



Digital Transformation of Customer Experience: An Empirical Analysis of Post Office Bejaia-Liberte Users

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Abstract ;

This paper examines the impact of digital transformation on Algeria Post's customer experience. The results suggest that the digitization of Algerian postal services has had a positive impact on customer experience, offering greater options for accessing their accounts. Online services are widely used for financial transactions, but some services have relatively low usage. Users consider digital access to offer significant benefits in terms of time savings and convenience, but cost savings are not considered a major advantage. It is important for Algeria Post to continue investing in digital solutions to improve customer experience and offer more efficient and convenient services.

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1. Introduction

The postal service is one of the oldest and most important services in the world, providing means of communication and mail delivery between people. Since its creation, the postal service has evolved with the technologies of its time, from manual horseback delivery to large-scale mechanized distribution.

In recent decades, digitization has revolutionized the postal sector. New technologies have created faster and more efficient means of communication, such as email, social media, and video conferencing. Digitization has also allowed the postal service to modernize its operations, improve the traceability and security of parcels, and offer new innovative services. It has also facilitated the sending of mail and parcels worldwide, with express delivery services and real-time tracking options. The implementation of online inventory management and order management systems has facilitated the purchase and sale of products online. Blockchain technology is also increasingly being used in the postal sector, providing a secure solution for online payments.

Furthermore, Algeria has not escaped this movement and has launched a program to modernize its postal infrastructure, including the implementation of new mail processing equipment and online banking services. This has reduced delivery times for mail and improved the quality of postal services.

In parallel, the Algerian postal service has launched initiatives to digitize its services, including allowing customers to track the status of their mail or parcels online, offering electronic payment services, and launching mobile applications to facilitate access to its services.

However, there are still challenges to overcome to generalize the digitization of postal services in Algeria. These challenges include a lack of internet access in some regions of the country, low technology adoption by some segments of the population, and the need to strengthen the security of electronic transactions. In summary, the digitization of postal services in Algeria has seen a positive evolution in recent years, but there is still a need for efforts to generalize the use of digital postal services throughout the country.

This article aims to provide elements of answer to the question of how the digitalization of the postal service has affected customers' habits, in other words: Do customers use online services more or still prefer traditional postal services? Other secondary questions are also added:

1. What are the factors influencing the choice between online postal services and physical agency services?
2. Do Algeria Post's online services effectively replace visits to the agency for account consultation?
3. What are the advantages and risks associated with the digitalization of

postal services and how does it affect user satisfaction?

The objective of this research is to analyze the impact of digitization on postal customers' habits in the wilaya of Béjaïa in Algeria, by examining the factors that influence their preference between online services and traditional services. We also aim to evaluate the possibility of completely replacing physical agency flows for account consultation, as well as the advantages and risks associated with digitization. Finally, we seek to measure the level of satisfaction of users of digital tools. The results of this study will be beneficial for improving postal services and responding more effectively to customer needs.

2. Overview of the digitization of the postal service:

2.1. Historical background of postal service digitization worldwide:

The digitization of the postal service is a relatively recent phenomenon that has developed over the past few decades. According to (BELKACEM, 2017), the first efforts to digitize the postal service date back to the early 1980s when postal services such as Deutsche Post and Royal Mail began using computer systems to manage mail shipments.

However, it was only in the 1990s that the digitization of the postal service began to become widespread. According to (LAURIER ET AL, 2012), the arrival of the internet and the rise of electronic communication played a major role in accelerating this process. Postal services

started to offer online services such as buying stamps online and real-time tracking of shipments.

Over time, the digitization of the postal service continued to evolve. According to (DE MUNCK ET AL. 2019), the introduction of blockchain technology opened up new "The Future of Postal Services in a Digital World" by (ALOK GUPTA ET AL, 2018) explores technology opportunities for innovation in postal services, focusing on developments in robotics, artificial intelligence, blockchain, and other cutting-edge technologies.

These scientific publications illustrate the different aspects of the digital revolution in the postal industry, highlighting opportunities and challenges of this technological evolution.

