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Exploring the determinants of users' satisfaction with online payments in Tizi-Ouzou, Algeria

Dr. Chems Eddine BOUKHEDIMI[1]
[1]University of Tizi Ouzou, Department of commerce. Algeria

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Abstract

Using multiple correspondence analysis and the Chi-square test, this study investigates the effects of socioeconomic and demographic factors on electronic payment among 155 Algerian e-commerce users. An online survey was conducted between July 20th, 2023 and January 25th, 2024. Some of the elements that may influence electronic payment consumers' happiness include gender, age range, academic level, marital status, and income level. The findings confirm that these variables are independent of e-payment satisfaction. In other words, the observed differences are not significant.

The current study suggests devoting more attention to less prevalent features (such as men, generations X and Z, married e-shoppers, and college students). Furthermore, a qualitative survey is recommended to better understand motivation, habits, and previous experiences with e-shopping and electronic payments. Furthermore, it is recommended to enhance the sample size.

Keywords: e-shopping, e-consumer, e-payment, multiple correspondence analysis, Chi-square test, Algeria.

Introduction

The development of e-commerce has created new financial needs that are not effectively provided in many cases by traditional payment systems (Aigbe, & Akpojaro, 2014). Thus, e-commerce is fast growing and gives an opportunity for businesses to increase sales via the internet (Junadi, 2015). Today, every individual and corporation is familiar with e-commerce to make sales and purchase items and services (Masihuddin, et al, 2017).

E-payment is a technique that provides facilities for paying for services or items purchased via the internet. In this sense, electronic payment technologies are now widely used, such as ATM transactions, credit or debit card use, online banking, and mobile banking. Thus, an electronic payment system replaces a cash payment system (Kabir, Saidin, & Ahmi, 2015). In other terms, the e-payment system facilitates transaction processing in e-commerce between consumers and sellers. (Junadi, 2015). In this regard, researchers conducted studies that carried on online shopping (Qatawneh, Aldhmour, & Alfugara, 2015; Junadi, 2015; Premchand & Choudhry 2015; Roozbahani, Hojjati, and Azad, 2015; Hidayanto et al, 2015; Sharma, 2013; Roozbahani, Hojjati, and Azad, 2015; Bartok, 2018; Ab Hamid, & Chen, 2020; Goker & Ayar, 2020;Fadel, Zerouti, and Rouaski, 2021; Malviya & Arya, 2021; Iraten et al, 2022; Le, & Chu, 2022; Amara, & Saidi,. 2023; Boukhedimi, 2025).

This paper aimed to investigate consumers' views on e-payment satisfaction in Algeria.

2. Conceptual framework of e-payment

Electronic money was defined by the European Central Bank as: "an electronic stock of cash value on a technical method commonly used to make payments to contractors other than its issuance, without the need for a bank account when the transaction is made and used as a prepaid portable tool. From the other side, electronic payments is a payment mechanisms that use electronic media that do not involve cash (Hascaryani,

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2013). Electronic payment systems can also be defined as inter-organizational information connected to transaction systems that connects multiple associations and individual clients. Complex interaction requires collaboration among partners, technology, and the environment.

According to the Federal Financial Institutions Examination Council (2010), Electronic payment is a modern retail payment method in which a seller gets payment information for goods and services and enters it into an electronic template, resulting in electronic files for network processing. Furthermore, electronic payments can be defined as the electronic transfer of funds from the payer to the recipient using an electronic payment system. E-payment, often known as electronic payment, is a modern payment mechanism that encompasses all activities related to digital and card payments. It enables the paperless exchange of money. E-payment systems are regarded as one of the most important drivers of economic success in emerging countries, and they contribute significantly to the expansion and availability of financial services. Essentially, a payment system is a collection of regulations that allows users to transfer money (Roozbahani, Hojjati, and Azad, 2015). The e-payment service has a web-based user interface that allows consumers to access and manage their bank accounts and transactions remotely. (Hidayanto et al, 2015). The use of technology in modern financial services, known as electronic payment systems, makes banking performance more optimal; numerous operations may be executed swiftly and precisely while affecting productivity (Sharma, 2013).

