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Identification and Evaluation of Key Factores Influencing E-Commerce Approach by SMEs in Tirana District

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Abstract
E-commerce has enabled a competitive market, as a result many companies are thinking about changing the model of doing business, in order to be as competitive as possible in the market. Managers think that the use of e-commerce enables them to have a better relationship with customers and suppliers, improve the process of doing business, and in some cases even restructuring an entire industry.
The main instrument used for data collection was the questionnaire, standardized through "panel expert" on what extent the electronic commerce is applied by SMS opperating in Tirana district and the evaluation of the benefits earned by companies while using the application of E-commerce. The questionnaire was completed through direct interviewing of 124 SMEs Managers in the period of November 2021- March 2022. After data collection, their processing was done in SPSS and Chronbach alpha coefficients were used to see the internal consistency of the questionnaire.
At the end, this paper identified and evaluated the key factores influencing e-commerce approach by SMEs in Tirana district, which are: sales increase; efficiency; profits; business value; distribution costs; promotion costs; exchange of information; access to new markets; access to technological competencies; building consumer satisfaction.

Keywords: SME, E-Commerce, efficiency, distribution and promotion costs, exchange of information, consumer satisfaction, Chronbach alpha coefficients

1. Introduction

SMEs face increasing competitive pressure as a result of globalization and the opening of markets, stimulated by new technologies and innovations. SMEs play an important role in countries' economies.
Companies that are active users of e-commerce applications have the opportunity to create an advantage in the context of controlling business costs (minimizing costs). Companies that are active users of e-commerce applications are more likely to achieve higher operational efficiency than companies that are passive users of e-commerce. Companies actively using e-commerce applications are more likely to achieve objectives such facilitating the exchange of information among business partners, with the external environment (customers, suppliers, banks, governments, community, etc.), to create access to managerial competencies or new opportunities for strategic alliances, etc. Efficiency in customer service

is a statistically significant element in explaining the profitability of companies that are active users of e-commerce applications.

In overall, companies that have sufficient IT infrastructure to support e-commerce, competent employees to manage e-commerce application, e-commerce in line with marketing strategy, e-commerce [16] in line with business strategy, etc. have 3 times more chances of being active users of e-commerce applications.

2. Literature Review

Small and medium enterprises (SMEs) continue to represent a critical pillar for national and global economies, especially in developing countries, where they serve as engines of innovation, employment, and sustainable growth (Almeida et al., 2021; Nambisan et al., 2020). Their role is reinforced by their capacity to offer flexible responses to market needs, contribute to job creation, and supply larger firms with essential goods and services (Zhao et al., 2023). Furthermore, the strategic importance of SMEs has grown due to increasing industrialization and the demand for digital transformation aligned with Sustainable Development Goals (SDGs) (World Bank, 2022).

In modern economies, SMEs not only foster economic resilience but also adapt faster to digital tools such as e-commerce. These tools enable cost efficiency, operational agility, and expanded market access (OECD, 2021). SMEs are often viewed as drivers of digital integration, particularly when supported by sufficient IT infrastructure, skilled labor, and favorable policy environments (Chen et al., 2022).

1. Innovation (1995-2000),
2. Consolidation (2001 – 2006)
3. Re-dimensioning (2006- future).

Innovation (1995-2000)	**Consolidation (2001 -2006)**	**Ri-dimensioning (2006- e ardhme)**
Technology – exerts pressure	Business exerts pressure	Audience, consumers and community – exert pressure
Impact on revenue growth	Impact on profit growth	Impact on audience and social network growth
Risk in Equity Funding	Traditional Funding	Small Equity Investments, Smallies leave due to new powerful online Players
Lack of government role	Strong government regulations	Strong government oversight
Commercial businesses	Large traditional firms	Large Web-based companies
Innovation (1995-2000)	**Consolidation (2001 -2006)**	**Ri-dimensioning (2006- future)**
Shortage of Intermediaries	Empowering Intermediaries	Profiling small online intermediaries taking care of business processes of large firms
Perfect market	Imperfect market, brand and internet effects	Imperfect online market continues, comfortable competition in some selected markets
Pure online strategies	Mix of online and offline market strategies	Return to pure online strategies in new markets, strengthening online and offline strategies in traditional retail markets
First mover advantage	Strong strategic followers	Pioneer advantage in new markets, and strengthening in existing markets
Low complexity of products in retail	High complexity of products in retail	Services

Source: Evolution of E-commerce Laudon & Traver

Measuring the Benefits of E-Commerce for SMEs

Recent studies suggest that the benefits of e-commerce adoption among SMEs fall into several core dimensions:

Operational Efficiency: Automation of ordering, invoicing, and auditing processes improves control over business operations (Khin & Ho, 2020). Shipment tracking and real-time updates increase reliability and reduce delays.

