BARRIERS TO E-COMMERCE ADOPTION IN MOROCCO SMES

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Abstract:

This study investigates the main barriers preventing Moroccan SMEs from using e-commerce and it also examines barriers within the technological, legislative, and monetary aspects. Although there were initial challenges like internet connectivity and digital infrastructure, the industry has experienced significant transformations. Nevertheless, persistent hurdles such as the lack of digital skills and cybersecurity issues still impede smooth integration. The comprehensive examination of obstacles and possible remedies is driven by the clear impact that e-commerce has on Morocco's economy. This approach enables a complete comprehension of the complexities associated with the adoption of e-commerce. The research highlights barriers and presents practical suggestions for addressing them. Using that specialization in advancements in technology, adjustments in legislation, academic programs, and economic support, the proposed measures attempt to establish a digital market that is both inclusive and prosperous. Despite the difficulties, there are possibilities in sectors that include agriculture, banking, and healthcare that could allow small and medium organizations (SMEs) to adopt e-commerce.

Keywords:

E-commerce, SMEs, Barriers

1. Introduction

The adoption of electronic commerce in Moroccan SMEs is a major business growth problem. This is one of the most crucial topics to prioritize. The current analysis examines the barriers blocking SMEs from embracing e-commerce platforms nationwide. Moroccan small and medium-sized companies (SMEs) adopted e-commerce from early 2000s curiosity to the late 2010s and early 2020s substantial change. Early issues with internet connectivity, digital infrastructure, and expertise slowed adoption. Each of these factors reduced adoption. E-commerce's potential has become clearer as internet availability has increased and the government has promoted ICT (Nachit, Jaafari, Fikri, & Belhcen, 2021). Even if there have been advances, there are still barriers to mainstream adoption. These hurdles include legislative, logistical, and individualized support issues. Despite advances in digital infrastructure and government support, Moroccan SMEs' e-commerce integration is still hampered by digital skills gaps and cybersecurity concerns. Despite digital infrastructure developments, this is true.
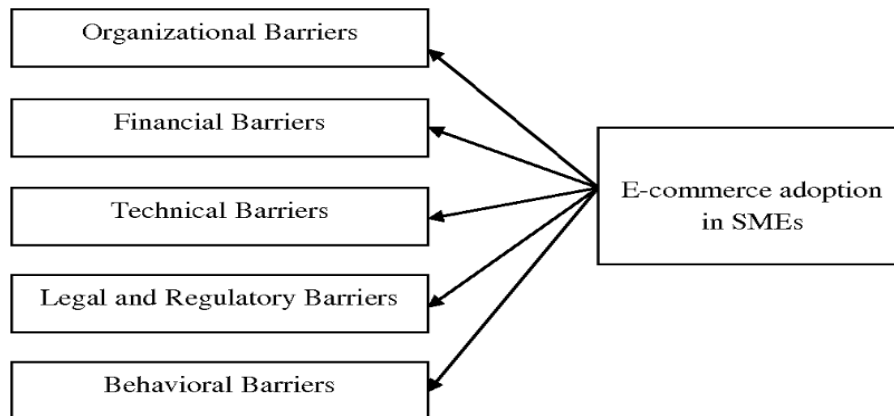
Figure 1 E-commerce Adoption in SMEs (Saif-ur-Rehman & Alam, 2016)

This research is crucial because it could transform Morocco's economy. This potential necessitates this investigation. Global electronic commerce offers unprecedented prospects for corporate growth, market expansion, and competitiveness. E-commerce platforms may help SMEs grow their clientele, cut costs, and innovate. This applies to SMEs especially. To maximize the promise of digital commerce, these companies must understand the barriers to e-commerce adoption. Because of these issues, e-commerce is not widely adopted. There are many research goals in this field. It will first identify and examine the many barriers blocking Moroccan SMEs from engaging with e-commerce platforms (Lukonga, 2020). These boundaries might also include technology restrictions, bad infrastructure, regulatory troubles, a lack of virtual literacy, and budgetary restraints. Second, the investigation will deliver insights and alternative techniques to mitigate those challenges. The record provides actual-world thoughts and suggestions to help Moroccan SMEs adapt to e-commerce. In a constantly converting digital landscape, this will help these agencies expand and survive.

