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The impact of ICT on SME in Albania

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ABSTRACT : The globalization of the international economy and technological advancements in recent decades has led to a shift in labor expectations, moving from physical skills to knowledge-based work. Information has emerged as a crucial and highly valued resource, becoming a fundamental input for advancement and development. The linkage between power and information has elevated the importance of accurate, timely, and relevant information for small and medium-sized enterprises (SMEs). To effectively manage information, SMEs require robust information systems, which are technologies facilitating decision-making, enhancing interaction between users and computer technology, and providing managers with insights into corporate operations. This paper aims to underscore the impact of Information and Communication Technology (ICT) on the development of SMEs, specifically emphasizing its role in promoting competitiveness and enhancing business performance. The research employs statistical methods to compare the innovation, competitiveness, and performance of Albanian SMEs within the global business context. The findings reveal that Albania's Internet penetration and usage are comparable to those of wealthier nations. Notably, factors such as market performance, competition level, size, and business competency, as analyzed through a probit model, have positively influenced ICT diffusion. In addition to contributing insights into the effects of ICT on SMEs, this paper seeks to provide researchers, policymakers, and the public with a comprehensive understanding of computer and Internet usage. The investigation delves into usage rates, utilization methods, geographical patterns, and business characteristics associated with these technologies. Through these findings, the paper aims to offer a detailed and thorough picture of the landscape of computer and Internet use in the context of SMEs.

Keywords – ICT, SME, Albania

I.   INTRODUCTION

This study examines the spread of information and communication technology (ICT) among Albanian SMEs by drawing on complementary streams of literature. We will employ a dual empirical approach. Initially, we will create a composite indicator of the use of various ICT tools and services at the company level using Principal Component Analysis (PCA). Secondly, to determine the relationship between the composite indicator and the explanatory variables mentioned in the innovation diffusion literature, we will do probit regressions. The fact that our dependent variable, the composite indicator, which serves as a synthetic measure of innovation uptake, can only take positive values justifies the use of a truncated model. In terms of the enterprise data, the statistics and indicators generated came from the survey that was created specifically for this purpose, in which 50 enterprises were questioned. This source offers comprehensive data on the use of ICT in manufacturing and service industries by businesses. It is administered in compliance with EU regulations, or in Albania, using data from the statistical office to get representative data on the adoption of ICT in businesses.

Our empirical research validates the negative effect of sectoral concentration and the favorable impact of characteristics typical of the probit model, such as firms' size, capabilities, and market success, on ICT diffusion. Further-more, elements that systemic methods to innovation dispersion typically highlight also seem to have a big influence. The latter group of factors comprises: the availability of broadband networks to businesses, which serves as a stand-in for the development of telecom infrastructure; the range of e-Government services provided by local authorities, which serves as a stand-in for the role of the Public Administration in

experiencing and igniting innovative activities; and whether or not users are ICT equipment manufacturers, which serves as a gauge for the level of innovation and adoption of cutting-edge technologies and services by businesses.

II.   LITERATURE REVIEW

The acronym ICT - Information and Communication Technology - refers to technology - the discipline of gathering, storage, treating, and transferring data, where info, processing, and telecommunications are all convergent. "Any technology used to support the collection, processing, distribution, and use of information" (Beckinsale and Ram, 2011). ICT can also be defined as the collection of all technologies and products used to generate, produce, analyze procedure, allocate, communicate, or accept information electronically in digital form, such as computers, e-mail, the Internet, websites, social networks, and wireless communication devices, as well as various devices and related applications. (Brady et al 2002).

ICT growth is a regular occurrence in many places of the world. This is especially true for emerging markets, which have immense potential for poverty alleviation and employment creation. Growing a country's economy makes enterprises more accessible to local and global markets, while also enhancing market access to information, allowing for better and more competitive pricing, and cutting transaction costs (Rao 2004). The use of ICT in business has altered both internal organizational relationships and interactions between organizations and persons. The routine of ICT in business has boosted productivity, encouraged better consumer contact, and allowed for mass customization while cutting prices. ICT affects every aspect of our life and, ironically, is taking on a huge dimension, where information and communication technologies are becoming social change agents, propelling the virtual and real worlds in a more dynamic manner. Given the country's rapid evolution of ICT and government policies and objectives, the future of ICT in every sector and subject appears bright.