E-payment provides significant cost savings on paper-based payments (Premchand & Choudhry 2015). Furthermore, an efficient and dependable e-payment system enables faster payouts, better tracking, and transparent transactions, less time wasted, cost savings, and increased trust between sellers and customers. Financial transactions occur as technology is developed and adopted in the e-payment system. Assimilate users and quality e-payment technologies shape their own perceptions and expectations. (Ab Hamid, & Chen, 2020).Ultimately, e-payment refers to electronic payment in the context of e-commerce online transactions carried out via the Internet. Electronic payments can also be described as a paperless payment method. (Junadi, 2015).

2.1 Obstacles to the advancement of electronic payment in Algeria

The E-payment System has several advantages for payers, recipients, e-commerce, banks, organizations, and governments. These benefits may lead to universal electronic payment systems around the world. (Qatawneh, Aldhmour, and Alfugara, 2015). However, the online payment method has several financial dangers that can develop throughout the transaction process. There are various reasons why online payments may have a negative influence. Because of the nature of the internet, non-e-commerce-specific solutions cannot ensure payment legitimacy or security. Several problems are confronted regarding the introduction of e-payments in Algeria (Fadel, Zerouti, and Rouaski, 2021; Amara, & Saidi. 2023) :

- A lack of advertising initiatives to promote electronic payment cards.
- Users have limited options for the variety of services provided by cards.
- Vendors use few electronic payment devices.
- Operational risk, including an increase in theft, forgery, and fraud.
- The informal economy also referred to as the subterranean economy, because the Algerian economy is dominated by the informal sector, which exists concurrently with the legal economy.
- The cash culture: Algerian society evolves in a cash-dominated environment, which influences the adoption of electronic payments. This makes it difficult to determine the source of the money earned and financial flows.

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- Psychological feeling: primarily related to the utilization of money while taking into consideration our traditions and conventions. The Algerian population remains tied to the culture of cash.
- Infrastructure: lack of solutions and technical resources to support the e-commerce platform.
- Legal anchoring: There is no legal arsenal governing e-commerce in Algeria, particularly user protection on this platform.
- Traceability: We may also explain this delay by the problem of traceability, which is especially important for criminals, because using electronic payment would undoubtedly allow for the identification of money and the fight against evasion, tax fraud, and money laundering, the latter being the most serious type of economic and financial crime.
- The mobility of small businesses, particularly nomadic vendors that operate illegally and without business registration.
- Lack of political will: Regardless of the obstacles Algeria has, there are current legal and technological solutions; all that is needed is political will to drive things forward and compensate for all of the recorded delays.

3. Research methodology

This study used both qualitative and quantitative methods. The qualitative technique was driven to focus on conceptual frameworks based on e-commerce, offline word of mouth, and online word of mouth, which were addressed throughout the conceptual portion by reviewing publications from Google Scholar, Science Direct, and Research Gate. Specific keywords, such as e-commerce and e-payment, were also investigated. Additionally, the quantitative method was used to test the given hypotheses. This study was carried out based on online survey, using multiple correspondence analysis and the Chi-square test.

3.1 Sampling

Customers who had made at least one online transaction from Algeria made up the sampling unit. As stated in (Chang et al, 2006; Polya, 1920; Johnson, 2004; Tomothy, 2005; Berenson et al, 2012; Naval, 2013; El Sherif, 2021; Nair, et al, 2022; Boukhedimi et al, 2023; Sriram, 2023), the sample size (n=155) is representative according to the central limit theorem (CLT), given that the total number of e-commerce users in Algeria was 14.05 million in 2022 (Saifaddin, 2023). As a result, the mean's sample distribution will be regularly distributed, as long as one has a sufficiently large sample size (e.g, n= 30).

3.2 Data collection

An online poll was conducted among 155 Algerian respondents who utilize online shipping. A questionnaire was used to collect data, and participants were asked questions about their satisfaction with online payment. The online poll was conducted from July 20, 2023 to January 25, 2024, using a probability (random form) sampling technique. After that, the collected data was put into the SPSS program V26 to test the study hypotheses.