2. Literature Review
2.1. Opportunities
Agricultural, banking, and health industries offer alternatives for Moroccan SMEs to implement e-commerce despite the constraints. E-commerce in agriculture could help farmers and agricultural SMEs reach more markets online, eliminating geographical barriers. E-commerce allows financial institutions to offer streamlined digital banking services, making it easier for firms to use financial instruments. E-commerce also helps Moroccan SMEs improve healthcare services. Telemedicine, remote consultations, and faster medical resource access could address healthcare accessibility disparities nationwide. Despite these prospects, Moroccan SMEs face many barriers to e-commerce adoption in these industries.

2.2. Agriculture
Using research on Moroccan agricultural cooperatives allows for the deployment of cooperative-specific solutions. Given that more than 1.6 million farmers are active and 120 cooperatives were examined, tackling digital literacy is a high responsibility. Educational programs targeting rural areas, where 70% of cooperative workforces are, can increase digital skills. Infrastructure improvements, such as fast internet and industry assistance, can also transform. E-commerce might be supported by investments in improved connectivity and appropriate regulation, which would support Morocco's agricultural strategic goals. Morocco could upgrade its connectivity (Jabbouri, Imad; Jabbouri, Rachid; Bahoum, Karim; Hajjaji, Yasmine El, 2023).
Financial assistance provides an opportunity for small enterprises to run smoothly. Cooperatives provide 40% of employment, therefore subsidies or low-interest loans might speed up the move to e-commerce. Digital solutions for local produce marketing and cooperation between cooperatives, government organizations, and private enterprises may boost information sharing. Moroccan agricultural cooperatives will be encouraged to use internet platforms to

boost their economies. Policy frameworks that encourage digitization and promote e-commerce's genuine benefits, such as sales, will achieve this (Jabbouri, Imad; Jabbouri, Rachid; Bahoum, Karim; Hajjaji, Yasmine El, 2023).

2.3. Mobile Banking

Moroccan SMEs can revolutionize their operations with the introduction of electronic commerce into the banking industry. By incorporating mobile banking, these enterprises may access a broad market. They can reach more customers because they can expand their influence beyond their specific geographic area. This increased reach increases sales and revenue by allowing the company to reach new customers. Because it lets the company reach more people. E-commerce in banking reduces operating costs for SMEs. This allows these organizations to improve their financial systems and avoid traditional physical installation costs. This has huge benefits for SMEs. Digital transactions and mobile banking allow small and medium-sized firms (SMEs) to allocate resources better, improving their efficiency and market competitiveness.
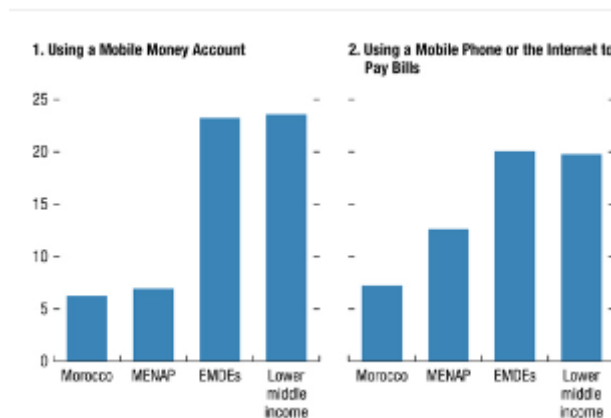

Figure 2 Mobile Banking (Ocampos, 2023)

E-commerce's tailored offerings encourage customer involvement, which can lead to stronger customer loyalty and retention. Customer loyalty is higher for tailored services. Financial tools like loans and digital payment systems help SMEs become more self-sufficient. SMEs without traditional banking access benefit the most. Financial inclusion and small and medium-sized firm growth are promoted by this (Pankomera & Greunen, 2019).

2.4. Health Sector

Introducing cutting-edge technology like blockchain into the healthcare sector makes e-commerce appealing to Moroccan SMEs. Blockchain technology's decentralization and security could transform healthcare interactions, especially in medical information and pharmaceutical management. This is especially true in blockchain-enabled industries. Moroccan health SMEs can use blockchain-based supply chain traceability solutions. This measure ensures drug authenticity and safety from manufacturing to distribution to patients. SMEs may create transparent, tamper-proof records using blockchain-powered e-commerce platforms. This has major benefits. This reduces counterfeit medications. Blockchain technology could also streamline medical billing, patient data management, and insurance claims, improving operational efficiency and data security (HANANE, BOUSAADANI, & RADID, 2022).

