The Impact of Digital Transformation on the Satisfaction of Tax Administration Users in Morocco during the Covid-19 Pandemic: An Empirical Study

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The Impact of Digital Transformation on the Satisfaction of Tax Administration Users in Morocco during the Covid-19 Pandemic: An Empirical Study

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Purpose: The objective of any change in public administrations is to improve their management system to provide a better service to the citizen user. This is how policy makers defend their political agendas. However, the effectiveness of the digital transformation of public services is not limited to the promulgation of laws but to their impact on the satisfaction of users of public administration and its perception by the public agent and the citizen. The objective of this article is to analyze the impact of digital transformation on the satisfaction of users of public administration, and more particularly of tax administration.

Design / Method / Approach: This is an empirical study with a quantitative approach using a questionnaire administered to 107 taxpayers. We analyzed data through the structural equation method with SmartPls software to study the relationship between five sub-variables of digital transformation and user satisfaction.

Originality / Value: The results show a significantly positive relationship between three sub-variables of digital transformation and user satisfaction: perceived ease of use, perceived usefulness, and website design.

Research Limitations / Future Research: In addition, public administrations need to stay abreast of current trends in service digitalization. The success of the digitization of the administration is conditioned by the commitment and involvement of all stakeholders. This is with the view to providing quality services in real-time, thus meeting users' expectations.

Paper type: Empirical

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Вплив цифрової трансформації на задоволеність користувачів податкової адміністрації в Марокко під час пандемії Covid-19: емпіричне дослідження

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Мета роботи: Метою будь-яких змін в державних адміністраціях є покращення їх системи управління для надання кращих послуг громадянам-користувачам. В такий спосіб політики захищають свої політичні плани. Однак ефективність цифрової трансформації державних послуг не обмежується лише оприлюдненням законів, а характеризується також їх впливом на задоволеність користувачів державного управління та його сприйняття державним агентом і громадянином. Метою цієї статті є проаналізувати вплив цифрової трансформації на задоволеність користувачів державного управління, зокрема податкового адміністрування.

Підходи/Результати дослідження: Це емпіричне дослідження з кількісним підходом із використанням анкети, яку розповсюдили серед 107 платників податків. Ми проаналізували дані за допомогою методу структурних рівнянь із програмним забезпеченням SmartPls, щоб вивчити зв'язок між п'ятьма підзмінними цифрової трансформації та задоволеністю користувачів.

Оригінальність/цінність дослідження: Результати показують значний позитивний зв'язок між трьома підзмінними цифрової трансформації та задоволеністю користувачів: відчутною простотою використання, сприйнятою корисністю та дизайном веб-сайту.

Обмеження дослідження/Перспективи подальших досліджень: Крім того, державні адміністрації повинні бути в курсі сучасних тенденцій цифровізації послуг. Успіх оцифрування управління зумовлений відданістю та залученням усіх зацікавлених сторін. Це з метою надання якісних послуг у режимі реального часу, відповідає очікуванням користувачів.

Тип статті: Емпіричний

Ключові слова: цифрова трансформація, задоволення, державне управління, Марокко.

1. Introduction

Since the 1990s, socioeconomic and religious contexts have experienced profound changes and a revolution at all levels. Moreover, from that time on, the almost generalized opening of borders to the movements of capital and people, and the policies of disintermediation, deregulation and decompartmentalization have provoked true globalization of markets worldwide (*Fontaine, 2009*). This openness has had a direct impact on technology, particularly in computer and telecommunication sectors.

In the face of this globalization, leadership styles, decision-making processes, organizational modes, service delivery, and citizenship concepts must change and improve as regards the way to meet the expectations of an e-government phenomenon (*Gil-Garcia, Dawes, & and Pardo., 2018*).

It is in this context that the Moroccan administration has been involved in major projects for the last two decades enabling the dematerialization of government flows and services, in particular the Moroccan Digital 2020 plan, National Plan for Administrative Reform (2018-2021), Digital Development Agency (DDA) created in 2017.

Moreover, the tax administration is an important lever for all economies, including the Moroccan economy, through its role in issuing and collecting taxes, which forces our country to adapt to these new trends, makes the country more attractive and improves the business climate.