2.2. The state of postal digitization in Algeria

Algeria Post's mission is to implement the national policy for the development of postal and financial services across the Algerian territory. As part of its strategic vision, it aims to become the leader in proximity and home delivery services, the establishment of citizen financial inclusion, as well as the courier/parcel actor by accelerating its digital transformation and the convergence of its physical and digital networks.

To meet the obligation of proximity service for all sections of the population, Algeria Post is committed to a permanent process of densification of its postal

network and computerization. Priority is given to the opening of proximity post points in major urban areas, remote rural regions, and major transport infrastructures. Thanks to these efforts, Algeria Post represents about 32.9% of the African postal network. All post offices have been computerized to offer accessible postal financial services to all citizens of the country, with identical conditions and tariffs everywhere, thus promoting equal opportunities and fulfilling its public service mission in a competitive environment.

The digitization of the postal service in Algeria is underway to modernize postal services and meet current customer needs. According to Algeria Post publications, the digitization project has been ongoing for several years with the aim of reducing operating costs, improving service quality, and facilitating customer access to postal services.

Algeria Post has also undertaken digital transformation in recent years to meet the growing consumer needs for digital services. Among the examples of postal digitization in Algeria, we can mention:

- The establishment of the Algerian postal electronic platform, which allows customers to access online services such as consultation of their accounts, postal operations management, ordering products and services, etc.
- The launch of the Algerian postal mobile application, which allows customers to track their shipments, locate the nearest post offices, pay

bills online, and benefit from other digital services.

- The modernization of postal infrastructures with the installation of new machines and equipment to automate tasks and reduce processing times for shipments.
- The implementation of an electronic tracking system for shipments to offer more transparency and visibility to customers on the status of their parcels.
- The training of personnel in the use of new technologies to ensure a smooth transition to digitization.

These efforts have enabled the Algerian post office to modernize its services and meet customer expectations regarding the digitization of postal operations.

Algeria Post has implemented several initiatives to digitize its services. For example, in 2021, it launched a mobile payment service called "E-Dinar", allowing customers to pay their bills and transfer money through a mobile application. Algeria Post has also implemented an online tracking system for postal shipments, allowing customers to track their packages in real-time and receive notifications.

Furthermore, other initiatives have been implemented to modernize postal infrastructure in Algeria. For instance, in 2019, a modernization program was launched to renovate and equip post offices in Algeria with modern equipment such as electronic payment terminals (EPTs), barcode scanners, and automatic teller machines (ATMs).

However, despite these initiatives, digitizing post services in Algeria still faces obstacles such as low internet connectivity and a lack of staff training for using new equipment. These obstacles have been raised in several scientific studies, such as the one conducted by K. Meddour-Benouali and M. Boukachour in 2021, which highlighted the importance of staff training in the success of digitizing post services in Algeria.

Therefore, digitizing post services in Algeria is an ongoing process aimed at modernizing postal services to meet current customer needs. Although initiatives have been implemented to digitize services and modernize postal infrastructure, some obstacles still need to be overcome to achieve the objectives of this project.

2.3. The different digital service offerings provide by Algeria Post

Algeria Post offers several online digital services to facilitate its customers' operations. Here is a list of the main services with details on each of them:

- **Checking CCP account:** This service allows Algeria Post customers to check their CCP (Postal Check Account) account balance online. Simply log in to the customer space on the Algeria Post website and enter the identification information.
- **Ordering a checkbook:** Customers can order a checkbook online through Algeria Post's customer space. The checkbook will be delivered to the address specified by the customer.
- **Online transfers:** Customers can transfer money from their CCP account to another CCP account online. It is also possible to transfer money to bank accounts of other institutions.
- **Online recharge:** Algeria Post also offers an online recharge service for prepaid mobile phone cards such as the iddom card. Customers can recharge their account in a few clicks from the customer space.
- **EDAHABIA card request:** This prepaid card allows Algeria Post customers to carry out secure electronic transactions. Customers can request an EDAHABIA card online through the customer space.
- **Online payment:** Algeria Post also offers an online payment service to settle bills from different providers. Customers can make these payments from their CCP account or their EDAHABIA card.
- **Checking payment notices:** Customers can check payment notices for bills through the customer space. This feature allows customers to track payments made and verify bills awaiting payment.
- **RIB request:** Customers can request a RIB (Bank Identity Statement) online through the customer space. This document is necessary for banking transactions such as transfers.
- **Online banking service:** This service allows customers to access their bank accounts online, check their balance, track their transactions, and pay their bills online. To access this service, customers must register on Algeria Post's online banking website:

<https://www.poste.dz/banque-en-ligne>

- The Electronic Post Service: This service allows Algeria Post customers to have a free @poste.dz email address, which they can use to send and receive emails. Customers can also access their inbox from the Electronic Post website: <https://www.poste.dz/poste-electronique>.
- The Prepaid Card Service: This service allows Algeria Post customers to obtain a prepaid card that can be used to make purchases online and at participating stores. For more information about this service, please visit the Algeria Post website: <https://www.poste.dz/carte-prepayee>
- The Online Ordering Service: This service allows Algeria Post customers to order products online from the Algeria Post website and have them delivered to their home. Customers can also track the status of their order online. For more information about this service, please visit the Algeria Post website: <https://www.poste.dz/commande-en-ligne>
- The Electronic Billing Service: This service allows Algeria Post customers to receive their bills by email instead of postal mail. Customers can also pay their bills online using Algeria Post's online banking service. For more information about this service, please visit the Algeria Post website: <https://www.poste.dz/facturation-electronique>
- The BaridiMob application offers a range of convenient features for efficiently managing finances, including

checking balances, recent transactions, account statements, as well as the ability to block a card in case of loss or theft

- The Edahabia Card in Algeria allows for electronic payment, cash withdrawal, money transfer, bill payment, balance inquiry, and has enhanced security measures. Features may vary by bank and region.
- The IDOOM Card is a prepaid card that allows customers to access a variety of services offered by telecommunications operators in Algeria. Customers can use the IDOOM card to purchase data plans, calls, and SMS.

These online services offered by Algeria Post provide great flexibility and convenience for customers. However, it is important to note that some services may require identity verification or additional validation for security reasons.

3. Survey and Data Collection

The digital transformation of the postal service has undoubtedly had a significant impact on customer habits. To better understand how customers have been affected by this transformation, a questionnaire survey was conducted among 500 people at the Bejaia agency. The following outlines the procedure for conducting our survey.

3.1. Sampling

The sample selection was carried out by randomly choosing 500 people who regularly visited the Bejaia agency for their postal needs. The sample was limited

to the "city center" post office due to resource constraints and feasibility to conduct a larger survey. However, this sample was representative of the target population, namely postal service customers who have habits and preferences regarding postal services.

3.2. Questionnaire and Survey Process

We developed a questionnaire, taking into account the objectives of our survey. This questionnaire included open and closed-ended questions on various aspects, such as the use of online postal services, the frequency of use of traditional postal services, the reasons for preferring one type of service over the other, etc. We carefully formulated several questions covering various aspects, including participant profiles, online service usage, benefits and obstacles, as well as satisfaction and suggestions. Participants completed the questionnaire on-site or were invited to fill it out online at their convenience. We made sure that participants could respond anonymously to ensure the confidentiality of their responses. We also ensured that participants understood the questions and that the responses were reliably recorded. After collecting the questionnaires, we conducted a quality check to ensure that only complete and valid questionnaires would be included in our analysis. In total, we collected 345 usable questionnaires. To analyze the collected data, we conducted statistical analysis using statistical software. We used techniques such as cross-tabulation and proportion

difference tests to answer research questions.