According to UNDP-APDIP 2003, the use of ICT among SMEs ranges from fundamental technologies such as hi-fi and fixed lines to additional modern technologies such as e-mail, electronic commerce (e-commerce), and e-commerce systems. The processing of information. E-business refers to the advanced use of ICT to improve company processes. However, not all SMEs must employ ICT to the same grade of complexity. Most SMEs' initial ICT tool is basic communication via a fixed line or cell phone, whatever is more cost-effective or handy for their firm. This enables SMEs to communicate with suppliers and customers without incurring the expense of a physical visit.

There are many different uses and interpretations of the term "e-business." The terms "ebusiness" and "e-commerce," while sometimes used interchangeably, are used by different groups of people. According to this study, e-business refers to enhancing an organization's overall competitiveness using modern information and communication technologies both inside the company and externally through connections with partners and clients. Damanpour and Gopalakrishnan (2001) describe e-business as "any 'net' business activity that transforms internal and external relationships to create value and exploit market opportunities driven by the new economic rules." Some consider e-business to be the next step in the evolution of e-commerce from the perspective of buying and selling on the Internet (Turban et al., 2006). In a broader sense, though, e-business is a means of conducting business electronically. Using the Internet and other digital technologies for governmental communication, harmonization, and company administration is known as ebusiness, agreeing by Laudon and Laudon -'s 2002. Furthermore, (Kalakota and Rob-inson 2001) offered a precise definition that distinguishes between e-commerce and e-business. "E-business does not refer only to e-commerce transactions or online buying and selling; it is the overall strategy of redefining old busi-ness models with the help of technology to maximize customer value and profits," they explain. This term is significant because it depicts e-business as a critical business aspect - reengineering that can help companies grow.

In terms of the nature of competition and competitive advantages, the development of electronic commerce has had a dramatic effect the industry as well as on business (Lei et al., 1999). Despite this, no universal definition of e-commerce has been agreed upon. Ecommerce is defined as "business conducted without the exchange of paper documents through the use of computers, telephones, fax machines, barcode readers, credit cards, 10 automatic teller machines (ATMs), or other electronic devices (whether or not using the Internet)." Procurement, transaction processing, payments, verification, inventory control, and customer service are all part of it. A customer is participating in online commerce when they use a credit card to make a purchase. According to the European Commission, "ecommerce is doing business electronically." It is based on electronic information treating and communication, which includes scripts, sound, and audio-visual. Others, such as Turban et al, 2006, define e-commerce as the process of purchasing, vending, moving, or exchanging goods, facilities, and/or information over computer networks such as the Internet. Considering the foregoing statements, it is acceptable to say that electronic commerce is a complicated phenomenon whose precise meaning varies greatly. Be that as it may, there's a common agreement among analysts that summarizes it as an advancing demonstrate that permits clients to take part in all stages of a buy choice - get to item data, select items for buy, and purchase the items, where the budgetary buy is all done electronically and not physically

within the store. As a result of Economic Cooperation and Development OECD (2000) the definition of electronic commerce is defined as "the totality of all applications related to online communication and transactions". Due to a lack of understanding or implementation of e-commerce and technological efforts, SMEs today in both developed and developing nations continue to fail. It is obvious that, independent of the eco-nomic environment, the most difficult task that most SMEs confront is the transition phase to compete in this unavoidable automated economy. These issues are primarily significant in unindustrialized nations, mainly Albania, where the digital era is still establishing itself slowly. The key problems are a lack of a strong commercial and legal system for conducting business and trade via e-commerce.

III. METHODOLOGY

The Most of businesses in Albania fall into the category of small and medium-sized enterprises (SMEs), both in terms of their number and the total number of employees. Consequently, our focus is primarily on this type of business. The data for this research was collected through questionnaires designed and administered by the author to enterprises. The statistics and indicators for the enterprises were derived from a survey specifically designed for this purpose, involving interviews with 50 enterprises. The collected survey data underwent analysis using the Statistical Package for Social Sciences (SPSS), considered by many academics as the most suitable program for the type of data and analyses performed. The sample size of 50 organizations may be considered limited for assessing ICT usage among businesses in Albania.

Furthermore, our investigation extends to the penetration of information and communication technology across Albania's manufacturing and service sectors. The empirical approach is two-fold. Initially, we analyze major ICT indicators to gauge the extent of tool adaptation. Subsequently, we employ the Censored Tobit regression model to establish the link between tool adaptation indicators and explanatory factors in the model. The data for this analysis was obtained from the conducted survey. Our empirical analysis seeks to validate the positive impact of variables related to ICT spread in the probit model, such as firm performance and size, while identifying a negative impact of sectoral concentration.