Hence, the NICT (New Information and Communication Technologies) through e-services makes it possible to facilitate administrative procedures, accompany Very Small Medium Enterprises, and improve the business climate to attract more investors.

In this context, the Directorate General of Taxes was among the first administrations that adopted a dematerialized administrative process in order to make the Moroccan tax system more effective, efficient and transparent. Digital technology is the backbone of the New Economy and officially intends to participate in improving the relationship between the administration and a taxpayer (*Adam, Ferrand, & Rioux, 2010, 627; Koubi, 2012, 31*).

In the light of this article, we collected papers related to e-government and digital transformation from several databases (Scopus, Cairn, Google Scholar, Sciencedirect), as well as we have limited the search on the basis of articles published for the last 5 years. This allowed us to observe that the theme of digitalization of administration arouses the interest of several researchers, especially for the last two years, and this is after the health crisis triggered by Covid-19 (*Ibrahim, & Benabdelhadi, 2021*).

Moreover, following the spread of Covid-19 internationally, and in order to avoid direct contact between people, we have witnessed the dematerialization of several services, including services rendered by the Directorate General of Taxes, without the need for taxpayers to travel to file a claim, regularize their tax situation and obtain certificates.

It is in this context that we have been able to discover the importance of the NICT to bring closer the links between the tax administration and citizens, and to contribute to the reduction of the processing time of users' requests.

It follows that we will first discuss the history and evolution of the tax administration in Morocco accompanied by the introduction of e-services (remote declaration and remote payment), then we will define the concept of e-services and similar concepts from the literature review to finally know the degree of user satisfaction from a questionnaire, which will allow us to know how the Moroccan tax administration is conceived by users.

2. Conceptual Background

2.1. Digital Transformation of Public Administration in Morocco

Digital transformation in private and public sectors offers companies and public administration the agility and flexibility they need to optimize their production and respond effectively to the demands of customers who, in turn, have become informed and connected. It also enables them to adapt quickly to market fluctuations and preserve and/or acquire their competitive position (*Hachimi, Lhassan, & Belamhitou, 2021*). It is in this context that we can see that companies have migrated towards digitalization in recent decades. They have taken a more technological approach to exploit digital tools in day-to-day tasks, both at the individual and organizational levels, and to obtain more accessible and transparent data, faster processes and higher productivity. For *Vial (2019)*, digital transformation refers to a process that aims to improve an entity by triggering significant changes in its properties through combinations of information technologies, computers, communication and connectivity.

In our paper, we chose to study digital transformation in public administration and more particularly in tax administration. Tax administration plays an important role and is a lever for all economies. Indeed, taxation remains one of the main channels of mobilization of resources for the benefit of the State and its dismemberments, essential resources for the coverage of public charges and the launch of development projects. Moreover, through the role played by tax authorities, namely the issue and collection of taxes, it becomes essential to seek the right balance and determine the conditions necessary for the establishment of cost-effective taxation for all stakeholders: partners, natural and legal persons.

2.2. Users' Satisfaction

According to *Philippe Warin (1999)*, "the satisfaction of users of public services and administrations becomes a prime indicator of public performance". Today, the user is one of the main concerns of all governments in order to assess their level of satisfaction and understand their needs. Over the past 30 years, surveys and "barometers" have been established to capture citizens' satisfaction. The best-known examples are the European Euro-barometer, the Common Measurement Tool in Canada, and the International City/County Management Association (ICMA) in the United States. This was accompanied by the introduction of public service charters to ensure a high level of service quality, particularly in the United Kingdom (1991) or France (1992, 2019), and public service mediators whose objective is also to ensure a high level of quality for citizens.

The use of a satisfaction survey is a practical way of assessing citizens' perceptions of the quality of public services, and of emphasizing user satisfaction, rather than other performance indicators, such as cost or price. In addition to the debate on the quality of the methodology for capturing citizens' perceptions, it seems that questions on citizens' perceptions are quite effective in understanding how citizens assess public services.

3. Literature Review and Hypothesis Development

Based on the literature on information technology and digital transformation, the research undertaken in this direction has revealed several sub-variables that can measure the explanatory variable of our study. From this multitude of measurement indicators, we were able to choose five sub-variables that could meet our research objective while remaining consistent with our study context, namely the Moroccan tax administration.

