

TRENDS OF ELECTRONIC BUSINESS IN THE CONTEXT OF RURAL DEVELOPMENT

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Abstract: The article analyzes trends of electronic business in the context of rural development. To highlight the theoretical insights of the topic, the concept of e-business is discussed. This includes analyzing e-business concepts and models, exploring how e-business functions, establishing what factors are important for the development of e-business in rural regions and analyzing statistical data and studies. To understand the aforementioned, a survey was conducted. It was designed to find out whether consumers in rural areas are buying online, whether they are doing business in the region, and whether they are going to start e-businesses. The survey confirmed the hypothesis that consumers have a need to buy rustic or bio goods and services, and business transfer to e-space encourages business development in rural areas.

Keywords: e-business, rural development, e-biobusiness.

1. Introduction

Rural development issues have been the topic of academic research and public debate more and more often in recent years. With regard to rural development in the European Union and at national level, e-business trends in the development of rural areas has gathered interest.

In actuality, there is no unified and universally recognized e-business definition. In scientific sources (Philip, and Williams 2019; Chunyan, 2019; Wang, and Huang, 2018; Long, and Wang, 2018; Petrylaitė, and Radzevičienė, 2016; Stankevičiūtė, and Čiarnienė, 2015; Veilt et al., 2014; Andreopoulou et al., 2014), the concept of e-business is treated differently, but it is emphasized that small and medium-sized businesses located in rural regions have unique opportunities for kick-starting rural development by starting their online business.

E-business in rural areas is important because it is supporting income growth, opens up new markets, creates new jobs and helps to do deal with other challenges, such as the barrier of distance (reach remote customers). Thus, in the context of rural development, e-business can be perceived as undertaking business operations, organizing company activities, and optimizing various in-house processes by using digital technologies. E-business involves various online transactions: buying, selling, supplying, advertising, consulting and other forms of business cooperation (Iv et al., 2017). However, the question arises – what are the e-business trends in the context of rural development and how will e-business lead rural development in Lithuania in future?

2. E-business theoretical insights

The concept of e-business was described in 1996, by IBM employee, Louis Gerstner. The emergence of this business was influenced by technological and economic factors, such as the spread of personal computers, smart phones and the globalization of business (Stankevičiūtė, and Čiarnienė, 2015). Different authors e-business describe e-business differently (Table 1).

Table 1.
E-business descriptions and definitions

Author	Description/Definition	Comment
Philip, and Williams, 2019	Digital telecommunications provide opportunities for rural businesses including, for example, supporting local income growth, opening up new markets and helping to overcome friction of distance and other challenges.	The digital economy offers many advantages to home based micro-businesses in rural areas.
Wang, and Huang, 2018	Rural e-business enterprises provide many economic indicators, namely, type and number of innovation platforms, standardization levels, innovation efficiency, and number of production units or university – research cooperation platforms and so on.	E-business is the main direction for the future development of enterprises.
Long, and Wang, 2018	Integrating E-commerce into the system enables poverty alleviation by acting on the targeted objects and innovating the ways of poverty alleviation, and by improving the performance of poverty alleviation.	Through the development of rural E-commerce, an "Agriculture + Internet" new format will be formed, which will broaden new channels and enable exploration of a new path of E-commerce poverty alleviation.
Stankevičiūtė, and Čiarnienė, 2015	Electronic business is defined as the execution of business operations and the organisation of the company's activities using information technologies in the environment of data transmission networks.	These are various activities for profit in the online environment – trade, marketing, teleservice, telemedicine, distance learning, teleworking, banking and other activities.

Cont. table 1.