In response to numerous concerns, new strategies for ICT dissemination have turned to epidemic models. They ap-pear to be more consistent with behavioral phenomena, such as the reasons why businesses embrace innovations at various stages of their lives (interfirm theories) and the reasons why firms require time to switch their production from an old technology to a new technology (intrafirm theories). Here, we'll concentrate on a large and varied collection of contributions that are sometimes referred to as "probit models" or "queue models." Winston's 1981 study on the distribution of technological change may be used to investigate the fundamental ideas of probit models. The concept put out by this author is that, depending on the traits of the businesses and the marketplaces they operate in, various sectors have reached the point of technology adoption at different points in time. Winston (1981) focused on the following factors in particular: interest rates, the cost of innovation, company size, and pay levels. This deviates from the fundamental epidemic method because this model has greater variability. Different industries will experience innovation diffusion at different rates and in different directions, which reflects the diversity of businesses, markets, and institutions. Identified components that influence diffusion patterns in probit/queue models include:

1. Good quality of capital: As opposed to newer businesses, older and less productive businesses find it more reasonable to adopt innovation.
2. Expectations from new technologies that will positively affect adaptation.
3. Differences in input costs and demands between technologies, which suggests that certain businesses benefit more from one technology than others.
4. Diverse productivity levels among businesses, indicating that certain businesses benefit more from adoption.
5. Variations in how exposed enterprises are to expenses that might impact the net return on adaptation.
6. Changes in the cost pass-through caused by the characteristics of the technologies and/or the businesses' skills, which may alter the relative benefit of the new technology and highlight the significance of human resources.

Although the bulk of the characteristics are hard to observe, they have a significant effect in the spread of modernity. As a result, most probit models have reduced their number of variables in favor of those that best reflect the firm's and the company's structural characteristics, such as:

1. Firm size: Larger businesses often have more professional expertise, which increases the likelihood that they will adopt new technology. They also have easier access to financial resources, which enables them to handle the challenges associated with the adoption of innovation more effectively.
2. Industrial concentration: is also an important variable in these models.
3. Provider-side: The dissemination of information about commercial innovation is the sole responsibility of the manufacturers of new items. Pricing and advertising will play a direct and voluntary role in this,

and to the degree that they effectively utilize the technologies they develop themselves, it will also play an indirect role.

In conclusion, probit models are different from epidemiology in that they pay attention to both the supply and demand sides as well as the effect that various factors linked to market structure and business characteristics (such as their size and capabilities) have in the market. Consequently, a higher level of variability within industries is made possible.

IV.　　RESULTS

4.1 Questionnaire results

According to the survey results for the computer use indicator, which pertains to the fundamental level of ICT adaptation, the findings are as follows: In the category of micro-enterprises with 1-4 employees, only 19.5% utilize computers, while 80.5% do not. For small enterprises, 72.2% incorporate computer use, and 27.8% do not. In medium-sized enterprises (10-49 employees), 85.5% utilize computers, with 14.5% not using them. There is a clear trend indicating an increase in the percentage of computer use corresponding to the growth of the enterprise, while the percentage of non-use decreases with the expansion of the enterprise. Based on this analysis, it can be inferred that the adaptation of this fundamental indicator has been nearly complete in medium-sized enterprises, while there remains a lower degree of adoption in micro-enterprises and small enterprises.

For the Internet use indicator, categorized within the basic level of ICT indicators, in the micro-enterprises group with 1-4 employees, only 13.6% utilize the Internet, while 80.5% do not. Among small enterprises, only 57.6% use the Internet, with 42.4% not using it. In medium-sized enterprises (10-49 employees), 78.4% use the Internet, while 21.6% do not. Of course, this indication is directly tied to computer use, and again, Internet use is related to business size—the larger the business, the higher the level of adaptation. The degree of adaptation is essentially the same across all company sizes as the indication of computer use.