3.1. Perceived Ease of Use and User Satisfaction of Tax Administration

Perceived ease of use can be defined as the extent to which the use of a specific system is easy (*Dong et al., 2017*), as defined by *Davis (1989)*, who introduced the TAM (Technology Acceptance Model), as being "the intensity with which an individual believes that the use of a particular system will be without difficulty or extra effort" is the sense of convenience and ease that users feel when using a specific technology (*Stocchi Michaelidou, & Micevski., 2019*), or more simply perceived ease of use represents the degree of ease associated with using a system (*Viswanath et al., 2003*).

Perceived ease of use (PEOU) is considered a key indicator for the assessment and analysis of user acceptance of a particular technology or system, PEOU can be an important motivator for users to use technology (*Amin, Rezaei, & Abolghasemi, 2014*). Our first hypothesis is to study the effect of perceived ease of use on the user satisfaction of tax administration.

Some authors have studied the nature of the impact of perceived ease of use as a variable of digital transformation in other study contexts, including *Amin et al. (2014)* whose research results show that there is a positive relationship between PEOU and mobile user satisfaction. In the same context, *Zaitul, Ramadhani, and Ilona (2018)* also showed the same results, showing a positive effect between perceived ease of use and student-user satisfaction. According to *Morosan (2012)*, users can adopt their behavior to the new technology if they perceive it as easy.

Similarly, the research by *Sibona and Choi (2021)* showed that Facebook users perceive the site as easy to use; hence, PEOU is considered a statistically significant predictor of satisfaction. In another scientific work similar to ours, *Tahar et al. (2020)* reported that PEOU has a positive effect on user satisfaction in terms of the degree of use of e-filling in the Directorate-General of Taxation of Indonesia.

3.2. Perceived Usefulness and User Satisfaction of Tax Administration

Perceived usefulness is another indicator which is also based on the TAM model and represents the degree of acceptance of digital transformation by users. This indicator is related to the efficiency and productivity of a new technology or system and its benefits in improving user performance (*Davis, 1989*). In other words, the more useful a system is, the greater the desire of users to use it is (Brandon-*Jones & Kappi, 2018*). Thus, perceived utility can be defined as users' judgment that the technologies they adopt will improve the quality of their work (*Keni, 2020*). Our second hypothesis revolves around the effect that perceived usefulness may have on user satisfaction.

Some researchers dedicated their work to investigating the nature of the effect that perceived usefulness may have on user satisfaction in other research areas, including *Sibona and Choi (2021)*. They consider perceived usefulness as a statistically significant indicator of satisfaction. They even infer that the perceived usefulness of a site has a greater impact on satisfaction than perceived ease of use. *Keni (2020)* shared the same view affirming the significant and important role that perceived utility plays in a consumer's attitude and consequently in his satisfaction and confidence by identifying trust as a mediating factor in relation to satisfaction.

Similarly, the work by *Amin et al. (2014)* shows that there is a positive relationship between perceived usefulness and mobile-user satisfaction. However, the research by *Zaitul et al. (2018)*, which focused on students from four faculties to investigate the determinant of satisfaction when using websites, refuted this hypothesis by showing the absence of a significant relationship between perceived usefulness and user satisfaction.

3.3. Perceived Confidence and User Satisfaction of Tax Administration

Confidence is a significant factor in the acceptability of online services and digital transformation (*Zhou, 2011a*). Confidence in e-services means that users believe in the honesty, credibility and goodwill of the websites and e-services they visit (*Reza et al., 2020*). Confidence presents the level of users' belief and their expectations that the organization will not betray or disappoint as previously agreed. Based on the literature, trust and user satisfaction are strongly linked to the extent that trust is seen as an important factor influencing users' behavior towards a technology or system in particular online transactions (*Zarmpou et al., 2012*).

Wetsch (2006) suggested that confidence has a significant impact on user satisfaction. Other authors have thus made the same observation, say, *Amin et al. (2014)*, whose study focused on mobile users, concluding that confidence positively influences mobile user satisfaction. The study by *Colesca and Dobrica (2008)* provides empirical evidence that perceived confidence is a statistically significant factor influencing users' decisions to adopt and use e-government.