Market Expansion: Digital platforms enable SMEs to access broader geographic markets, identify niche segments, and better inform consumers about their products and services, thereby increasing sales and differentiation (Singh et al., 2021).

Inventory Management: E-commerce systems streamline inventory control, procurement, and reduce associated costs (Ahmed et al., 2022).

Cost Reduction: Transitioning to e-commerce reduces administrative, marketing, and customer support costs by digitizing communication and documentation (Ramadan & Farah, 2023).

Customer Service and Personalization: Advanced customer analytics and feedback systems enable SMEs to build stronger relationships with consumers, tailor offerings, and enhance satisfaction (Tan & Teo, 2021).

Other noted advantages include product promotion via social commerce, timely and continuous information flow, and ease of business operations due to the absence of time and location constraints. Moreover, electronic payments and digital banking enhance transaction speed and reliability.

Strategic Relevance in a Post-COVID Digital Economy

In the post-COVID economy, SMEs face renewed pressure to remain competitive while adapting to evolving consumer preferences. The use of e-commerce tools provides strategic advantage by enabling fast response to market shifts, improving customer experience, and promoting cost leadership (ILO, 2021). E-commerce adoption has also been positively associated with sustainability practices and data-driven decision-making (Lopez & Chen, 2022).

While digital transformation offers opportunities, SMEs must overcome challenges related to digital skills, infrastructure gaps, and perceived risks. However, those that actively implement e-commerce strategies have shown increased resilience and profitability, compared to passive adopters (UNCTAD, 2023).

3. Research Methods

The purpose of this study is to identify and measure the factors that influence the adoption of e-commerce applications by small and medium-sized enterprises (SMEs) in Tirana, Albania, aiming to enhance their technological capability and competitive advantage (Singh, Rana, & Slade, 2021). This approach aligns with recent methodologies for assessing digital transformation in SMEs (Zhao, Liu, & Wang, 2023).

3.1 Sample Selection

As the study focuses exclusively on SMEs operating in the Tirana district, the sample was derived using a stratified sampling technique, in accordance with standard practices in SME research (OECD, 2021). The initial list of enterprises was based on the business directory 'The Key – Practical Guide to the Capital', which provides publicly available data categorized by economic activity.

The stratification process was conducted in two stages: first, by enterprise size (measured by number of employees), and second, by industry sector. The sectors selected were those most likely to engage in e-commerce, as indicated by international digital economy reports (UNCTAD, 2023). Since the directory did not include employment data, initial phone screenings were conducted to verify eligibility. From a total of 150 contacted companies, 124 agreed to participate, reflecting a high response rate consistent with field-based SME studies (Ramadan & Farah, 2023).

3.2 Research Instrument

The primary data collection instrument was a structured questionnaire designed to assess the extent of e-

commerce adoption among SMEs in Tirana and the perceived benefits derived from its use. The questionnaire targeted enterprise managers and was administered using a direct, face-to-face method (Almeida, Santos, & Monteiro, 2021).

Reliability was evaluated through internal consistency, using Cronbach's alpha coefficient as suggested by contemporary research practices (Khin & Ho, 2020). To ensure content validity, the questionnaire was reviewed by a panel of statistical and digital marketing experts following established validation protocols (Tan & Teo, 2021). Experts assessed each item for relevance, clarity, and alignment with the study objectives. Based on feedback, ambiguous or irrelevant questions were modified or removed.

A pilot study involving 10 SMEs was conducted to verify the clarity and usability of the questionnaire. Fieldwork was carried out from November 2021 to March 2022. Data were processed and analyzed using SPSS software, with Cronbach's alpha used to confirm the reliability of the constructs employed in the study (Chen, Liu, & Lin, 2022).