3.3. Research hypotheses

This paper gives four hypotheses, which are cited below.

H1. Gender has a significant impact on e-payments satisfaction.
H2. Generational differences have a considerable effect on e-payments satisfaction.
H3. Marital status has a significant impact on e-payments satisfaction.
H4. Educational level has a significant impact on satisfaction with e-payment satisfaction.

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4. Results & discussion

4.1 Disruptive statistis

4.1.1 Soiodemographic statistics

In terms of gender distribution, women made up 56.1% of the sample, while men made up 43.0%. Looking at the count by age category, respondents are mostly from Generation Y (76.8%), followed by Generation Z (20.6%), and Generation X (2.6%). On the other hand, the majority of online shoppers (90.3%) in our sample hold a bachelor's, master's, or doctoral degree. However, 9.7% are undergraduates. Overall, both graduates and undergraduates are eligible to buy online.

The final demographic variable to be analyzed in the descriptive statistics section is marital status. In this regard, 92.3% of the sample research is unmarried, whereas 2.6% are married with kids. However, only 5.2% of respondents don't really have any children.

Q1. Are you satisfied with the process of online payment?

According to the survey results, the majority of respondents (65.8%) are satisfied. However, 34.2% of the sample is dissatisfied with the e-payment. In this view, they just want to ensure purchase and want to pay in cash to avoid theft by internet pirates or e-sellers.

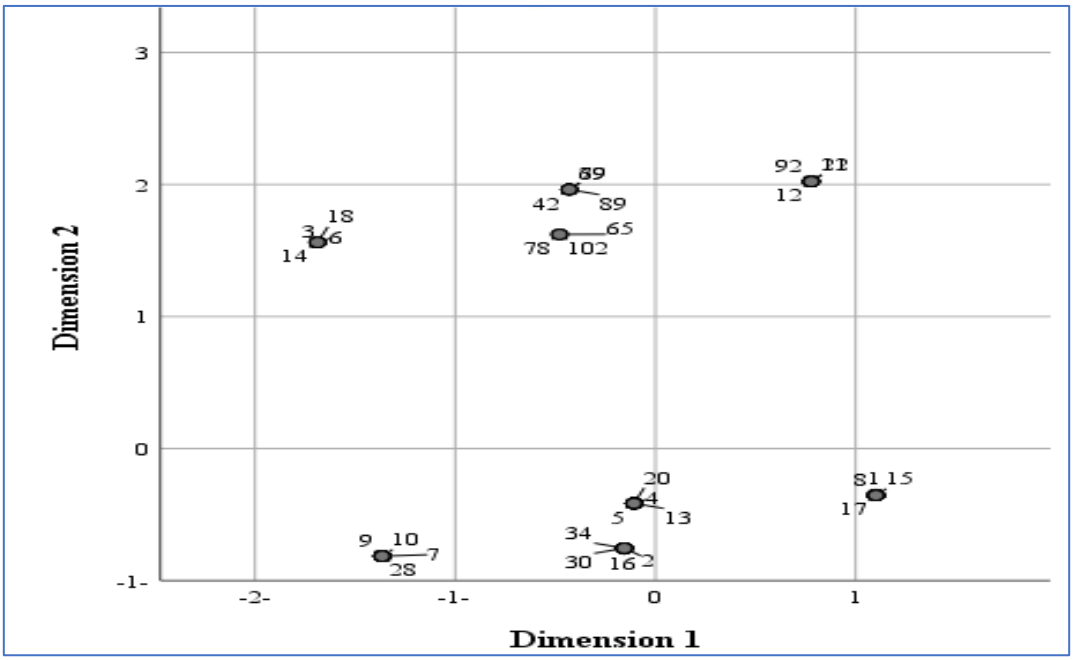
Q2. In which period did you start purchasing online?

Regarding this topic, it has been shown that the majority of respondents (78.1%) began e-shopping following the COVID-19 epidemic in 2020.