3.4. Perceived Quality and User Satisfaction of Tax Administration

Based on the literature review, we can define perceived quality as "the consumer's judgment of the degree of excellence or superiority attributed to an entity" (*Zeithaml, Parasuraman, & Malhotra, 2000*). Perceived quality is the result of a comparison between customers' expectations and actual service experiences (*Grönroos, 1984*). In other words, the difference between users' expectations regarding the performance of the service and their perceptions of the service received is the set of attributes contributing to the quality of an online service whose level is previously set by the company regardless of the perception that the user may have.

Several studies have focused on electronic service quality and user satisfaction: *Liu and Arnelt (2000)*, *Novak, Hoffman, & Yung, (2000)*, *Szymanski and Hise (2000)*, *Yoo and Denthu (2001)*, *Sririvasan, Anderson, & Ponnavolu (2002)*, *Wolfinbarger and Gilly (2003)*.

In many publications by researchers from different disciplines, perceived quality of service is seen as a significant predictor of customer satisfaction, high quality of service leads to higher perceived quality, which in turn leads to better user satisfaction (*Parasuraman, Zeithaml, & Berry, 1985; Zefreh, Hussain, & Sipos, 2020*). In the railway industry, for instance, the study conducted by *Geetika (2010)* in India found that perceived quality is an essential determinant of user satisfaction. In the same context, *Mouwen (2015)* studied 16 service attributes to determine the factors that contribute to rail users' satisfaction, the results of this study reveal the most important attributes affecting user satisfaction, including speed of travel, punctuality and quality of service.

3.5. Website Designand User Satisfaction of Tax Administration

The last variable we considered representative of digital transformation was the design of a website. The website is a set of web pages and resources linked by hyperlinks and intended to provide a user with the information and data he is looking for, comprising functional characteristics relating to the functionalities of the website such as an aesthetic design, the organization and professionalism of an interface design to be understandable and easy to use (*Legault, 2011*). Thus, to satisfy users, "a website must be designed for a targeted customer segment… Local adaptation must be based on a comprehensive understanding of the culture of a client group" (*Gommans, Krishman, & Scheffold, 2001*).

The relationship between the design features of a website: customization, structure, navigation, layout, search and performance, and user satisfaction has been studied among 798 online banking users in Iran. The study shows a significant relationship between the two variables (*Dianat et al., 2019*). Another study conducted by *Chakib (2019)* also showed that the website design, a dimension that the author proposed as an indicator to measure perceived quality, has a positive impact on user satisfaction.
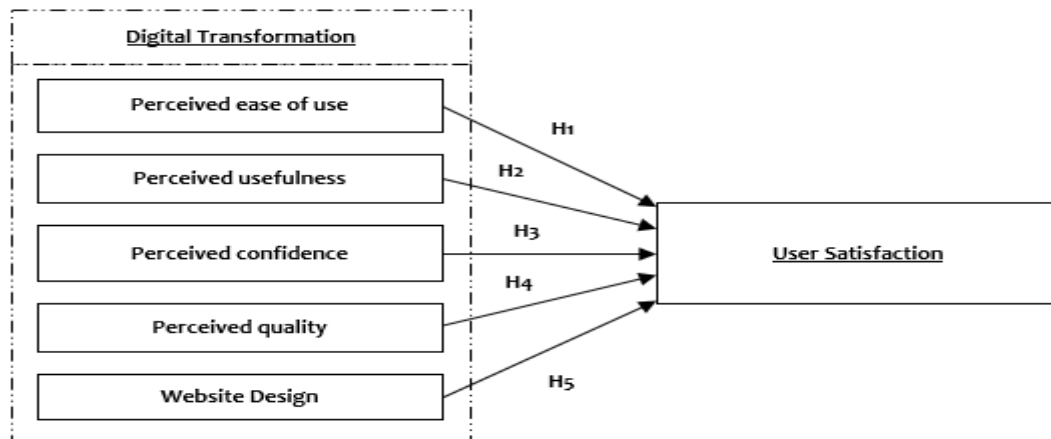
On the other hand, *Wilson, Keni, and Tan, (2019)* studied the relationship between a website design and user satisfaction. The results of their study showed that a website design has a positive effect on user satisfaction.

4. Research Model and Hypotheses

T he research framework was constructed to determine the effect of e-services on the satisfaction of tax administration users with reference to previous research. Thus, the model proposed in this study is presented in *Fig. 1*.