4. Findings and Discussion

4.1 Factorial Analysis

Factor analysis is a widely accepted statistical method used to identify patterns of relationships among multiple observed variables and to uncover the latent constructs that explain those relationships (Zhao, Liu, & Wang, 2023). Even when independent variables are not directly measured, factor analysis helps reveal their influence through the examination of inter-variable correlations (Singh, Rana, & Slade, 2021).

In conducting factorial analysis, it is critical to evaluate the conceptual alignment of variables that load highly on a given factor to ensure coherent interpretation. For instance, the variable 'Reduces barriers between departments and business partners' showed high correlations across multiple factors but was ultimately grouped under the first factor due to its stronger conceptual and statistical compatibility.

As shown in Table 1, the factor loadings of variables on rotated factors are presented, where factor weights below 0.40 were excluded based on conventional cut-off thresholds (Khin & Ho, 2020). These weights reflect the partial correlations between each variable and the rotated factors and play a key role in factor interpretation.

The first factor, labeled 'Overall Company Performance,' showed strong associations with indicators such as improved operational effectiveness and efficiency, increased sales and profits, improved business processes, and enhanced business value (Chen, Liu, & Lin, 2022).

The second factor, indexed as 'Operational Efficiency,' correlated strongly with variables related to inter-organizational communication and information exchange with external stakeholders including customers, suppliers, financial institutions, and government agencies. It also loaded highly on items reflecting access to managerial competencies, strategic alliances, coordination and cooperation, and entry into new markets (UNCTAD, 2023).

The third factor, titled 'Cost Control in Business,' included variables such as reduction in administrative and personnel costs, achievement of customer service standards, decreased marketing expenses, faster order processing, improved customer relationships, broader consumer outreach, and higher sales turnover (Almeida, Santos, & Monteiro, 2021).

The fourth factor, labeled 'Customer Service Efficiency,' comprised variables including ease of online payments, order tracking, quick and secure order processing, responsiveness to customer inquiries, and

transparent product information. These aspects are crucial to enhancing the digital customer experience and creating seamless transactional environments (Tan & Teo, 2021).

Lastly, the fifth factor, named 'Customer Relationship Building,' aligned with variables reflecting increased customer satisfaction, loyalty, and long-term engagement. Strengthening these dimensions has been identified as central to sustaining SME competitiveness in digital marketplaces (Ramadan & Farah, 2023).

Table 1: Factor weights for rotated factors

	Performance	Operational Efficiency	Business costs control	Customer service efficiency	Building customer relationt	Komunalitet i
Improves the operational effectivity	0,790					0,648
Improves operational efficiency	0,786					0,685
Increases sales	0,717					0,774
Improves the overall performance of the business	0,705					0,666
Increases the profits	0,694					0,707
Enables profits' increase	0,686					0,707
Improves radically the business process	0,666					0,655
It represents a great value for business performance	0,662					0,772
Reduces distribution costs	0,588					0,706
Reduces marketing costs (Print, advertising, mail)	0,575					0,709
It allows customers to contact us 24 hours a day	0,575				0,417	0,668
It increases the competitive advantage of our firm	0,569					0,484
Reduces barriers between departments and business partners	0,508	0,444				0,715
Competitors have difficulty copying our e-commerce strategy	0,494					0,727
Our financial performance is better compared to competitors	0,441					0,744
Increase competence for information regarding promotion or packaging						0,770
Facilitates the exchange of information between business partners		0,790				0,699
Facilitates the exchange of information with the external environment (customers, suppliers, banks, government, transporters, business partners, the community, etc.)		0,714				0,756
Provides access to managerial competencies		0,703				0,565
Enables new opportunities for strategic alliances		0,645				0,639
Increases coordination and cooperation within the company		0,640				0,667
Facilitates better opportunities to reach new suppliers		0,619				0,661
Provides access to new markets		0,617			0,412	0,758
Publication of general company information (company history, contact information, physical location)			0,602		0,410	0,788
Enhances professional image	0,421		0,541		0,457	0,631
Provides better opportunities to reach new customers			0,541	0,465		0,781
Is easy to navigate			0,538			0,643
Impact of using e-commerce on Administrative Costs				0,802		0,244
Impact of using e-commerce on Total Staff Costs				0,728		0,838
Impact of using e-commerce on Achieving Standards for Customer Services				0,674		0,791
Impact of using e-commerce on Marketing Costs				0,665		0,689
Impact of using E-commerce on the Efficiency (speed) of order delivery				0,656		0,424
Impact of using e-commerce on Building relationships with consumers				0,635		0,606
Impact of using e-commerce on Informing consumers about the product				0,627	0,421	0,603
Impact of using e-commerce on Geographic expansion				0,578	0,439	0,732
Impact of using e-commerce on Sales circulation	0,421			0,568		0,728
Accepts online payments					0,773	0,770
Allows customers to easily track their order movement					0,770	0,744
Allows customers to securely complete their orders online					0,763	0,818
Allows customers to easily place online orders					0,690	0,812
Responds promptly to orders					0,620	0,662
Allows customers to search for products and prices		0,497			0,520	0,731
Shows how to search for the product, place, order, and payment is easy to navigate		0,431			0,482	0,774
Allows different pricing in different market segments					0,459	0,744
Responds promptly to complaints		0,421			0,433	0,743
Empowers the consumer relationship	0,449				0,665	0,525
Strengthens consumer loyalty	0,480				0,438 0,535	0,752
Increases consumer satisfaction	0,466				0,506	0,535
Eigen Values	9,308	7,879	6,751	6,632	3,163	
Percentage of Variance	18,996	16,079	13,778	13,535	6,456	