4. Results and Discussion

4.1. Sample Profile

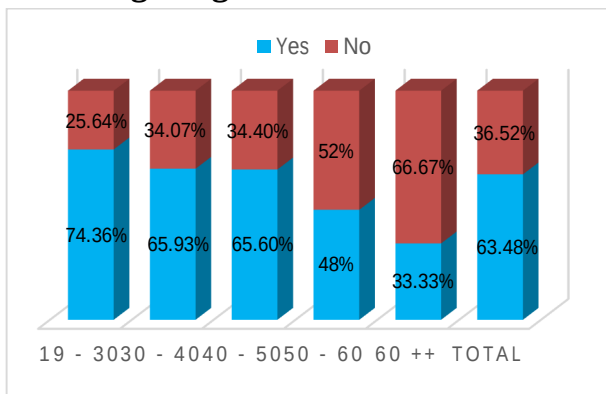
According to the results of our survey, the studied sample was predominantly composed of male individuals, representing 52.4% of the studied population. The most representative age group was that of 30 to 40-year-olds, while civil servants, executives, and students were slightly predominant in the studied population, representing 68.2% of the sample. Furthermore, 59% of these individuals were university graduates. It is also worth noting that the different income categories were significantly represented in the sample, with a proportion of 27.2% of participants earning between 30,000 and 50,000 DA. These results highlight the diversity of the studied population and emphasize the importance of considering different socio-economic variables in data analysis.

4.2. Exploration of socio-demographic determinants of online service adoption

4.2.1. Use of online postal services according to age

The figure below illustrates the data from the survey on the use of online services according to age.

Fig (01): Use of online postal services according to age



Source: Created by the author using data from the survey

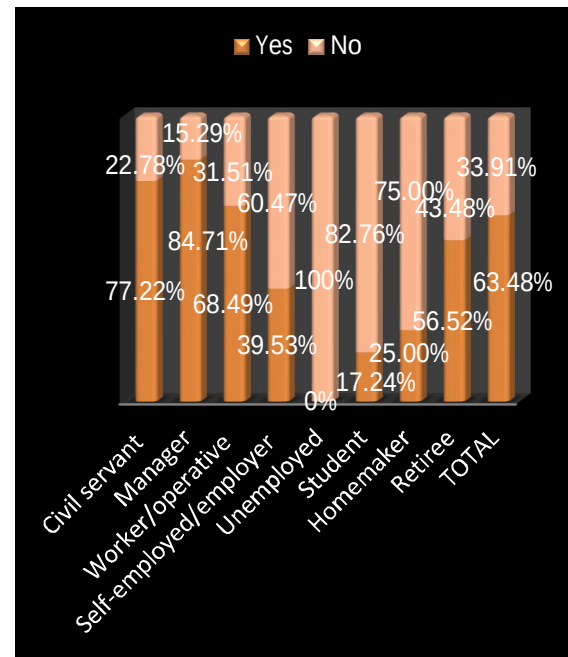
The survey results indicate that the majority of people using online services are aged between 30 and 50, with 65.93% aged between 30 and 40, and 65.60% aged between 40 and 50 responding "yes" to using online services. In contrast, a much smaller number of people aged 19 to 30 and over 50 use online services, with only 29 respondents (74.36%) saying "yes" in the 19 to 30 age group, and 19 respondents (63.48%) saying "yes" in the over 50 age groups.

It is also interesting to note that the number of people responding "no" to using online services is quite high, particularly in the over 60 age group, with 14 out of 21 people responding "no". This may indicate a lack of accessibility or familiarity with online technologies among older people.

Overall, these results suggest that online services are widely used by people aged 30 to 50, but there is potential for greater adoption among younger and older age groups.