Andreopoulou et al., 2014	Electronic business is a tool that enhances competitive advantage and consists of such objects as e-commerce and so on.	This tool regulates purchase, sales operations and communication between customers and business partners.
Veilt, et al., 2014	E-business consists of several business processes that are performed using digital technology.	E-business is a constantly evolving activity due to the rapidly developing IT.
Račinskaja, and Raudeliūnienė, 2013	E-business can be defined as the conduct of business operations and the organisation of a company's activity on the network.	There are a variety of profit-making activities in the cyberspace
Tsekouropoulos et al., 2013	Electronic business is the automation of interaction between company employees, buyers, suppliers and business partners.	E-business as a term, covers both internal and external processes between companies.
Steinfeld et al., 2012	Electronic business is all the activities of a company that operates on the Internet.	Activities include developing a strategy for online companies; improving communication between employees, suppliers and customers; as well as collaborating with partners to coordinate production through electronic communication.
Paliulis, and Sabaitytė, 2012	Electronic Business is a business that uses information technology infrastructure.	Products and services can be moved to e-space to improve business efficiency.
Andreopoulou, et al., 2011	E-business is a business that distributes and enables the use of products and services, primarily through electronic communication systems.	E-business uses information management and other business infrastructure to obtain benefit for itself and consumers.
Ring et al., 2010	E-business is the formation of various economic transactions, the development of which is related to the information technology base.	The purpose of e-business is to automate all possible economic actions, to computerise it as much as is technically possible.
Cunningham, and Fröschl, 1999	E-business is the process of economic transactions, trading activity or performing all the tasks of an organisation using electronic communication.	E-business includes production, trade and withdrawal of physical products, as well as the creation of a market for digital products and Internet-based services.

After analyzing e-business concepts as postulated/described by Lithuanian and foreign authors, it can be seen that e-business concepts include a positive expression of information technology development trends. In such work, it is emphasized that e-business is one of the main directions for the future development of rural areas. So, in general, in this study, e-business is defined as company operating system in the Internet that is directly connected via the Internet with its most important participants – employees, suppliers, manufacturers, consumers, and which enables rural development.

E-business is often identified with e-commerce. E-commerce is a form of E-business that is the most widespread and the most clearly defined. It is also easy to develop (compared to others e-businesses), and is one of the main components of electronic business. Attention must be applied, therefore, to understanding to who such business is oriented to and to what e-business models are followed. These include:

- Business to Business (B2B). This model includes collaboration between companies in the cyberspace. Such communication is possible 7 days a week, 24 hours a day. Electronic tools help to manage the company's internal operations more efficiently, and to respond to the needs of another company.
- Business to consumer (B2C). This model describes e-commerce. This model includes online stores, search portals, virtual communities, forums, and more.
- Consumer to consumer (C2C). The model includes a relationship between users. The model is often applied to a variety of forums online.
- Government to Business (G2B). This model describes electronic collaboration between public authorities and business. It includes managing, sending or registering business documents, and performing other operations on the network.
- Government to consumer (G2C). The model includes the dissemination of information to consumers, the provision of statistics, the provision of health, education and other services to consumers in e-space.
- Government to government (G2G). This category describes state management, reorganization through electronic networks. The emergence of e-government promotes cooperation between public authorities.

In general terms, a business model is a way of organising business, and is determined by the relationship between consumers and business. In the assessment of e-business opportunities in the regions, it is best to carry out B2B or B2C, since they are the most prominent e-commerce activity. It is further appropriate, however, to examine what e-business models can be developed in the regions (Table 2).

Table 2.
E-business models

Model	Definition
<i>E-shop</i>	The equivalent of a traditional store in e-space where one can view, select and order items (food, clothes, parts and so on).
<i>Electronic ads</i>	Similar to press releases. These announce what is purchased, sold or changed, specifying the most important product parameters, price, and seller contacts.
<i>Electronic auctions</i>	Often, auctions are held as a competition where the Internet users can be both sellers and bidders. Typically, bidding processes in electronic auctions are integrated with transaction, payment and delivery processes.
<i>Electronic entertainment</i>	This is online entertainment: TV, music, radio, sports, movies, news, games. In most cases, a certain amount of content is provided free of charge.
<i>Virtual Communities (Forums)</i>	A mobilisation of people of common interest in one place and the ability to communicate with in distance, the virtual community can also be an important marketing element for customer loyalty and for creating an independent customer feedback.
<i>Electronic publishing services</i>	Books, newspapers and magazines can not only be printed, but also delivered electronically.
<i>Other e-services</i>	These include consulting, providing information, recruitment, logistics services, insurance, information, tourism, rental and other services.