Figure 1. Conceptual Research Model

Source: developed by the authors

Based on the literature review presented before, our research hypotheses can be formulated as follows:

H1: *Perceived ease of use has a positive effect on user satisfaction.*

H2: *Perceived utility has a positive effect on user satisfaction.*

H3: *Perceived confidence has a positive effect on user satisfaction.*

H4: *Perceived quality has a positive effect on user satisfaction.*

H5: *The design of a website has a positive effect on user satisfaction.*

5. Research Methodology Adopted

T o conduct our research, we followed the steps of Churchill's paradigm (*Churchill, 1979*).

5.1. Sample and Questionnaire Administration

T he target population of this study was users of the e-services of the tax administration in Morocco, who are taxpayers (companies, professionals, individuals, occasional users and partners). A purposive sampling technique was used to distribute the questionnaires to respondents.

The questionnaire was tested on a sample of 30 respondents (managers and business owners in Morocco) to ensure that they fully understood the questions and were not likely to refuse to answer.

The final version of the questionnaire measured all items (29 items) on a five-point Likert scale, according to the authors *Zhou (2011b), Wang and Liao (2007) and Revels, Tojib, and Tsarenko (2010)*.

In our research, we measured the five variables (21 items) through a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). In addition, we measured the variable User Satisfaction (8 items) with a 5-point scale, ranging from "very dissatisfied" (1) to "very satisfied" (5).

The questionnaire was administered to 375 target respondents. 114 were returned completed at an initial response rate of 30.40%. Of these 114 responses, seven (7) responses were unusable due to

missing data, so the actual response rate is 28.53%. Eventually, the data by 107 taxpayers in Morocco could be processed.

5.2. Operationalization of Variables: the Measurement Instrument

T he literature review allows us to develop scales for all the variables to be explained. For each item, respondents were given the opportunity to express their opinions on a five-point Likert scale (*Tab. 1*).

5.3. Structure of the Sample

O ur sample is composed of taxpayers (*Tab. 2*) who break down as follows: 49% companies (large companies and VSEs/SMEs), 19% professionals (flat rate and RNR/RNS), 18% individuals (civil servants and employees and other declared income).

As shown in *Tab. 3*, 46% of the taxpayers surveyed go to the tax authority located in Tangier, 19% in Rabat, 17% in Fez and the rest are spread over other cities in Morocco, such as Kenitra, Marrakech and Agadir.

The results in *Tab. 4* show that 94% of the respondents are Moroccan residents and 6% are Moroccan residents living abroad.

6. Results

I n our statistical analysis of this study, we used the structural equation method via SMARTPLS software to perform two evaluations; one is the evaluation of a measurement model, convergence validity and discriminant validity. This is an evaluation of a structural model; we used it to test the correlation between the variables and test our hypotheses.

The results given in *Tab. 5* show that Cronbach's alpha has an alpha value that is greater than 0.7, a Rho_A value is greater than 0.7, a composite reliability value is greater than 0.7 and an AVE value is greater than 0.5, which indicate the validity of convergence and are consistent with the scientific standards of management science.

Table 1: Research measurement tool

The variables	The sub-variables	Number of items	The authors
Digital transformation	Perceived ease of use	4	*Tahar et al (2020); Zaitul et al. (2018); Amin, et al., (2014); Morosan (2012); Sibona, & Choi (2021).*
	Perceived usefulness	5	*Keni (2020); Amin et al. (2014); Sibona, & Choi (2021).*
	Perceived confidence	4	*Amin et al. (2014); Colesca, & Dobrica (2008); Wetsch (2006).*
	Perceived quality	4	*Zefreh et al (2020), Mouwen (2015), Geetika (2010), Parasuraman, et al. (1985).*
	Website design	4	*Dianat et al, (2019), Chakib (2019).*
User satisfaction		8	The indicators for the sub-variable: user satisfaction is derived from the survey conducted in 2013 by the Directorate General of Taxes (Morocco) among its users to assess their perceptions and expectations regarding it, and thus to identify the levers for improving the quality of its services. The eight indicators are selected from the twelve indicators according to the context of the digital transformation adopted by the Directorate General of Taxes (Morocco).