4.2.2. Use of online services according to socio-professional category.

Fig (02): Online Service Usage by Socio-Professional Category



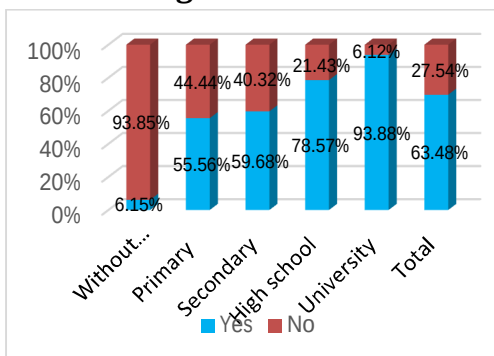
Source: Created by the author using data from the survey

Out of 345 respondents, 219 reported using online services, while 117 reported not using them. Analyzing the results by socio-professional category, we can see that executives are the biggest users of online services, with 84.71% (72) reporting that they use them and only 15.29% (13) reporting that they do not. Civil servants are also significant users, with 77.22% (using online services and 22.78% not using them). Workers/operatives are also frequent users, with 50 (68.71%) using online services and 23 (31.51%) not using them. On the other hand, self-employed/employers are less likely to use online services, with only 39.53% (17)

reporting that they use them and 60.47% (26) reporting that they do not. Retirees also have a relatively low usage rate, with 56.52% (13) reporting using online services and 43.48% (10) not using them. The unemployed have a zero usage rate, while students and homemakers have relatively low usage rates. In conclusion, this survey suggests that socio-professional category is an important factor in the use of online services, with executives and civil servants being the biggest users of online services, while self-employed/employers and retirees tend to use them less.

4.2.3. Comparing online service use across education levels: Investigating Correlations

Fig (03): Use of online services according to education level



Source: Created by the author using data from the survey

Examining the presented data, it is clear that education level is an important factor in the use of online services. The results show a strong correlation between education level and the use of online services. The figures demonstrate that the percentage of people using online services increases significantly with education level. For example, only 6.15% of people

with no education declared themselves as users of online services, while 93.88% of university-educated people declared themselves as users. This result clearly indicates that people with higher levels of education are more likely to use online services. Furthermore, the figures also show that the total number of respondents increases with education level, suggesting that access to education is also an important factor in the use of online services. The results of this survey therefore clearly indicate that education level is an important factor in the use of online services, and that people with higher levels of education are more likely to use these services.

4.2.4. The Relationship between income and online service utilization.

To determine if income is an important factor in the use of online services, we can perform a contingency analysis or a chi-square test. Here is the contingency table for the collected data:

Tab (01): Use of online services according to income

	Yes	Now	
Less than 20,000	22	12	34
20.000 to 30.000	24	12	36
30.000 to 40.000	33	23	56
40.000 to 50.000	46	18	64
50.000 to 60.000	52	27	79
More than 20,000	42	34	76
Total	238	107	345

Source: Created by the author using data from the survey

To perform the chi-square test, we need to define our null and alternative hypotheses. The null hypothesis is that income has no effect on online service usage, while the alternative hypothesis is that income does have an effect on online service usage.

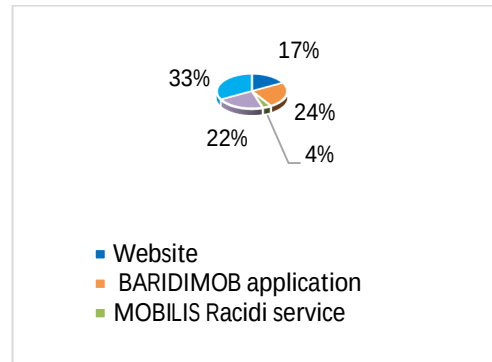
Next, we calculate the chi-square and associated p-value. If the p-value is less than a chosen level of significance (e.g. 0.05), then we reject the null hypothesis and conclude that there is a significant relationship between income and online service usage.

The result of the chi-square test for this data gives a chi-square value of 25.17 with 5 degrees of freedom and a p-value of 0.0003. Since the p-value is less than 0.05, we can conclude that there is a significant relationship between income and online service usage. In other words, income is an important factor in online service usage.

4.3. Customer preferences of Algeria Poste in Béjaïa: a comparison between online account checking and physical agency.

The Algerian post office has presented five options that customers can use to check the balance of their postal account: website, BARIDIMOB application, Racidi service from Mobilis, and the post office counter.

Fig (04): Account checking preferences for customers.