Source: Andreopoulou et al., 2014; Veilt et al., 2014; Chunyan, 2019; Paliulis, and Sabaitytė, 2011.

It can be said that e-business model trends are viable because e-business is more accessible than traditional business and has no space and time constraints. In the most general sense, the e-business model can, in rural areas, be applied in e-commerce, services, virtual communities and so on. Of note, this requires clarification of e-business issues and situation in the regions.

Most commonly, the advantages of digital communications in rural areas have been studied (Philip, and Williams, 2019), or e-business models in the regions have been discussed (Chunyan, 2019) and e-business processes or activities analyzed (Andreopoulou et al., 2014; Veilt et al. 2014) as has poverty alleviation through rural e-commerce mode (Long, and Wang, 2018), while remote rural home based businesses have been investigated (Wang, and Huang, 2018), e-commerce trade trends assessed (urban and the rural areas) in a European perspective (Voineagu, 2016) or e-commerce activities among rural communities researched (Kshetri, 2018). These studies, however, miss the gathering and analysis of more specific data of companies existing in rural areas that are targeting business located therein to e-space, or of the volume of e-trade. Moreover, there is too little analysis of the situation in rural areas and few rural population surveys. All this will be discussed below.

3. E-business issues and situation in the rural areas

Rural development must become a national priority task and electronic space can be harnessed to bring this to reality (Leatherman, 2000). In recent years, there are a growing number of companies in the Lithuanian regions that are moving their business into e-space (Table 3).

Table 3.

Proportion of enterprises which sold (received orders for) goods or services via electronic networks

Year	2013	2014	2015	2016	2017
Total (%)	19,3	19,0	19,6	22,8	22,4

Source: Statistical Department, 2019a.

Such companies have already noticed e-marketing benefits, the most important being increasing number of customers. The problem with traditional business is that it does not reach remote users, so companies are moving their business to e-space to reach a larger audience.

Analyses of volume of e-trade (G4791 mail or online orders-based trades) (Table 4) shows that, from 2014, the volume of e-trade has been increasing. Hence, it can be concluded that e-business is a truly promising area.

Table 4.*Turnover (VAT excluded) and indices of retail trade, motor vehicles and catering enterprises*

Year	2014	2015	2016	2017	2018
G4791	155 257,6 EUR	214 957,2 EUR	274 058,3 EUR	357 768,3 EUR	445 172,2 EUR

Source: Statistical Department, 2019b.

The ability to sell using e-commerce will quickly enable production (Strzębicki, 2015). Jaladi et al. (2011) and Cheah et al. (2013) emphasize that despite e-business growth, there is a real need for e-services because it has a huge development potential. They stress that using e-business services leads to a successful competitive struggle because through e-commerce, businesses save both time and finances. To take advantage of this, modern rural development ideas in the European Union, which Lithuania is targeting, offer the provision of broadband Internet access to all rural areas of the country and to develop more electronic service opportunities (Philip, and Williams, 2019a). However, research reveals (Dapkus, and Kmieliauskaitė, 2011) that the level of IT preparedness of the inhabitants of rural areas of Lithuania does not enable them to participate actively in the e-space. Furthermore, there are doubts if their computer literacy knowledge will be enough to develop their business.