Blockchain-based e-commerce solutions in healthcare could improve patient-centric telemedicine services and platforms. This is another benefit of blockchain systems. Moroccan SMEs can construct blockchain-powered digital healthcare systems. This allows patients to securely access and update their medical records, book appointments, and request remote consultations. Technology allows for personalized healthcare experiences and improves medical services in underdeveloped or rural Moroccan communities. Blockchain-enabled e-commerce platforms may also help healthcare providers securely share data. This would improve interoperability and help practitioners make better-informed decisions with the information they have. The patient's privacy can be maintained throughout all of these treatments (HANANE, BOUSAADANI, & RADID, 2022).

2.5. Challenges

In Morocco, the e-commerce sector mainly for small and medium enterprises, affords an aggregate of possibilities and challenges. This complete analysis focuses on 3 key main challenges that impede the high implementation of e-commerce in Moroccan SMEs: Transportation, Regulatory barriers, and Political Uncertainty (Zhu & Luo, 2023).

2.5.1. Transportation Challenges

Transportation is most important in the growth of e-commerce because it directly impacts the good and efficient transfer of merchandise from companies to customers. Nonetheless, Morocco faces exclusive transportation challenges that have a direct impact on small and medium-sized organizations (SMEs) concerned with e-commerce operations. The geographical diversity of Morocco presents a notable challenge. With bustling cities and far-flung rural areas, the transportation infrastructure isn't always evenly developed. Small and medium-sized companies (SMEs) in less accessible regions face difficulties in creating reliable and economical transportation networks. This leads to extended delivery times, higher shipping expenses, and a potential loss of customer confidence and trust caused by delays. The last-mile shipping, a crucial aspect of e-commerce logistics, poses massive challenges (Wang, 2021).

Different areas are afflicted by inadequate courier offerings and logistical support, making boundaries for small and medium-sized enterprises (SMEs) to ensure easy and on-time delivery. This not only affects consumer fulfillment but additionally impedes the enlargement potential of e-commerce activities. To overcome transportation hurdles and challenges, it's far critical to make strategic investments in infrastructure development. The collaboration between the government and private sectors can significantly make contributions to improving road networks, organizing effective last-mile delivery systems, and imparting logistical assistance to small and medium-sized organizations (SMEs) (Kawa, 2020).

2.5.2. Regulatory barriers

Regulatory frameworks play a critical role in shaping the e-commerce enterprise, and Morocco isn't always an exception to this. The elaborate and ever-changing nature of policies offers significant challenges for small and medium-sized companies aiming to enter the digital market. The absence of clear e-commerce guidelines stands as a considerable challenge within the regulatory panorama. Unclear directives about licensing, taxation, and customer safety contribute to environmental uncertainty for small and medium enterprises (SMEs). Consequently, SMEs may encounter difficulties adjusting to evolving legal obligations, impeding their capacity to establish and expand their online presence (Abdelkhalek, Ajbilou, Benayad, Boccanfuso, & Savard, 2021). Cross-border e-commerce is tougher due to import obligations and customs techniques. The imposition of exorbitant costs and the presence of bureaucratic challenges can discourage small and medium-sized agencies from taking elements in international trade (Abdelkhalek, Ajbilou, Benayad, Boccanfuso, & Savard, 2021).

2.5.3. Political Instability

Political stability plays a crucial role in creating a favorable business environment, and the lack of it can present considerable challenges to the implementation of e-commerce in Moroccan small and medium-sized enterprises (SMEs). Instances of political issues, shifts in governmental strategies, and an unpredictable political landscape can generate an unstable atmosphere, impacting SMEs in diverse manners (Palladan & Adamu, 2019). During periods of political instability, small and medium-sized firms might be reluctant to spend money on e-commerce technologies and infrastructure. The far of viable disruptions to their operations, policy modifications, or economic downturns can foster a conservative approach in the direction of adopting digital systems. Such hesitancy could ultimately lead to missed chances for both growth and innovation (BENDRAOUI & AITSOUDANE, 2019).