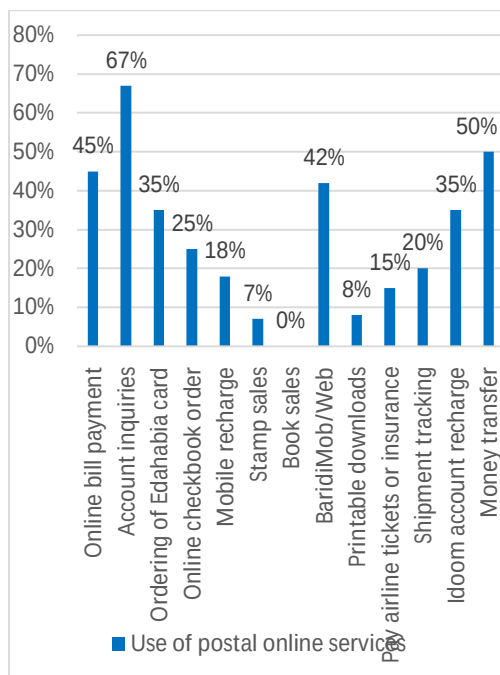
Source: Created by the author using data from the survey

According to the survey results, it appears that the post office counter remains the main option used by Algerian Post customers to check their account balance, with a rate of 33%. However, digital options are also gaining in popularity, with significant use of the BARIDIMOB mobile application (24%) and bank ATMs (22%).

This suggests that the digitization of Algerian Post services has begun to have a positive impact on the customer experience, providing customers with a wider range of options for accessing their accounts. However, there is still potential for improvement for the digital services offered, as only 17% of customers opted for the website to check their accounts. Overall, it is important that Algerian Post continues to invest in digital solutions to improve the customer experience and offer more efficient and convenient services.

4.3.1. Analysis of usage patterns for online services offered by Algerian post: which services are most and least popular?

Fig (05): Use of Algerian post's online services.



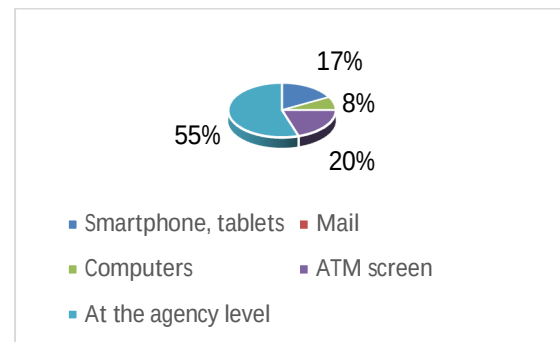
Source: Created by the author using data from the survey

According to the survey results on the use of online services offered by the post office in Algeria, the most popular services are account checking with 67%, online bill payment with 45%, money transfer with 50%, and BaridiMob/Web with 42%. The least popular services are book sales with 0%, stamp sales with 7%, and mobile phone top-up with 18%. It is interesting to note that the ordering of the Edahabia card has relatively low usage at 35%, and the online checkbook ordering is even less used with only 25%. Overall, the results suggest that online services offered by the post office in Algeria are widely used for financial transactions such as bill payment and money transfer. However, some services such as book sales and mobile phone top-up have relatively low usage. This may be due to a preference for

traditional sales channels or limited awareness of available online services.

4.3.2. The Importance and Functioning of CCP Account Verification Channels

Fig (06): Use of Algerian post's online services.

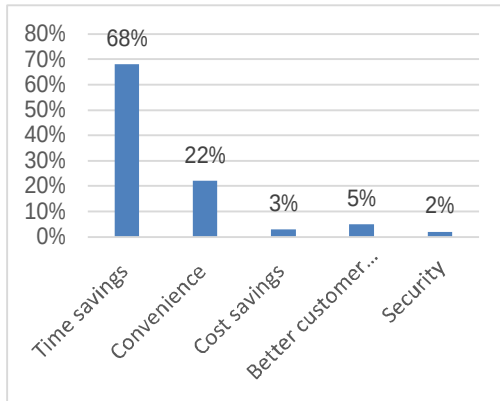


Source: Created by the author using data from the survey

According to the survey results, the majority of respondents (55%) reported using CCP account consultation channels in agencies, suggesting that physical flows in agencies are still widely used. In contrast, the use of smartphones and tablets represents only 17%, while ATM screens represent 20% and computers only 8%. These results indicate that online services have not yet completely replaced physical flows in agencies for CCP account consultation.