Research studies have highlighted the prospects for potential rural development ideas. The experience of several European countries in accomplishing this suggests that it is appropriate to move from traditional agriculture to multifunctional biobusiness. For example, to produce, process and sell online biobusiness production. Although e. business potential is clearly visible, according to J. Žaptorius (2011), while there are no obstacles to successful e-business development, a problem exists – There are not enough e-services or biobusiness (biomass production sectors or fully bio-based or 100% bio-based transformation sectors or partly bio-based transformation sectors) in rural areas. Biobusinesses could produce and sell: food, drinks, wood, paper, textile, clothes, leather, chemical and medicine products (NACE classification: agriculture-, forestry-, fishing- and aquaculture-based businesses, producing food, beverages and tobacco, or manufacturing bio-based textiles, wearing apparel and leather, or manufacturing wood products, wooden furniture and paper or bio-based chemicals, bio-based pharmaceuticals, bio-based plastics and rubber, or manufacturing bioethanol and biodiesel, as well as producing bioelectricity) (Ronzon, 2018).

In order to develop e-business, it is necessary to evaluate its development-friendly and unfriendly factors. Exclusion of negative factors is needed for evaluating, eliminating or at least minimizing negative effects, and establishing realistic goals. For this purpose, the analysis of SWOT has been done (according to the studies discussed above) (Figure 1).



Figure 1. SWOT analysis. Source: Strzēbicki, 2015; Jaladi et al., 2011; Cheah et al., 2013; Philip, and Williams, 2019a; Ronzon, 2018.

The SWOT analysis reveals that e-business in the regions may have a perspective, especially in the development of biobusiness. Still, it is important to properly assess threats and seize opportunities. Also, it is appropriate to interview the population in the region about their attitude about rural e-business development. There is also the need to find out whether consumers in rural areas are buying or selling online (what they are buying/selling the most, and what products are lacking), whether they are doing business in the region, and whether they see the opportunities for development after moving their businesses to the Internet.

4. Research methodology and results

The research hypothesis “*Consumers have a need to buy rustic or bio goods and services, so business transfer to e-space encourages business development in the regions*” is based on assessment of the statistics that suggest there is a growing number of companies in the Lithuanian regions that are targeting their business to e-space (Table 3). This is built upon statistics that show growing mail or online orders-based trades turnover (Table 4), as well as

SWOT analysis. To verify the hypothesis, an empirical quantitative study with a questionnaire has been conducted¹.

The survey questionnaire for consumers has been designed to find out whether consumers in rural areas are buying and selling online, whether they are doing business in the region, and whether they are moving business to e-space. The questionnaire consists of 12 questions divided into 6 groups. It was focused on a wide range of products and was aimed to explore the marketability (Table 5):

Table 5.
Questionnaire questions

Group	Justification	Question
I. Frequency of online purchases	Find out if consumers buy online	1. Do you buy goods or services online?
	Find out how often users use e-business services	2. How often do you buy goods or services online?
II. E-business model	Find out what goods/ services and where consumers are buying	3. What kind of goods or services do you buy online?
		4. In which e-commerce sites do you buy most often
III. E-business slowing factors	Find out what is interfering with buying online	5. What difficulties do you encounter when shopping online?
IV. Employment in the regions	Find out what business is developing in the regions	6. Your occupation?
		7. Do you carry out any activity in the region where you live?
		8. What activities do you have?
V. The need for e-business in the regions	Find out if there is a need to move business to e. space	9. Would you consider the possibility of moving part of the business to e. space?
		10. What opportunities would you see when part of your business moved to e. space?
VI. Consumer Information	Find out demographic information	11. Your age?
		12. Your gender?

The required number of respondents was selected according to statistical data of the Statistical Department (2019c) (there are 918 814 people living in the region). Using the online calculator (<http://www.factus.lt/main-calculator/>), it is estimated that 96 respondents are needed (with a probability of $P = 95\%$ (the total uncertainty margin can be $\delta \leq 10\%$)). The results of such a study are appropriate and may be subject to further analysis (Kardelis, 2016). During the survey, 102 respondents replied, 97 of which confirmed that they were not living in a city.

The first question indicates that 78.4% of all respondents buy online. The second question shows that 33.3% of all respondents quite often buy online – several times a month (20.6% - several times a year, 15.7% - bought once or more). It can be concluded that there is a real need for e-business in rural areas. Moreover, the results of the survey can be interpreted that local businesses have to offer more products to on-line shops or large on-line networks.