3. Research Method

The present research on Moroccan SMEs' e-commerce adoption issues employs both primary and secondary methods. Primary data is original data accrued directly from the source for the primary time. It's miles of firsthand information that has not been previously collected or analyzed (Mustopa, L.Runtuwene, M.Kaparang, & Lusiana,

2020). Secondary data is records that have already been collected, processed, and posted by way of someone else for a reason apart from the contemporary studies venture (Malhotra, Nunan, & Birks, 2020).

Likert scale surveys generate primary data, complemented by secondary data from literature, books, and reports. The study utilizes quantitative data analysis methods in SPSS including descriptive statistics, reliability assessment, factor analysis, and regression analysis (Dewi, Herlina, & Boetar, 2022).

3.1. Methodology

To investigate the challenges that are present in the field of e-commerce in Morocco, a quantitative research method was employed. This allowed us to analyze the situation (Jabbouri, Imad; Jabbouri, Rachid; Bahoum, Karim; Hajjaji, Yasmine El, 2023).

A quantitative approach was used to quantitatively analyze Moroccan SMEs' e-commerce adoption challenges using SPSS. Quantitative analysis refers to the process of examining, assessing, and evaluating data through the utilization of numerical representations. To draw conclusions based on the information that has been obtained comprises the process of analyzing data through the application of mathematical and statistical techniques (Mohajan, 2020).

Descriptive statistics summarized the most important variables and ensured a complete understanding of their distribution. Cronbach's Alpha was used for reliability analysis to determine the measurement scale's internal consistency (Vaske, Beaman, & Sponarski, 2017).

Factor analysis found hidden patterns, making the data simpler. Reliability analysis showed the data is trustworthy, improving our understanding (François & Jay, 2020).Regression analysis was used to examine the relationship between barriers and e-commerce adoption. The ultimate goal of this investigation was to reveal these barriers' predictive power (NOORI, 2019).

3.2. Sampling

Random sampling selects individuals from a larger group for objective investigation. This ensures that studies represent the bulk of the population by giving everyone an equal opportunity to be chosen. Moroccan SMEs' e-commerce adoption challenges are examined using a comprehensive sample strategy (ORIBHABOR & ANYANWU, 2019).

A stratified random sample of 280 individuals ensures survey representation of many jobs and regions. Due to its method, survey results are reliable and accurate. The study identified Moroccan SMEs' e-commerce adoption difficulties using an inclusive sampling strategy, which uses multiple methods to establish a broad participant pool

3.3. Hypothesis

Hypothesis 1
Null Hypothesis (H0): There is no significant association between technological barriers and the adoption of e-commerce in Moroccan SMEs.
Alternative Hypothesis (H1): Technological barriers significantly impact the adoption of e-commerce in Moroccan SMEs.
Hypothesis 2
Null Hypothesis (H0): Economic constraints do not significantly affect the adoption of e-commerce among Moroccan SMEs.
Alternative Hypothesis (H1): Economic challenges have a significant impact on limiting the adoption of e-commerce in Moroccan SMEs.

3.4. Data Analysis

SPSS is used to analyze data for a study on Moroccan small and medium-sized firms' e-commerce barriers. Researchers study survey results to detect trends and correlations that explain e-commerce adoption issues in SMEs. This is done using descriptive statistics, reliability analysis, factor analysis, and regression analysis (Ha, 2020).

The study on Moroccan SMEs' e-commerce problems includes demographic data. It comprises participant characteristics including age, gender, and education level, as well as company-relevant information. With this knowledge, contextual insights have been gained (Wangari, 2019).

3.4.1. Descriptive Statistics

Descriptive statistics is a branch of statistics that entails the gathering, evaluation, interpretation, and presentation of statistics. The primary goal of descriptive data is to summarize and describe the primary capabilities of a dataset. It affords a way to simplify complicated data significantly and comprehensively (Tabuena & Hilario, 2021).