Source: completed by the authors

Table 2: Classification of Respondents by Taxpayer Category

	Taxpayer Category	Number of respondents	Percentage of respondents
Companies	Large companies	21	20%
	VSE/SME	31	29%
Professionals	Flat rate	11	10%
	RNR/RNS	10	9%
Individuals	Civil servants and employees	16	15%
	Other declared income (property tax, etc.).	3	3%
Occasional users	Other users who do not have a tax file (occasional operations, stock exchange, etc.).	4	4%
Partners	Chartered accountant	4	4%
	Certified accountant	7	7%
TOTAL		**107**	**100%**

Source: completed by the authors

Table 3: The tax administration cities that respondents frequently visit

Cities	Number of respondents	Percentage of respondents
Tangier	49	46%
Kenitra	3	3%
Fez	18	17%
Rabat	20	19%
Casablanca	11	10%
Marrakech	5	5%
Agadir	1	1%
TOTAL	**107**	**100%**

Source: completed by the authors

Table 4 Classification of respondents by residence

Respondent's residence	Number of respondents	Percentage of respondents
Resident in Morocco	101	94%
Moroccan resident abroad	6	6%
TOTAL	**107**	**100%**

Source: completed by the authors

6.1. Discriminant Validity Test

The Fornell-Larcker criterion is the method of assessing discriminant validity. Discriminant validity can be verified when the square root of the AVE of particular constructs is greater than the correlation coefficient between those constructs and others (*Fornell & Larcker, 1981*). It compares the square root of the AVE value with the correlation of a latent variable.

As shown in *Tab. 6*, the results confirm that the square root of the AVE is greater than the corresponding correlation coefficient, indicating that discriminant validity is established according to the Fornell–Larcker criterion.

Table 5: Validity of the measurement model

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Perceived ease of use	.745	.747	.887	.797
Perceived usefulness	.728	.749	.845	.645
Perceived confidence	.785	.874	.870	.691
Perceived quality	.858	.870	.904	.702
Web site design	.873	.892	.913	.724
User satisfaction	.875	.893	.908	.665

Source: completed by the authors

Table 6: Discriminant reliability (*Fornell & Larcker, 1981*)

	Website design	Perceived confidence	Perceived ease of use	Perceived quality	User satisfaction	Perceived usefulness
Website design	.851					
Perceived confidence	.508	.831				
Perceived ease of use	.279	.418	.893			
Perceived quality	.528	.667	.250	.838		
User satisfaction	.455	.419	.331	.414	.816	
Perceived usefulness	.521	.670	.454	.632	.504	.803

Source: completed by the authors according to *Fornell & Larcker (1981)*

6.2. Tests of the Structural Model

Δfter confirming that the construction measurements are reliable and accurate, the next step is to evaluate the performance of the structural model. This means exploring the model's prediction, possibilities and relationships between the constructs and hypothesis testing. At this level, we test the goodness of fit of our model, the quality of the regression by the R², and the validity of our research hypotheses.

We will start with the quality of the regression and the test of the hypotheses to deduce the R² and the AVE allowing us to test the quality of fit.

6.2.1. Testing the Quality of the Regression

The coefficient of determination R² allows us to measure the fit of the model to the observed data or that the point regression equation is appropriate to describe the distribution of the points. Tab. 7 presents R² values.

Table 7: R² values

	R²	R Square Adjusted
User satisfaction	.320	.283

Source: completed by the authors

Chin Peterson, and Brown, (2008) suggested that R-squared values of 0.67, 0.33, and 0.19 in PLS-SEM could be considered substantial, moderate, and low, respectively. Besides, he recommended that

R2 values greater than .670 were considered high, while the values between .330 and .670 were moderate, while the values between .19 and .330 were low, and R2 values less than .190 were unacceptable in PLS-SEM. In addition, *Falk and Miller (1992)* proposed an R-squared value of .10 as a minimum acceptable level.

R2 of our model is equal to .320, which shows that our model is low but acceptable as recommended by the authors previously.

6.2.2. The Quality of the Fit

The objective of the GoF is to report on the study model at two levels, first, the measurement model and, second, the structural model with an emphasis on the relevance of the model.