4.4. Adoption of digital services: understanding the issues and opportunities for users

Fig (07): Convergence between service usage and benefits.



Source: The author, based on survey results

The survey results show that time savings are the most important factor for users of Algeria Post's services, with 68% of respondents considering it the primary advantage of digital access. This suggests that users appreciate the speed of being able to efficiently conduct transactions online, without having to physically travel to a post office.

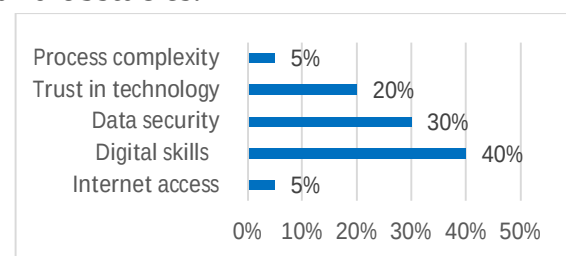
Convenience is also considered a significant advantage, with 22% of respondents selecting it. This suggests that users appreciate the ease of use of online services, such as the ability to manage accounts, pay bills, and send money online.

However, cost savings are considered a less important factor, with only 3% of respondents considering it an advantage of digital access. This suggests that users do not necessarily consider online services to be cheaper than traditional services.

Finally, the best customer experience and security are considered less important advantages, with 5% and 2% of respondents selecting them, respectively. This suggests that while these factors are important to some users, they are not considered key advantages of digital access to Algeria Post's services.

Overall, the survey results suggest that users of Algeria Post's services see digital access as offering significant advantages in terms of time savings and convenience. This may indicate that efforts to digitize Algeria Post's services have been well received by users, and that these efforts have improved the overall customer experience. However, it is also important to note that cost savings are not considered a major advantage, which suggests that online services are not considered significantly cheaper than traditional services.

Fig (07): Convergence between usage and obstacles.



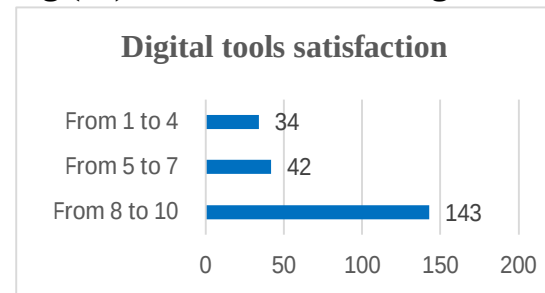
Source: The author based on the survey results.

The results show that the main obstacles to using online services for Algeria Post customers are digital skills, data security, and trust in technology. Digital skills, which account for 40% of the obstacles, indicate that many Algeria Post customers struggle to use online services due to their lack of knowledge and digital skills. This

suggests that Algeria Post should consider initiatives to improve customers' digital literacy to facilitate their use of online services. Data security, which represents 30% of the obstacles, highlights customers' concerns about the protection of their personal information when using Algeria Post's online services. Therefore, Algeria Post should implement effective security measures to protect its customers' data. Trust in technology, which represents 20% of the obstacles, indicates that some customers are skeptical about the reliability and security of the online services offered by Algeria Post. Therefore, Algeria Post should work on transparency and communication to reassure customers about the quality of its online services. The complexity of the process, which represents only 5% of the obstacles, indicates that Algeria Post customers may encounter technical difficulties when using online services. Therefore, Algeria Post should improve the user-friendliness and ease of use of its online services. Finally, access to the internet accounts for only 5% of the obstacles, which proves that most Algeria Post customers have access to the internet and can use online services without too much difficulty. Overall, the survey results suggest that to improve the customer experience of Algeria Post, it may be important to provide resources to help customers improve their digital skills, strengthen data security, and develop trust in the technology used for online services.

