: The age group		
Under 25	47,3	47,3%
Between 25 and 34 years old	33,3	33,3%
Between 35 years and 44 years	11,8	11,8%

Between 45 years and 54 years	7,5	7,5%
55 years or older	0	0%
Total	100	100%
Question n°3: The function of questions		
Student	60,2	60,2%
Employee	19,4	19,4%
Official	15,1	15,1%
Retirement	5	5%
Other	0,3	0,3
Total	100	100%

Source: Author's construction

The majority of users of the D17 application are students, comprising 60.2% of the total. In contrast, a much lower percentage of 15.1% of D17 application users are civil servants. This suggests that the D17 application is particularly popular among students. This could be due to a variety of factors, such as features or content that appeal to this specific user group, or a marketing strategy that specifically targets students. On the other hand, the low representation of civil servants could indicate that this user category is not the primary target audience for the D17 application. This could also be due to busy work schedules or professional obligations that limit the time available to use the application (Table 1: Q3).

Table 2: D17 Application: Users, Reasons for Use, and Evaluation

Question n°4: Use of application D17	**Frequency**	**Percentage**
I use it regularly	56	56%
Yes, but I only used it once or twice	34.5	34,5%
No, I've never used it	10.5	10,5%
Total	100	100%
Question n°5: Reason for use	**Frequency**	**Percentage**
To track my packages	19 ,1	19 ,1%
To pay my bills	24,7	24,7%
To charge my cell phone	25,8	25,8%
To send money to a friend or family member	30,3	30,3%
Total	100	100%
Question n°6: Evaluation of the application	**Frequency**	**Percentage**
Very easy to use	50,6	50,6%
Quite easy to use	15,7	15,7%

Moderately easy to use	15,7	15,7%
Quite difficult to use	10	10%
Very difficult to use	0,8	0,8%
Total	100	100%

The D17 application of the Tunisian Post Office is quite popular among users, with nearly half (56%) using it regularly. This may indicate that the application is useful and convenient for Tunisian Post Office users. However, the fact that 10.5% of respondents never use it may suggest that the application does not meet the needs or preferences of some users, or that they are not aware of its existence or features. It may be interesting for the Tunisian Post Office to investigate the reasons why some users are not interested in the application in order to improve it or better communicate its benefits to potential users (Table 2: Q4).

These figures seem to indicate that the most popular feature of the Tunisian Post Office's D17 application is sending money to a friend or family member, with approximately 30.3% of users using the application for this purpose. This may indicate that the application is seen as convenient for money transfers and may be a practical alternative to more traditional money transfer methods. Around 24.7% of D17 application users use the application to pay bills, suggesting that the application may be considered a convenient solution for online bill payments. This may be particularly useful for people who prefer to make their payments online rather than in person at a Tunisian Post Office branch.

Finally, approximately 19.1% of D17 application users use it to track their parcels. This may indicate that the parcel tracking feature of the application is useful for a subset of application users, but may not be as popular as other features offered by the application. Overall, these figures suggest that the Tunisian Post Office's D17 application is used for a variety of functions, but sending money and paying bills are the most popular features (Table 2: Q5).

This means that over half of users (50.6%) find the user interface of the D17 application very easy to use, which is a positive outcome. Additionally, 15.7% of users also found the user interface quite easy to use, suggesting that the majority of users have a positive user experience. However, there are also 15.7% of users who rated the user interface of the D17 application as moderately easy to use, which may indicate that there are areas where the application could be improved to further facilitate use. Therefore, it might be wise for the application developers to consider the feedback from these users to improve the user interface and offer an even better user experience to all users (Table 2: Q6).