The third question points out that most of the online purchases were items for work or handicrafts, food and fertilizers, seeds and feed. As additional responses, it was noted that

¹ <https://apklausa.lt/f/elektroninio-verslo-tendencijos-kaimo-pletros-kontekste-65vs6ax/answers/new.fullpage?fbclid=IwAR1Uh-sYIkPSHo1MEgxLdCxPhzja6Rqki7I4hZNU0ZQHCVshyatvZgITetM>.

clothing, bioproducts, raw materials were also purchased (Figure 2). The fourth question revealed that respondents buy in Lithuanian (42.5%) and in foreign (50%) e-shops.

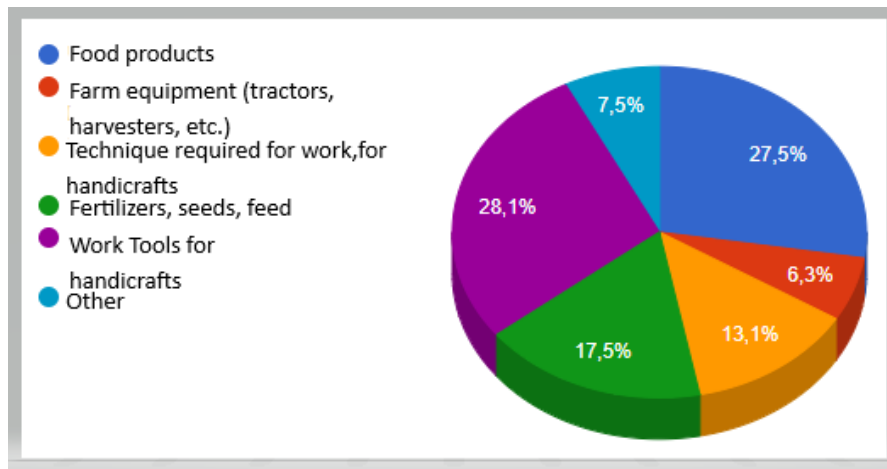


Figure 2. The best-selling goods and services.

The fifth question (Figure 3) revealed that only 6.1% of online purchasers do not have difficulties in conducting on-line business, the rest of the respondents have difficulties with lack of specific goods choice (36.3%) (agro products, parts, advice, etc.) or long delivery time (15.1%). By choosing option “Other” (15.1%), respondents noted that, there is a lack of choice of high quality, natural products, high quality raw materials for handicrafts (leather, textile), furniture and wood products, wood or other fuel and chemical products.

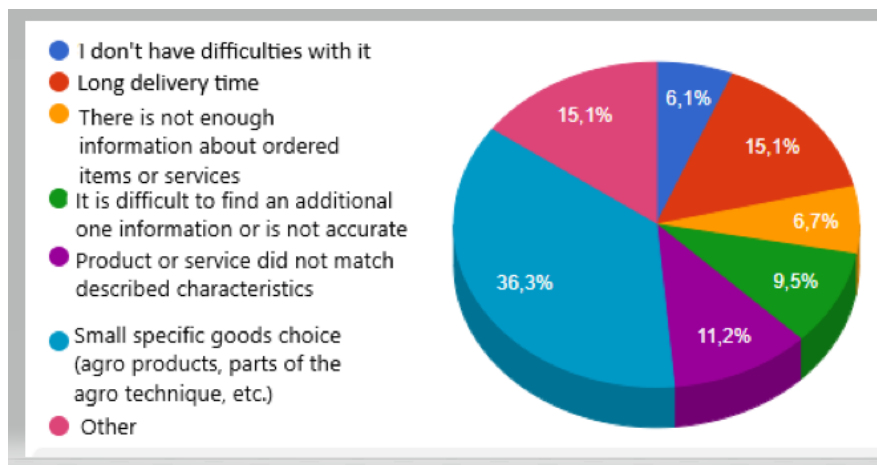


Figure 3. Difficulties in e-commerce

It can be concluded, therefore, that it is appropriate to develop e-biobusinesses in rural areas. For example, bio-based manufacturing and selling online of food, wood products, textiles, clothing and leather products, pharmaceuticals and pharmaceutical preparations, rubber and plastic products and furniture.