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
@1.Age	280	3	1	4	505	1.80	.062	1.041	1.083	.958	.146	-.455	.290
@2.Gender	280	1	1	2	365	1.30	.028	.461	.212	.859	.146	-1.271	.290
@3.AnnualTurnover	280	3	1	4	698	2.49	.064	1.064	1.133	.082	.146	-1.225	.290
Valid N (listwise)	280												

The dataset contains 280 observations in various formats. Age (Mean = 1.80, Standard Deviation = 1.041), Gender (Mean = 1.30, Standard Deviation = 0.212), and Annual Turnover (Mean = 2.49, Standard Deviation = 1.064) reveal central tendencies, variability, skewness, and kurtosis. These values also reveal standard deviation.

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Adoptions	280	3.50	1.50	5.00	1068.00	3.8143	.03876	.64852	.421	-1.011	.146	1.043	.290
Barriers	280	3.16	1.84	5.00	1092.74	3.9026	.03461	.57909	.335	-1.294	.146	1.982	.290
Valid N (listwise)	280												

The 280-entry Barriers and Adoptions dataset sheds light on Morocco's e-commerce challenges. Barriers have a positively skewed distribution (Skewness=-1.294) and a mean of 3.90 (SD = 0.58), indicating difficulties. Adoptions have a mean of 3.81 and a standard deviation of 0.65, indicating moderate population acceptance.

3.4.2. Reliability Analysis

The scale has high internal consistency, as its Cronbach's Alpha value is 0.891. The adoption scale analysis yielded this value. The Alpha value increases slightly to 0.890 when standardized items are considered (BELHOUSSINE, 2022). These findings demonstrate the reliability of adoption measurement.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.891	19

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BE	70.05	111.352	.460	.292	.887
BE_A	70.25	107.315	.583	.411	.883
BE_B	70.17	111.576	.434	.264	.887
BE_C	70.19	110.622	.482	.363	.886
BE_D	70.25	109.651	.529	.353	.885
BE_E	70.23	110.813	.439	.266	.887
BE_F	70.24	108.120	.588	.421	.883
BE_G	70.22	108.601	.558	.455	.884
BE_H	70.28	109.412	.501	.391	.885
BE_I	70.25	110.826	.435	.243	.888
BE_J	70.25	109.100	.509	.373	.885
BE_K	70.25	106.681	.602	.446	.882
BE_L	70.19	109.160	.544	.413	.884
BE_M	70.24	107.328	.594	.457	.882
BE_N	70.21	109.271	.556	.392	.884
BE_O	70.25	107.629	.589	.422	.883
BE_P	70.25	110.115	.498	.307	.886
BE_Q	70.58	111.657	.336	.169	.892
BE_R	70.36	107.729	.576	.428	.883

The barrier scale uses item-total statistics to show how individual items affect the results' reliability. The BE_Q item's squared multiple correlation is 0.169 which is below average, suggesting vulnerability. Despite this, Cronbach's Alpha remains high at 0.892, indicating high data internal consistency. If BE_Q concerns are addressed, the barrier scale may become more reliable.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
74.15	121.060	11.003	19

The average mean for barriers is 74.15, the variance is 121.060, and the standard deviation is 11.003 across all 19 items, according to scale statistics. Scale statistics provided this information. These values summarize the barrier scale's central tendency and variability, as well as its response distribution and overall characteristics.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.777	.776	8

Cronbach's Alpha was 0.777 for the adoption scale's reliability analysis. The value obtained indicates that the scale has high internal consistency. Alpha remains strong at 0.776 even when standardized items are considered. These findings indicate that the scale is a reliable and internally consistent measure of adoption in the context provided (Jabbouri, Jabbouri, Bahoum, & Hajjaji, 2023).

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ADS	26.55	21.897	.453	.250	.757
ADS_A	26.58	22.280	.432	.233	.760
ADS_B	26.60	21.897	.390	.195	.768
ADS_C	26.69	20.938	.511	.291	.747
ADS_D	26.66	21.600	.489	.257	.751
ADS_E	26.77	20.550	.515	.320	.746
ADS_F	26.88	19.373	.610	.446	.728
ADS_G	26.86	21.592	.427	.300	.761

Item-total statistics show how individual items affect adoption scale reliability. Due to its lower corrected item-total correlation (0.390) and squared multiple correlation (0.195), item ADS_B may have issues. Adoption evaluation's Cronbach's Alpha remains at 0.728, indicating good internal consistency. Despite this, this is true. ADS-B issues may need to be addressed to improve reliability.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.51	26.917	5.188	8

On the adoption scale, the mean is 30.51, the variance is 26.917, and the standard deviation is 5.188. This scale has eight items overall. These values show the central tendency, variability, and scale of adoption measurement.