Concerning the indicator of having a website, classified as an advanced level of ICT, in the micro-enterprises group with 1-4 employees, only 13.91% have a website, while 86.9% do not. For small enterprises, only 17.72% have a website, and 82.28% do not. In medium-sized enterprises (10-49 employees), 27.83% have websites, while 72.17% do not. It is anticipated that this indicator would exhibit a lower level of adaptation since it belongs to a more advanced level of ICT. Notably, this indicator demonstrates a lower level of adaptation compared to basic indicators. As illustrated in figure 1, the most significant level of adaptation is observed in medium enterprises. It can also be inferred that the level of adaptation correlates with the size of the enterprise, with larger enterprises showing a greater inclination to have a website.
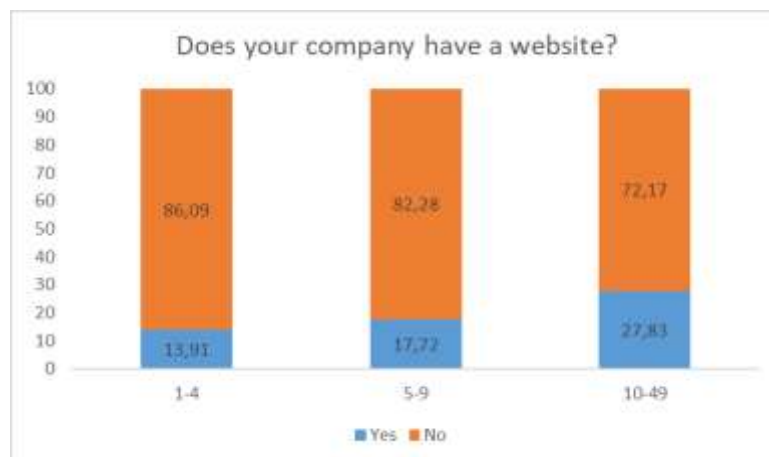

Figure 1: Website

Through this question, our aim is to discern the distribution of networks utilized by enterprises and identify the prevailing type. The graph reveals that only 24.0% of enterprises employ an internal network (intranet), 8.0% utilize an external network (extranet), and 68.0% rely on a local internet network. As illustrated in Figure 2, the intranet has the least prevalence among the three network types. The predominance of the local internet network, embraced by 68.0% of enterprises, underscores the widespread reliance on Inter-net-based connectivity. This prevalence can be attributed to the Internet's versatility and accessibility for diverse business operations.
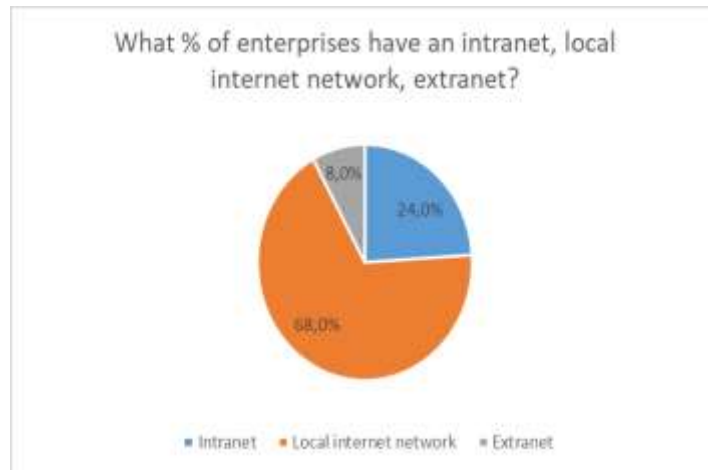
Figure 2: Intranet

Furthermore, the lower adoption rates of internal and external networks may be attributed to their higher costs and their suitability for larger enterprises. These network types are often more practical for businesses with extensive operations, multiple suppliers, and a higher degree of technological adaptation. Consequently, the widespread use of the Internet indicates its effectiveness as a versatile and cost-efficient tool, particularly for enterprises of smaller or medium size.

For the indicator of e-commerce usage, situated within another tier of ICT adaptation, specifically activities and E-commerce, the findings are as follows: In the micro-enterprises group with 1-4 employees, only 13.9% engaged in electronic commerce, while 86.1% did not. Among small enterprises, merely 18.4% utilized electronic commerce, with 81.6% abstaining. In medium enterprises (10-49 employees), 28.7% have embraced electronic commerce, while 71.3% have not. Notably, the adaptation of this indicator displays a positive correlation with the size of the enterprise, suggesting that the rate of e-commerce use is lower in small enterprises compared to medium and large ones. It's evident that this indicator exhibits a relatively modest level of adaptation, mirroring the trend observed in the website indicator. Logically, this prompts the conclusion that companies with a website are likely involved in electronic commerce. The parallel levels of adaptation between these two indicators suggest a symbiotic relationship between website presence and engagement in electronic commerce within the business landscape.