Q3. Do you have a credit card?

In this regard, 49.7% of the target demographic does not own credit cards. However, their friends or family members may arrange for e-payment.

Figure 1. Object points labeled by case members



According to the figure 1, there are 6 groups of respondents who shared the same answers.

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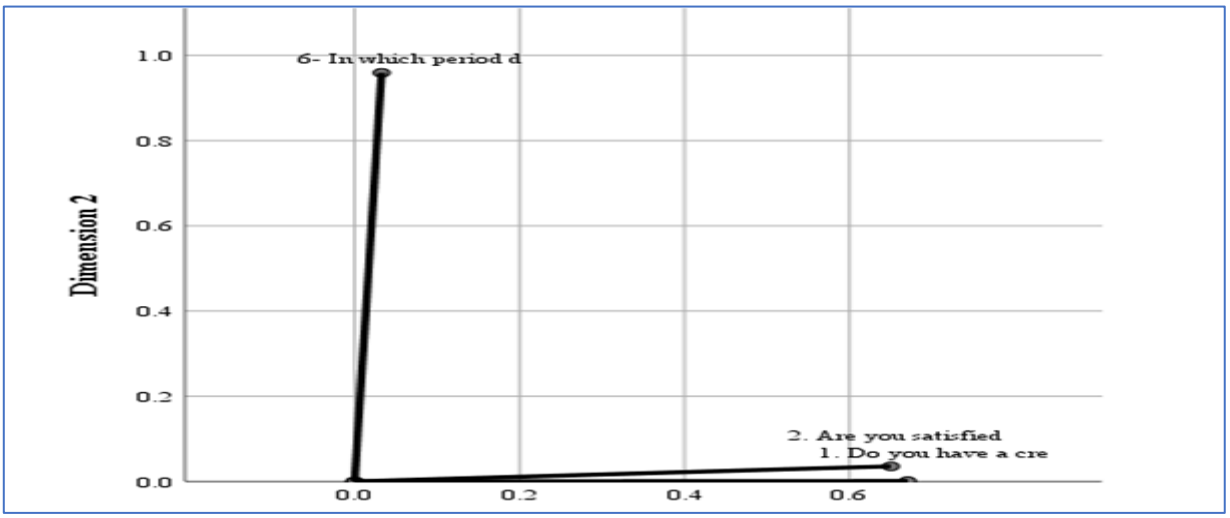
Table 1. Discrimination measures

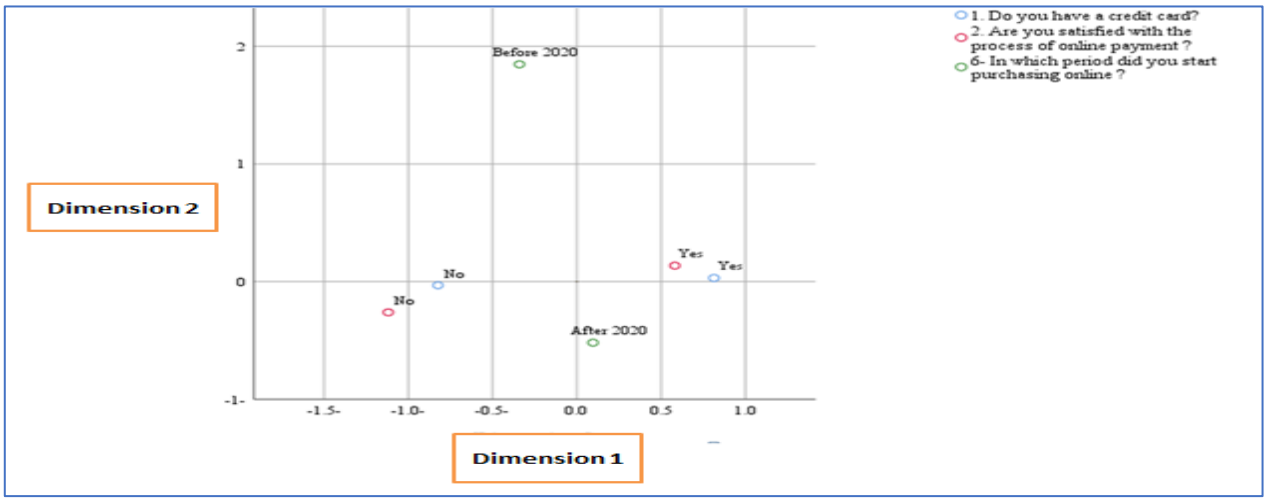
Questions / Dimensions	1st dimension	Sig	2nd dimension	Sig
Do you have a credit card?	×	**0.67**	/	/
Are you satisfied with the process of online payment?	×	**0.65**	/	/
In which period did you start purchasing online?	/	/	×	**0.959**