3.4.3. Factor Analysis
Factor analysis seeks to reveal hidden patterns or components in observable data. It simplifies complex data by showing the key dimensions of observed interactions. This is done by grouping related variables. This strategy is

useful in research projects since it allows the exploration of underlying structures and reduces data coplexity (Zhao, Lin, & Zhang, 2022).

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.911
Bartlett's Test of Sphericity	Approx. Chi-Square	2783.165
	df	351
	Sig.	.000

A high Kaiser-Meyer-Olkin (KMO) value of 0.911 indicates adequate sampling for factor analysis of Moroccan e-commerce adoption barriers. This is shown by the high KMO value. To prove factorability, Bartlett's Test of Sphericity yields a significant result (Chi-Square = 2783.165, df = 351, p < 0.000) (Zbadi, 2023).

Component Transformation Matrix

Component	1	2	3	4	5	6
1	.539	.452	.380	.366	.344	.330
2	-.472	.337	-.533	.511	.013	.344
3	-.488	.179	.206	-.480	.656	.164
4	.095	-.790	-.102	.220	.378	.406
5	-.321	-.123	.363	.565	.246	-.608
6	-.369	-.104	.623	.080	-.498	.460

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The matrix of component transformations shows how the original components, which can be one to six, are linear combinations of the rotated components. The initial variables, with loadings of 0.539, 0.452, and so on, are the main factors affecting Component 1.

3.4.4. Regression: Analysis

Regression analysis can examine the relationship between a dependent variable and one or more independent variables. This can help you comprehend the variables' relationship. Identifying and quantifying these correlations makes it possible to predict or explain the dependent variable based on changes in the independent variables. This is done by helping identify and quantify correlations (Kawa, Arkadiusz; Światowiec-Szczepańska, Justyna, 2021).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.835[a]	.697	.695	.35788

a. Predictors: (Constant), Barriers

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.738	1	81.738	638.197	<.001[b]
	Residual	35.605	278	.128		
	Total	117.343	279			

a. Dependent Variable: Adoptions

b. Predictors: (Constant), Barriers

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.167	.146		1.141	.255	-.121	.454
	Barriers	.935	.037	.835	25.263	<.001	.862	1.008

a. Dependent Variable: Adoptions

Coefficient Correlations[a]

Model			Barriers
1	Correlations	Barriers	1.000
	Covariances	Barriers	.001

a. Dependent Variable: Adoptions

A regression analysis examines how obstacles affect e-commerce adoption in Morocco. As it explains 69.5% of adoption variance, the model has high statistical significance (F=638.197, p<0.001). A significant positive relationship between variables is shown by the barrier coefficient (0.935, p<0.001) (Penn State, 2023).

The R-square value of 0.697 indicates high predictive power. Excluding zero from the barrier coefficient's 95% confidence interval, 0.862 to 1.008, emphasizes its importance. It was found that barriers and adoptions have a 1.000 correlation. The analysis shows that obstacles hinder e-commerce adoption in Morocco, supporting the model's robustness. Overall, obstacles have a big impact.

The analysis of variance (ANOVA) shows that "Barriers" affect "Adoptions." This shows the regression model's importance. A perfect correlation of 1.000 implies a very beneficial link, but more research is needed to confirm the statistic with real-world data because the correlation is perfect.

Technological hurdles positively correlate with e-commerce adoption, according to regression research. The barrier coefficient of 0.935 (p < 0.001) suggests a strong positive correlation between the two. Since the p-value is below the significance level (0.05), we can reject the null hypothesis. According to this data, Moroccan SMEs' e-commerce adoption is linked to technological barriers.A regression study revealed a substantial correlation (p < 0.001) between

economic limitations and e-commerce implementation. We cannot accept the null hypothesis because the p-value is below our significance level. Since this is the case, economic challenges may hinder Moroccan small and medium-sized firms from implementing e-commerce.