Among those who encountered issues while using the Tunisian Post Office's application, 47.7% contacted customer service for assistance and problem resolution. This suggests that nearly half of users were able to find a solution to their issues by contacting the Tunisian Post Office's customer service.
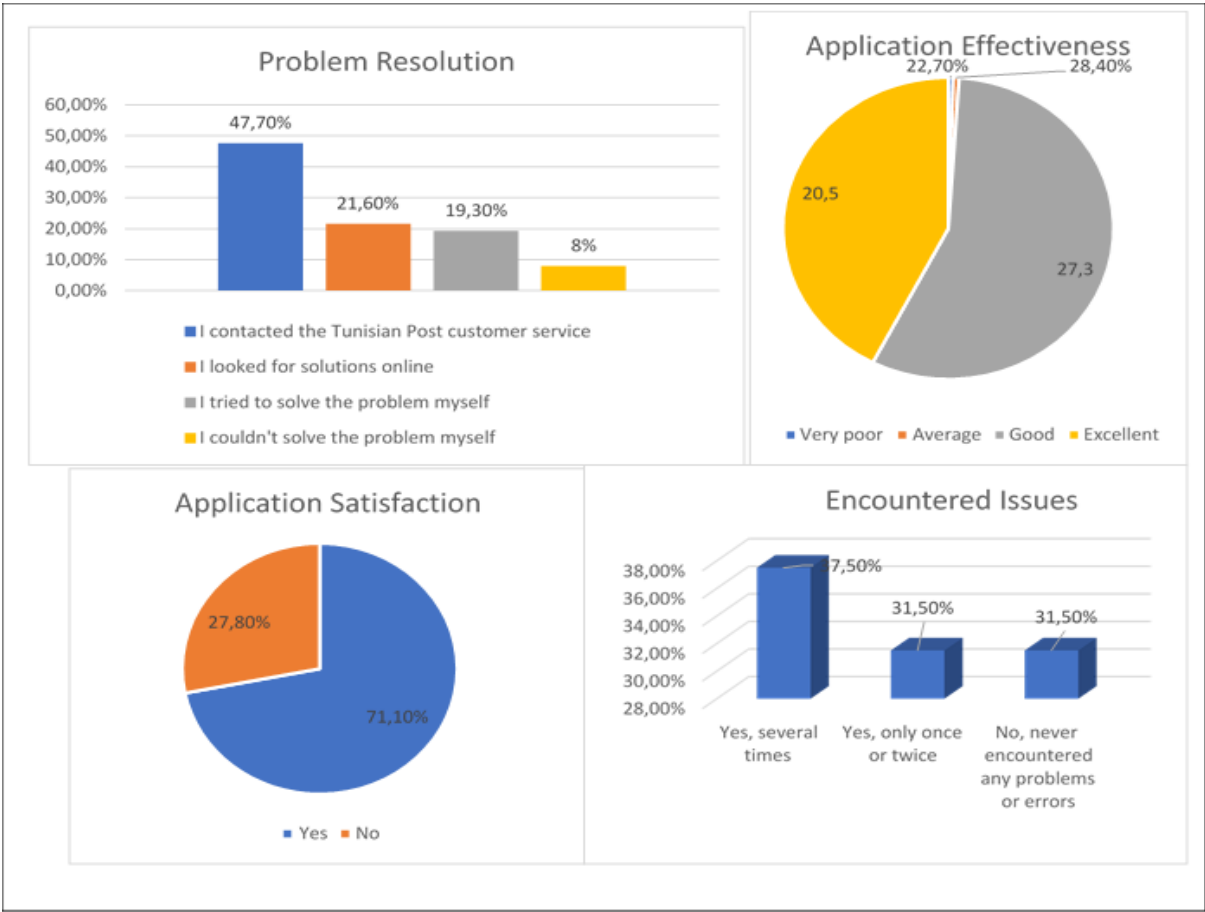
Additionally, 21.6% of users sought solutions online, which may include searching discussion forums, support websites, or online tutorials. This may suggest that some users preferred to seek solutions independently before contacting customer service. However, it is also important to note that 8% of users were unable to resolve their issues even after contacting customer service or searching for solutions online. This underscores the importance of the Tunisian Post Office continuing to improve its customer service and provide more effective solutions to issues encountered by users (Figure 2: Q7).

It appears that opinions about the D17 application are quite mixed. Approximately 28.4% of respondents have a neutral opinion of the application, which may indicate that they were not impressed by the application but also do not consider it to be very bad or excellent. About 27.3% have a positive opinion of the application, suggesting that they enjoyed their experience using the application. On the other hand, approximately 22.7% of individuals have a very negative opinion of the application, which may mean that they encountered major issues with the application or were disappointed by the experience. Finally, around 20.5% of individuals have an excellent opinion of the application, indicating that they had a very positive experience and were highly satisfied with the application. Overall, the overall opinion about the D17 application is quite mixed, with equal positive and negative opinions and a significant proportion of individuals having a neutral opinion. However, there is also a significant proportion of individuals with a very negative or excellent opinion, suggesting that the application may be polarizing based on each user's experience (Figure 2: Q9).

71.1% were satisfied with the quality of the D17 application" means that among all individuals who used the D17 application, 71.1% expressed satisfaction with the application's quality. In other words, this suggests that the majority of users had a positive experience with the D17 application regarding its quality.

However, it is important to note that this interpretation is based on a single indicator and does not consider other aspects of user experience, such as ease of use, relevance of content, or application reliability. Therefore, while a satisfaction rate of 71.1% is considered high, it is important to examine all user feedback and experiences to gain a comprehensive understanding of user opinion on the D17 application (Figure 2: Q10).

Figure2: Encountered issues, Problem resolution, application effectiveness and satisfaction

Finally, based on our analysis of customer satisfaction with the D17 applications, we can conclude that mobile payments are an attractive solution for individuals as they are convenient and easy to use tools. For Post, this application can be seen as a powerful instrument not only for the development of digital strategies but also for the country's financial sector and the economy in general.

Conclusion

In conclusion, digital transformation is a key element for the future of the Tunisian Post. By adapting to new technologies and offering innovative services to its customers, the Tunisian Post will be better positioned to address future challenges and continue to be a significant player in the Tunisian economy. Digital transformation is a process whereby businesses adopt digital technologies to enhance their efficiency, agility, and capacity for innovation. This can include the use of software, data management systems, online platforms, and other digital tools to improve communication with customers, streamline internal processes, automate repetitive tasks, and enhance the customer experience.

After analyzing the results collected from our study on the usage of the Tunisian Post's D17 application, the experience with digitalization is evolving. Thus, the Tunisian consumer's behavior towards mobile payment usage through the D17 application can be influenced by several determinants, notably the security of financial transactions, trust encouraging the customer to use new products offered by the Post, and the ease of operation also influencing consumer behavior.

With Tunisians' behavior towards digitalization in general and the trend of mobile payment through the Post's D17 application in particular, there are still barriers related to transaction security, trust, mobility, and simplicity in the Tunisian behavior. The Tunisian consumer's behavior towards new trends is evolving. The benefits associated with mobile payment serve as motivation for using the application. Adopting a new payment method does not necessarily replace the existing payment method. The mobile application is an effective vector for the Post's strategic digital development and strengthens the relationship between customers and the institution in question.

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