Services with E-commerce is yet another indicator falling within the domain of activities and E-commerce. For this indicator, the results are as follows: In the micro-enterprises group with 1-4 employees, a mere 12.6% engaged in electronic commerce for services, while 87.4% did not partake. Among small enterprises, only 14.7% utilized electronic commerce for services, with 85.3% abstaining. In medium enterprises (10-49 employees), 23% embraced electronic commerce for services, while 77% did not. As observed in Figure 3, the level of adaptation of this indicator correlates positively with the size of the enterprise. This trend mirrors the behavior identified in the website indica-tor, suggesting that larger enterprises are more inclined to incorporate electronic commerce for services. The congruence in adaptation patterns between these indicators strengthens the argument for a cohesive relationship between website presence and engagement in electronic commerce for services across enterprises of varying sizes.

Figure 3: E-commerce services

We observe another notable reason for Internet usage falling within the e-Gov category, encompassing interactions with government institutions such as obtaining information, downloading/filling in forms, and submitting offers in electronic procurement. The values presented in this section of the table underscore the influential role played by the public sector in driving ICT adaptation. In contrast, the e-commerce category, which involves making online payments and distributing products online, exhibits smaller values compared to e-Gov. The graphic representation below illustrates the reasons for Internet usage by companies in Albania, juxtaposed with those in European Union countries, providing an avenue for meaningful comparison. Notably, at the global level, the predominant reasons for usage are sending/receiving emails and finding information, with other reasons maintaining a similar trend albeit with greater specific values.

4.2 Econometric analysis on the use of the Internet among SMEs

This section of the thesis will look at how information and communication technology has extended throughout Albania's manufacturing and service sectors. The empirical approach is dual-pronged. To determine the degree of tool adaptation, we will first analyze the major ICT indicators. Then, we will use the Censored Tobit regression model to determine the link between the tool adaptation indicators and the model's explanatory factors. The poll conducted for this purpose provided the statistics.

Our empirical analysis aims to confirm the positive impact on the spread of ICT variables in the probit model such as: firm performance, size, and a negative impact of sectoral concentration. Sections two, three, and four of this section discuss the data, methods, and findings of the empirical research. Section one highlights the most significant approaches to innovation diffusion at the sectoral and business level. The results and some implications are presented in the last section.

4.2.1 Approach to diffusion of innovation

In response to numerous concerns, new strategies for ICT dissemination have turned to epidemic models. They ap-pear to be more consistent with behavioral phenomena, such as the reasons why businesses embrace innovations at various stages of their lives (interfirm theories) and the reasons why firms require time to switch their production from an old technology to a new technology (intrafirm theories). Here, we'll concentrate on a large and varied collection of contributions that are sometimes referred to as "probit models" or "queue models."

Winston's 1981 study on the distribution of technological change may be used to investigate the fundamental ideas of probit models. The concept put out by this author is that, depending on the traits of the businesses and the marketplaces they operate in, various sectors have reached the point of technology adoption at different points in time. Winston (1981) focused on the following factors in particular: interest rates, the cost of innovation, company size, and pay levels. This deviates from the fundamental epidemic method because this model has greater variability. Different industries will experience innovation diffusion at different rates and in different directions, which reflects the diversity of businesses, markets, and institutions.

Identified components that influence diffusion patterns in probit/queue models include:
• Good quality of capital: As opposed to newer businesses, older and less productive businesses find it more reasonable to adopt innovation.
• Expectations from new technologies that will positively affect adaptation.
• Differences in input costs and demands between technologies, which suggests that certain businesses benefit more from one technology than others.
• Diverse productivity levels among businesses, indicating that certain businesses benefit more from adoption.
• Variations in how exposed enterprises are to expenses that might impact the net return on adaptation.
• Changes in the cost pass-through caused by the characteristics of the technologies and/or the businesses' skills, which may alter the relative benefit of the new technology and highlight the significance of human resources

Although the bulk of the characteristics are hard to observe, they have a significant effect in the spread of modernity. As a result, most probit models have reduced their number of variables in favor of those that best reflect the firm's and the company's structural characteristics, such as:
• Firm size: Larger businesses often have more professional expertise, which increases the likelihood that they will adopt new technology. They also have easier access to financial resources, which enables them to handle the challenges associated with the adoption of innovation more effectively.
• Industrial concentration: is also an important variable in these models.
• Provider-side: The dissemination of information about commercial innovation is the sole responsibility of the manufacturers of new items. Pricing and advertising will play a direct and voluntary role in this, and to the degree that they effectively utilize the technologies they develop themselves, it will also play an indirect role.