4.5. Measurement of customer satisfaction with Algeria Post's digital services

Fig (08): Satisfaction with digital tools



Source: The author based on the survey results

These results show that the majority of respondents are satisfied with digital tools; with 143 people responding that they are very satisfied (rating of 8 to 10). This represents approximately 70% of respondents. However, there is also a significant number of respondents who are not satisfied or have a medium level of satisfaction, with 42 people responding that they are satisfied (rating of 5 to 7) and 34 people responding that they are dissatisfied (rating of 1 to 4). This represents approximately 20% and 10% of respondents, respectively. These results suggest that overall, digital tools are well perceived by the majority of users, but there is still room for improvement to meet the needs and expectations of less satisfied users. It may be useful to conduct more in-depth surveys to better understand the reasons for the satisfaction or dissatisfaction of respondents and identify specific areas that may require improvement.

Overall, the digitization of postal services can improve efficiency, speed, and

convenience of transactions for many customers, but it is important for the postal service to ensure that its customers have access to the necessary resources and skills to use new digital technologies in order to optimize their overall satisfaction.

5. Conclusion:

The survey conducted with 500 people at the Bejaia agency in Algeria suggests that the digitization of Algerian postal services has had a positive impact on the customer experience by offering a greater choice of options to access their accounts. However, there is still a strong use of physical flows in agency for the consultation of CCP accounts, with limited use of smartphones and tablets, representing only 17% of usage. The results also indicate that online services are widely used by people aged 30 to 50, but there is potential for greater adoption among younger and older people.

The post office is still the most common choice for checking the account balance, but digital options such as the BARIDIMOB mobile application and bank automated teller machines are becoming increasingly popular. Online services are widely used for financial transactions, but some services such as book sales and mobile phone recharge have relatively low usage.

Executives and civil servants are the biggest users of online services, while self-employed/employers and retirees tend to use them less. Overall, it is important for Algerian Post to continue investing in digital solutions to improve the customer experience and offer more efficient and

convenient services. The results also suggest that users of Algerian Post services consider digital access to offer significant advantages in terms of time savings and convenience, but cost savings are not considered a major advantage.

It is important to provide resources to help customers improve their digital skills, enhance data security, and develop trust in the technology used to improve the customer experience of Algeria Post. Digitization can also contribute to reducing congestion in physical branches and offer environmental benefits by reducing paper and other resource consumption. Finally, it is essential that Algeria Post ensures that people who do not have access to digital technologies are not excluded from using postal services and that alternatives are available to them.

Following the analysis of the study results, a set of recommendations was developed, the main ones being:

- Develop training resources: Algeria Post could develop online training resources to help customers improve their digital skills. These resources could include videos and tutorials to help customers understand how to use postal services online, as well as tips for improving online security.
- Simplify the user interface: Algeria Post could simplify the user interface of its online services to make them more accessible to customers of all ages and levels of digital proficiency. In addition, the interface could be improved to be more intuitive and easy to use.

- Offer online customer support: Algeria Post could set up online customer support channels to help customers resolve issues related to the use of online services. This could include live assistance via online chat or assistance by email.
- Promote the benefits of online services: Algeria Post could better communicate the benefits of using online services, including convenience and time savings. Marketing campaigns could be launched to raise awareness of these benefits among customers.
- Offer online special deals: Algeria Post could offer special deals to encourage customers to use online services. For example, it could offer discounts or special offers for customers who use online services for the first time.
- Improve security: Algeria Post could improve the security of its online services to enhance customer trust. This could include the use of two-factor authentication and other security measures to protect customer data.
- Adapt online services for people with specific needs: Algeria Post could adapt its online services to meet the needs of people with specific needs, such as people with visual impairments or learning disabilities. Accessibility features could be integrated to make online services more accessible for all customers.

By following these suggestions and recommendations, Algeria Post could improve the online customer experience, strengthen customer security and trust, and encourage greater adoption of online services.

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