3.5. Limitation of the Study

One problem of this research is that self-reported surveys may be biased. This bias reduces the study's conclusions' accuracy. Additionally, cross-sectional designs make causal linkages difficult to prove over time. The findings are not applicable broadly because they can only be applied to Moroccan SMEs. The study did not investigate the potential interaction effects amongst the identified barriers, therefore more research is needed to understand e-commerce adoption patterns. Because the study did not examine either aspect (Latzer & Festic, 2019).

4. Findings

The data revealed the study's findings on Moroccan SMEs' e-commerce execution are deemed satisfactory. Many participant characteristics are highlighted using descriptive statistics. These include a mean age of 1.80 (SD = 1.041), gender of 1.30 (SD = 0.212), and a yearly turnover of 2.49 (SD = 1.064). Cronbach's Alpha values of 0.891 for barriers and 0.777 for adoption scales from the reliability study suggest strong internal consistency. Factor analysis, supported by a KMO value of 0.911 and a significant Bartlett's Test (Chi-Square = 2783.165, df = 351, $p < 0.000$), reveals hidden patterns. The regression study shows a substantial positive connection (0.935, $p < 0.001$) between barriers and e-commerce adoption. The model also explains 69.5% of variation with an R-square score of 0.697. ANOVA proves the model's importance. These quantifiable numbers help quantify the challenges of e-commerce deployment in Moroccan SMEs, which is significant (Oukhayi, 2021).

5. Recommendations for Academicians and Businesses

The academic community should prioritize research to address Moroccan SMEs' e-commerce issues and prospects. Academic studies can become more practical by collaborating with industry practitioners who can provide real-world insights. Using quantitative methods will help grasp small and medium-sized organizations' complex difficulties. However, corporate leaders should prioritize digital literacy programs for their personnel to equip them to handle technical issues. Government and business partnerships can help expand infrastructure, especially in transportation, and streamline last-mile delivery. Firms must also advocate aggressively to influence regulatory regimes. This will make licensing, taxation, and consumer safety laws more visible. By embracing new solutions like mobile banking, agricultural cooperative models, and blockchain technology in healthcare, businesses can strategically capitalize on e-commerce's promise. Other solutions include blockchain. Adapting to the ever-changing digital landscape is essential for growth and competitiveness (Belhoussine & Amina, 2022).

6. Conclusion

The study concludes by examining Moroccan SMEs' e-commerce history. The shift from early interest in the 2000s to considerable transformation in the late 2010s and early 2020s showed digital commerce's transformative potential. Despite improvements in internet connectivity and government backing for ICT, many barriers have prevented widespread adoption. These include regulatory restrictions, logistics issues, and digital skills gaps.

Moroccan SMEs examined the possibilities and challenges of specific industries before adopting e-commerce. E-commerce can increase market share, streamline services, and solve agriculture, banking, and healthcare problems. These businesses have become attractive because e-commerce can handle their specific issues. We are considering mobile banking, agricultural cooperative solutions, and blockchain technology in healthcare as innovative opportunities.

The literature review found substantial issues. In Morocco, SMEs encountered a trifecta of hurdles that hindered e-commerce integration. Transportation, regulation, and political instability were these hurdles. Moroccan geography's transportation constraints hurt last-mile deliveries and consumer satisfaction. Imprecise licensing, taxation, and consumer safety regulations created uncertainty for SMEs. Political instability worsened the situation, encouraging a cautious approach to digital technology implementation during uncertain times.

E-commerce adoption is complicated, hence the study used a quantitative approach. This method used Likert scale questionnaires and SPSS statistical analyses. The study's robustness was shown by the measuring scales' strong

internal consistency, reliability analyses, and factor analysis, which revealed hidden patterns. The regression study shows a strong positive correlation between e-commerce implementation barriers. This link explained a significant percentage of the fluctuation, demonstrating the model's predictive potential.

However, the study's limitations—self-reported survey bias and numerical data emphasis—warn us not to trust the results. The study's numerical focus is a weakness. The cross-sectional methodology makes causal relationships unclear over time, requiring more research to understand e-commerce adoption patterns in a dynamic setting. This is because the design makes causal linkages over time impossible.

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