To sum up, probit models are different from epidemiology in that they pay attention to both the supply and demand sides as well as the effect that various factors linked to market structure and business characteristics (such as their size and capabilities) have in the market. Consequently, a higher level of variability within industries is made possible.

4.2.2 Creating a composite indicator for ICT adaptation

First, a composite indicator that condenses a variety of ICT diffusion features must be created. The links between the composite indicator and the explanatory factors will next be examined in an econometric study. The empirical approach that considers the ICT adaptation in 2023 based on certain variables also takes into account the choice to adapt new technologies in a single year. ICT adoption was still fairly low throughout the time period under study, however many businesses have begun to invest in new ICT equipment. The fact that there is little association between the technical variable values in 2023 suggests that ICT dissemination in SMEs is still in its early stages.

We may combine data on the characteristics given in the table below and their correlations using the ABQ approach, which results in an effective description of ICT adoption in businesses. The weights in the last column of the following table, which are the outcomes of the linear combination of the first main component of the correlation matrix generated for the six studied variables, are added to create the combination of ICT indicators. Technically speaking, the vector with the largest value in the correlation matrix is what is meant by such components (or weights) utilized to compute ICT.

Table 1: Correlation

Variable	Blerje	Prod_Log	Konsumator	Shërbime_dixhitale	Shërb_Reklame	Web-site	Pesha
Blerje	1						0.3
Prod_Log	0.557	1					0.317
Konsumator	0.509	0.572	1				0.297
Shërbime_dixhitale	0.167	0.236	0.169	1			0.202
Shërbime_Reklame	0.156	0.179	0.16	0.196	1		0.243
Web-site	0.158	0.175	0.199	0.177	0.502	1	0.305

The following tables display the composite indicator's properties as well as the sample's average rate of ICT adoption. Table 1 emphasizes that ICT has a minimum value of 0 and a maximum value of 3.5 as a continuous, positive variable. Due to missing data, there were less observations (19) than sample businesses (50). Table 3 demonstrates that the industrial sectors have more ICT (and a larger average number of adapted ICT instruments) than the service sectors, regardless of how they are categorized in terms of technical intensity. The projected value of ICT increases with the analyzed industries' technical intensity, as may be predicted.

The average intensity of ICT adaptation is influenced by firm size, as it seems, and by the fact that ICT value is low-er in the case of enterprises with 1- 4 employees than in the case of firms with 10 - 49 employees, according to empirical and theoretical literature. This is demonstrated in Table 12, which is in line with this literature.

Table2: Statistics Descriptive

Observation	Variable	Mean
50	6	1.9724
Standar Deviation	Minimum	Maximum
0.9362	0	3.5

Table 3: ICT Adaptation Sectors

Sectors	Number of firms	Mean of usage of ICT	Average number of adaptations
Production technology: high and medium	4	20.4	8.1
Production technology: low and medium	7	2.1	7.4
Knowledge service: high	3	1.7	5.6
Knowledge service: low	5	1.9	6.7
Total	19	1.8	6.9

Table 4: Variable for the adaptations of ICT

Varaible	The explanation
1. Blerje_t	ICT tools used by the company to manage input purchases at time t (= 1 if the company utilizes such tools, = 0 otherwise)
2.Shërbime_Reklame_t	Use of online marketing and promotion tools at time t (= 1 if company employs these tools, = 0 otherwise)
3.Production_Log_t	Utilization of ICT resources for managing production and logistics at time t (= 1 if the company makes use of these resources, = 0 otherwise)
4.Konsumator_t	Utilization of ICT tools for managing customer service at time t (= 1 if the company utilizes such tools, = 0 otherwise)

4.2.3. Econometric analysis

The econometric analysis was performed using ICT as a dependent variable at the firm level and a number of independent variables at the sector level, which were emphasized in the distribution of innovation. These explanatory factors are described in the table below.

Table 5: Explanatory variables

Variable	Description
1.Performanca	Performance expressed through average sales per worker
2. P_T	Market concentration is a measure based on the number of businesses and workers in a certain industry.
3.Madhsi_firme	1 if the firm has 30 or more employees, 0 otherwise
4.Punonjës_PC	Average number of employees using computers
5.Punonjës me PC dhe Internet	The typical percentage of employees utilizing the Internet on PCs
6.Blerje_Online	1 if the firm makes purchases online, 0 otherwise
7.Lidhje_Internet	1 if the firm uses a broadband connection
8.e_Gov_Info	1 if the firm uses services such as information retrieval, 0 otherwise
9.e_Gov_forms	1 if the firm uses form download services, 0 otherwise
10.TIK_shpërndarje	1 if the firm uses form IT services, 0 otherwise
11.HT	1 if the company falls under the "high and medium-high - technology production" sectoral class; 0 otherwise.
12. Knowledge Intensive Services	1 if the firm or firms belong to the sectoral class "Knowledge Intensive Services (total)"; 0 otherwise

The Tobit model, which requires values to be constrained by inferior (left-censored) and/or superior (right-censored) thresholds, is acceptable when the dependent variable is quantitative. In our example, the thresh-old value is zero, corresponding to the lowest level of ICT distribution, and the model is truncated on the left.