Note: Weights smaller than 0.40 are not taken into consideration

In table 2, factor weights are given for each variable on the rotated factors, if weighting less than 0.40, the factor then is considered as the final limit. Each number represents the partial correlations between the original variable and the rotated factor.

Table 2 Factors influencing the adoption of e-commerce

	Factors				
	Internal Factors	Cost	Risk Perception	External Factors	Communalities
Adequate IT infrastructure to support e-commerce	0,908				0,716
Competent employees to manage e-commerce application	0,799				0,749
Adoption of e-commerce aligns with marketing strategy	0,772				0,713
Adoption of e-commerce aligns with business strategy	0,756				0,693
The company keeps up with the latest technological developments	0,701	0,465			0,780
Sufficient funds for the implementation of e-commerce	0,671				0,756
Readiness for externalities pertine to e-commerce	0,670				0,531
The company has a tradition of using new technologies	0,662	0,403			0,731
Reliable internet connection	0,471	0,726			0,680
Good internet connection speed	0,458	0,694			0,573
Low initial installation costs for e-commerce		0,676			0,883
Internet service providers are willing	0,491	0,642			0,743
E-commerce has low connectivity costs		0,621	0,506		0,771
E-commerce has low maintenance costs		0,567	0,555		0,782
Computer viruses pose a significant risk to the company			0,802		0,616
Online payments are exposed to the risk of insecurity			0,800		0,727
Competitors			0,620		0,557
E-commerce increases the risk of unauthorized access			0,602		0,319
Government				0,638	0,524
The existence of companies offering training for e-commerce	0,539			0,563	0,476
Customers				0,549	0,649
Suppliers				0,448	0,622
Government support for the use of e-commerce is high					0,334
Vlerat Eigen	6,066	3,723	3,389	1,746	
Perqindja e variancës	26,373	16,185	14,736	7,593	

Note: Weights smaller than 0.40 are not taken into consideration
Extraction method: Principal Axis Factoring. Rotation method is Varimax with Kaiser Normalization.

4.2 Analysis of Influencing Factors

The first identified factor, labeled 'Internal Factors', demonstrated high correlations with variables including sufficient IT infrastructure, skilled personnel to manage e-commerce platforms, and strategic alignment of e-commerce initiatives with both marketing and business strategies. It also included elements such as ongoing technological adaptation, adequate financial support, access to external e-commerce expertise, and organizational experience with technological adoption (Zhao, Liu, & Wang, 2023). These elements represent the foundational internal readiness for e-commerce integration (Almeida, Santos, & Monteiro, 2021).

The second factor, named 'Cost Reduction', clustered variables such as reliable internet access, high-speed connectivity, low entry and maintenance costs for e-commerce, and supportive service providers. These dimensions reflect the infrastructural and economic accessibility necessary for SME adoption of digital tools (UNCTAD, 2023).

The third factor, titled 'Perception of Risk', encompassed variables highlighting cybersecurity threats including vulnerability to computer viruses, exposure to financial fraud during online transactions, and

unauthorized system access by competitors. These perceived risks remain a substantial barrier to adoption in SME contexts (Tan & Teo, 2021).