The goodness of fit is estimated by the Goodness of Fit (GoF) index, it is calculated as $GoF = \sqrt{(R^2 \ X \ AVE)}$

After calculating the *GoF*, we found that it is up to .475. According to the authors' recommendations (*Wetzels, Odekerken-Schröder, & Van Oppen, 2009*), the value of the *GoF* (above .360) of our model is good to allow us to consider a good quality of fit of our PLS model.

6.3. Hypothesis Testing and Results

Tab. 8 presents the validity of the hypotheses of our research. According to the analyses and in order for the hypotheses to be confirmed, the t-value must be greater than or equal to 1.986, and the p-value must be less than or equal to .050.

Table 8 Validity of hypotheses

	Initial sample (O)	Sample average (M)	Standard deviation (STDEV)	T-value (| O/STDEV |)	P-value	Results
WD -> US	.247	.255	.106	2.335	.010	Confirmed
PC -> US	- .082	- .081	.105	.778	.218	Unconfirmed
PEU -> US	.166	.162	.098	1.982	.039	Confirmed
PQ -> US	.121	.118	.123	.987	.162	Unconfirmed
PU -> US	.286	.291	.123	2.324	.010	Confirmed

Note: WD: website design; PC: perceived confidence; PEU: perceived ease of use; PQ: perceived quality; PU: perceived usefulness; US: user satisfaction

Source: completed by the authors

7. Discussion

From the results of the research, we distinguished that website design (WD) is positively related to user satisfaction (US) (T = 2.335, p = .01). Similarly, there is a direct relationship between perceived ease of use (PEOU) and user satisfaction (US) (T = 1.982, p < .05). This validates the hypothesis H1 and hypothesis H3. We found that our results are similar to the results of the authors' previous empirical studies (*Gommans et al., 2001; Venkatesh et al., 2003; Legault, 2011; Amin et al., 2014; Dong et al., 2017; Stocchi et al., 2019*).

Note that there is an indirect impact of perceived confidence (PC) and perceived quality (PQ) on user satisfaction (US) (T = .778, p > .05), (T = .987, p > .05) which does not support the hypotheses *H2* and *H4*. These results are not similar to the results of previous empirical studies by the authors (*Wetsch, 2006; Amin et al., 2014; Colesca & Dobrica 2008; Zeithaml et al., 2000; Grönroos, 1984; Parasuraman et al., 1985; Zefreh et al., 2020*), so we can say that, firstly, there is a difference between the Moroccan context and others in terms of trust in internet payment transactions, confidential data, etc. Secondly, for the variable of perceived quality, respondents can find difficulties such as technical problems of e-services during the Covid pandemic 19, where this problem can negatively impact user satisfaction.

The results also show a positive direct impact of perceived usefulness (PU) on user satisfaction (US) (T = 2.324, p = .01), which confirms the hypothesis *H5*. We note that our results are consistent with the results of previous empirical studies by the authors (*Amin et al., 2014; Zaitul et al., 2018; Keni, 2020; Sibona & Choi, 2021*).

8. Conclusion

From the above, we have been able to discover in this article that all the definitions proposed by the various authors go in the same direction, highlighting the importance of digital transformation as a lever for the performance of public administration in general and tax administration in particular. The success of the digitalization of administration is conditioned by the commitment and involvement of all stakeholders, in order to provide quality services in real-time that allows meeting users' expectations.

In this regard, following the research undertaken, it was found that several sub-variables could have an impact on user satisfaction. However, we selected five sub-variables that are likely to address our research focus:

- Perceived ease of use;
- Perceived usefulness;
- Website design;
- Perceived confidence;
- Perceived quality.

Based on the results obtained, following the elaboration of a rich and diversified questionnaire, we note that the first three hypotheses have a positive influence on users' satisfaction. Still, the two others have a negative impact on taxpayers' expectations.

In short, the results obtained constitute challenges that the Moroccan tax administration has highlighted to overcome in order to establish trust between users who frequent the tax administration and to provide a quality service in the shortest time possible. The improvement of these two points requires the will and commitment of both parties in order to satisfy users' expectations on the one hand, and to improve the efficiency of administrative procedures on the other.

Our future research will seek to integrate other digital transformation practices into our model, studying them in other public administrations.

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10. Competing interests

The authors declare that they have no competing interests.

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