Table 6: Tobitin Regression: Factors influencing ICT adaptation

Variable	Parameter Valued	Standard error	P-value
1.Performanca	0.0367***	0.0137	0.0073
2. P_T	-2.2008***	0.3269	0.0001
3.Madhsi_firme	0.2420***	0.0276	0.0001
4.Punonjës_PC	-0.111	0.1	0.3066
5.Punonjës me PC dhe Internet	0.0888*	0.0458	0.0526
6.Blerje_Online	0.1974***	0.0241	0.0001
7.Lidhje_Internet	0.1341***	0.0357	0.0002

8.e_Gov_Info	0.0816*	0.0439	0.0632
9.e_Gov_forms	0.0788	0.0503	0.1177
10.TIK_shpërndarje	0.2286***	0.057	0.0001
11.HT	0.0643**	0.032	0.0445
12. KnowledgeIntensiveServices	0.1068	0.764	0.1678

The findings of this econometric model are shown in Table 6, which also looks at the significance of the important variables in the probit model. The performance variable is quite important, which is why the calculated coefficient is so small. The probit model predicts that ICT will have a positive effect since firms are more likely to invest in the adoption of new technologies during periods of economic development or prosperity. The negative impact of the market concentration variable, perq_market, suggests that businesses operating in competitive industries (where concentration is low), characterized by many businesses and a high degree of demand elasticity, are more driven to adopt new technologies, including ICT, in response to competitive pressures. The outcome achieved in this manner supports the probit approach's theory, which states that competitive pressure combined with low concentration favorably influences the rate of adaptation and imitation.

When compared to the competitive advantages of new entrants, businesses with substantial market power are predicted to have less incentives to adapt technology, particularly in the event of radical developments with a high level of uncertainty. Additionally, organizations that demonstrate high organizational complexity and high inefficiencies that operate as obstacles to adaptation are more likely to be found in concentrated industries.

The firm_size variable is significant and influences ICT adaption in a favorable way. The "critical threshold" theory, which is normally applied to the probit technique, is compatible with this conclusion. Large companies may frequently operate as "First Movers" in the ICT adaptation process for a variety of reasons. The availability of the profes-sional skills required to manage new technology, improved access to the credit market, and improved financial circumstances are a few of these. The characteristics that were utilized to gauge company capability had the anticipated favorable impact on ICT adoption.

It is extremely likely that the 'Punonjës me PC dhe Internet' variable, as determined by the percentage of employees who have access to the Internet, will have a significant impact on the development of an innovative workplace. We anticipate that the ability of the firm's employees to acquire abilities in using ICT services will rise, particularly when the 'Punonjës me PC dhe Internet' variable increases. Employees may have more difficulty learning advanced user skills in businesses with a high percentage of stand-alone computers (computers not connected to the Internet).

The number of employees who use computers that are not connected to the Internet (Employee_Pc) does not have a significant impact on information and communications technology (and the sign of the coefficient is even more negative in this case), even when the estimated coefficient of 'Punonjës me PC dhe Internet' is positive and significant.

The variable 'Blerje_Online' is positively correlated with ICT, which is consistent with the general assumption that businesses with higher ICT levels are more likely to value the advantages of using e-commerce, which enables direct product purchases online. The idea that users will gain more knowledge about the technology they use, and that this will eventually increase the profitability of further adaptation of the innovation, is generally supported by this re-sult. This concept of "learning by using" is seen as an essential component for the diffusion of innovation.

The variable Internet_Connection can be used to indicate how sophisticated a broadband connection infrastructure is. ICT is shown to rise as the available bandwidth increases by the predicted coefficient for this variable, which is positive and significant. This finding indicates that improved transmission efficiency is necessary given the ongoing development of technology applications and ICT services. Businesses have accelerated communication and Internet access, as well as the usage of interactive multimedia services, thanks to an effective communication infrastructure.