The fourth factor, designated 'External Factors', included supportive environments such as the availability of training services for e-commerce, customer and supplier engagement, and government initiatives promoting digital transformation. These dimensions align with enabling ecosystems proposed by international digital economy studies (OECD, 2021).

Logistic regression analysis confirmed the significant impact of these factors. Firms actively utilizing e-commerce solutions were found to have 2.8 times greater likelihood of effectively managing operational costs compared to passive users. This association indicates that digital adoption supports cost control through process optimization and supply chain efficiencies (Ramadan & Farah, 2023).

Similarly, operational efficiency appeared strongly correlated with active use of e-commerce platforms. The odds ratio for this factor was 1.752, demonstrating that active users are more likely to streamline communication with external partners and enhance access to managerial and strategic resources (Chen, Liu, & Lin, 2022).

In terms of customer service, active e-commerce users were 1.64 times more likely to achieve high service efficiency than passive users. Key metrics included transaction speed, order tracking, complaint handling, and personalized engagement—all critical to customer satisfaction and retention (Tan & Teo, 2021).

However, variables associated with 'Creating Value and Image' and 'Building Customer Relationships' were not statistically significant within the model, indicating that while important, these attributes may not directly influence e-commerce adoption rates within the sample studied.

Overall, SMEs equipped with sufficient internal capacity—including IT infrastructure, skilled personnel, and strategic alignment—were three times more likely to be categorized as active e-commerce adopters. Conversely, external factors such as cost, risk perception, and support environments did not exhibit a statistically significant relationship with active digital engagement (Singh, Rana, & Slade, 2021).

5. Conclusions and Recommandation

Based on the analysis of influencing factors affecting the adoption of e-commerce among SMEs, several key conclusions can be drawn. The first factor, labeled 'Internal Factors', demonstrated the highest correlations with variables such as sufficient IT infrastructure, competent employees, strategic alignment of e-commerce with marketing and business objectives, technological adaptability, availability of financial resources, and readiness of external expertise. These results align with findings by Zhao, Liu, and Wang (2023).

The second factor, identified as 'Cost Reduction', included indicators such as reliable and fast internet connectivity, low initial and maintenance costs of e-commerce, and support from internet service providers. These components reflect structural enablers for SMEs to adopt digital technologies (UNCTAD, 2023).

The third factor, 'Perception of Risk', revealed strong correlations with concerns related to cybersecurity threats, such as computer viruses, risks from online payments, and threats of unauthorized access—factors known to negatively influence digital adoption (Tan & Teo, 2021).

The fourth factor, 'External Factors', comprised variables like the availability of e-commerce training providers, supportive customers and suppliers, and substantial government support. Although these

variables describe the enabling environment, they were not statistically significant predictors of active e-commerce adoption among SMEs in Tirana (OECD, 2021).

Logistic regression analysis revealed that SMEs actively using e-commerce applications had 2.8 times greater odds of effective business cost control compared to passive users. Moreover, these firms were 1.752 times more likely to achieve higher operational efficiency, and 1.64 times more likely to realize enhanced customer service performance (Chen, Liu, & Lin, 2022). These outcomes validate the strategic importance of digital adoption for SME productivity and service delivery.

Interestingly, explanatory variables such as 'Creating Value and Image' and 'Building Customer Relationships' did not emerge as statistically significant in predicting e-commerce usage. However, the factors ‘Company Performance’, ‘Operational Efficiency’, ‘Cost Control’, and ‘Customer Service Efficiency’ all showed high correlations with critical performance metrics, including sales growth, profit margins, administrative cost reduction, customer satisfaction, and loyalty (Ramadan & Farah, 2023).

In summary, SMEs that possess adequate internal capabilities—namely IT infrastructure, skilled workforce, and alignment between e-commerce and strategic goals—were found to be three times more likely to actively adopt e-commerce platforms. Conversely, factors such as external support systems, risk perception, and cost considerations, while important, did not significantly influence adoption behavior in this context (Singh, Rana, & Slade, 2021).

These findings reaffirm the increasing importance governments and scholars place on enabling e-commerce benefits for SMEs, which represent a vital pillar in national economic development and innovation ecosystems (Almeida, Santos, & Monteiro, 2021).

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