Figure 2. Plot of discrimination measures



The next plot show that the majority of sample respondants started using online shopping in accordance with the Covid-19 epedimic (after 2020). Besides, Those who hold credit card are satisfied with the online payment process.

Figure 3. Joint plot of category points



4.2. Measuring the impact of demographic factors on the "e-payment satisfaction":

The Chi-square test was used to assess the independence of the dependent variable (e-payments satisfaction), which is represented by the question of whether respondents are satisfied with e-payments, and the independent variable, which consists of demographic data (gender, age ranges, marital status, and educational level).

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- **Null hypothesis (H_0):** Correlation isn't significant if p-value > 0.05

- **Alternative hypothesis (H_1)**: Correlation is significant if p-value < 0.05

Table2. Results of Chi-square test of independency

Variables	Gender	Age cohort	Marital status	Educational level
p-value	0.201	0.715	0.588	0.284

Source**:** Survey results

Table 2 above allows for comments on the results obtained. In this situation, an independent relationship is established between demographic characteristics and online payment satisfaction. However, none of these criteria had a significant impact on e-payment satisfaction. Furthermore, the cross-tabulations in the table below help to explain the Chi-square test results.

Thus, it is clear that the majority of men and women are influenced by internet word of mouth. Moving on to the other demographic variable, the majority of all age groups pay close attention to comments posted on social media. Furthermore, academic level has little impact on e-payment satisfaction. Finally, there are no significant differences in e-payment satisfaction between married couples with or without children and unmarried e-buyers.

Table3. The cross tabulation of the study

		Yes	No	∑	N
Gender	Men	41	27	68	155
	Women	61	26	87	
Age range	Generation X	3	1	4	155
	Generation Y	55	44	119	
	Generation Z	24	8	32	
Marital status	Married with children	3	1	4	155
	Married without children	4	4	8	
	Unmarried	95	48	143	
Educational level	Postgraduates / graduates	94	46	140	155
	Undergraduates	8	7	15	

Source**:** Survey data

Table 4 explains the study's findings, which indicate that all hypotheses were rejected. In other words, there are no significant differences in satisfaction with the online payment process across all sociodemographic categories.

Table4. Study result

Hypotheses	Variables	p-value	Relationship	results
H1	Gender	0.201	**Independence**	**Rejected**
H2	Age range	0.715	**Independence**	**Rejected**
H3	Marital status	0.588	**Independence**	**Rejected**
H4	Educational level	0.284	**Independence**	**Rejected**

5. Conclusion

This research provides an analysis that sheds light on the demographic aspects impacting e-payment satisfaction in Algeria. Overall, the data show no significant differences between males and women (p-value: 0.201), age groups (p-value: 0.715), academic level (p-value: 0.284), or marital status (p-value: 0.588). As a result, the study's findings may be useful in scientific research. In compliance with the study's constraints, the survey was administered online via Google Form. As a result, it is recommended that future studies incorporate a qualitative survey to better understand motivation, habits, and previous experiences with e-shopping and electronic payment, hence improving dependability and making the study more significant. Another issue is that the study participants emphasized specific factors (for example, unmarried, women, generation Y, graduates, and postgraduates). Furthermore, it is advised to enhance the sample size. As a result, future research should cover these elements, as well as the previously neglected features.

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