Through the use of two dummy variables relating to the services offered by eGovernment, we may see the role played by the public sector in encouraging adaptation to ICT. According to the degree of contact between these ser-vices, the facts at hand enable differentiation.

The e_Gov_Info variable is used to aggregate the services that are available and allow businesses and regular residents to "get information" with little to no interactive content.

The aggregated services that enable "downloading forms" are identified by the variable e_Gov_form. It appears that the variable e_gov has a consistently beneficial impact, but that this influence also grows at both levels and becomes more substantial as interaction rises.

It is broadly consistent with some of the hypotheses advanced by systemic approaches that the representation of public activities can play a special role in catalyzing innovations that the greater adoption of ICT is influenced by the availability (and quality) of e_gov services. Our findings are consistent with those of Eurostat's descriptive research, which found that the EU nations had the largest distribution of e_gov services targeted at giving basic information. Even while less interactive e_gov services may be more common, and even though things may have altered in recent years, the more interactive service is still the one that encourages ICT use among businesses.

The sectoral makeup of the sample businesses is a significant control that was incorporated into the research. ICT is more likely to be used by businesses that are part of the ICT industry (ICT_distribution). In reality, because of user experience, new technology producers get a deeper understanding of their own products and raise the caliber of the goods they provide. Additionally, ICT providers can impact the rate of technological adaptation by encouraging customers to spend through their updated offers of technologies and services.

After analyzing this paradigm, we may discuss some of its political ramifications. First off, policies supporting ICT adoption and dispersion should differ significantly depending on the industries in which users are involved and the number of prospective users. One way is that the ICT composite indicator we derived for the overall degree of adaptation indicates a higher intensity for manufacturing than for service industries and for high-tech sectors than for low-tech ones.

Additionally, medium, and big businesses are more affected by the indication than small and medium businesses. On the other hand, econometric research unequivocally supports the positive and substantial effect of business size and the relationship between ICT adoption and sectoral technical intensity. Additionally, our research supports the detrimental effects of market concentration, which appear to be a significant roadblock to its adaptability.

Of course, this offers a justification for lowering monopolistic circumstances, particularly in the energy and tele-communications industries, and to ensure fair competition in a variety of markets by fostering the development of technology. We cannot, however, dismiss the important role that small business sizes play in the dissemination of ICT. In order to help SMEs in developing appropriate technical options for industry adaptation, it is crucial and re-quired to promote not only the growth of enterprises and their technological capabilities but also collaboration be-tween firms and institutions.

Econometric analyses demonstrate that more adaptability inside enterprises is favored by the availability of instruments (such as Internet-connected PCs) that facilitate the usage of ICTs. Since the association is modest and significant, it is challenging to gauge how organizational and cultural elements, which form the foundation of ICT use, have an impact. These elements include alterations in management and organizational procedures brought about by tools and services backed by various types of training. The report also emphasizes the importance of public administration in encouraging ICT adoption inside businesses, particularly through the creation of eGov services. However, the policies that encourage the use of eGov are implemented both at the municipal and national levels utilizing public resources.

V.　　CONCLUSION

The alignment of Albania's Internet penetration and usage with affluent nations underscores a notable level of technological parity. This parity is particularly noteworthy given the consistent influence of traditional factors highlighted by the probit model, such as robust market performance, healthy competition levels, optimal organizational size, and strong business competency. These factors collectively play a pivotal role in fostering the wide-spread adoption and diffusion of Information and Communication Technology (ICT) within the country's business landscape.

Moreover, the positive correlation between these conventional factors and ICT diffusion reflects a strategic and symbiotic relationship. For instance, a thriving market performance and healthy competition can drive businesses to invest in and leverage ICT to enhance their competitiveness and overall performance. Similarly, the optimal size and business competency of enterprises contribute to a conducive environment for effective ICT integration and utilization. Beyond these traditional factors, our analysis reveals the importance of broader elements that significantly contribute to the favorable ICT landscape in Albania. The presence of broadband networks acts as a proxy for robust infrastructure development, facilitating seamless and efficient ICT connectivity. This, in turn, enables businesses to leverage advanced technological capabilities for communication, collaboration, and innovation.

In conclusion, Albania's positive trajectory in Internet penetration and ICT usage is influenced by a combination of traditional factors and broader elements that collectively create an environment conducive to the widespread adoption and experimentation with advanced ICT services. This holistic understanding is crucial for

policymakers, businesses, and researchers seeking to further enhance and sustain the positive momentum in Albania's ICT landscape.

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