The sixth question showed that the majority of respondents were farmers or craftsmen (28.4%) or were working a hired job (26.5%). The seventh question noted that more than half of the respondents (57.8%) were doing business in the region. It can be said, then, that there are people who are willing and able to work in the region.

Next, by answering the eighth question (Figure 4), the survey showed that the majority of respondents were engaged in agriculture (16.7%), crafts (15.7%) and the food trade (8.8%). Still, as there was a demand for biobusiness, they would be tempted to reorganize their ongoing activities to take advantage of the opportunities biobusiness and e-biobusiness offer.

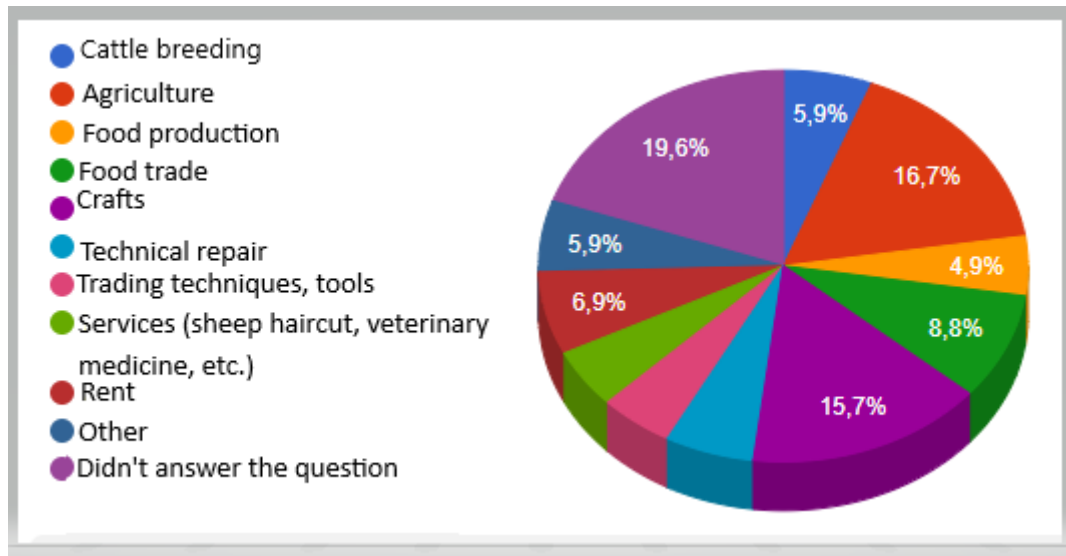


Figure 4. Difficulties in e-commerce.

The need for business relocation to e-space was confirmed by responses to the ninth question. More than half (51%) of all respondents would consider developing e-businesses. The most likely are the following portability options: business development opportunities (37.9%) and access to remote consumers (28.4%). By option “Other” (16.4%), respondents noted that they would like to reach foreign markets.

Crosstabulation analyses (by SPSS) demonstrated that 88,1% (52 respondents from 59) of all respondents who are doing business in the region, would consider developing e-businesses. It also revealed that 79,2% (42 respondents from 53) of all respondents who are buying in Lithuanian e-shops, feel a lack of specific goods choice. Hence, enterprising respondents have the potential clientele to move business to e-space, through offering specific rustic, agro or bio goods.

The survey confirmed the hypothesis that consumers have a need to buy rustic or bio goods and services, and that business transfer to e-space encourages business development in the rural areas. It also revealed a demand for e-business in the region. For this reason, e-biobusiness opportunities in the context of rural development will be discussed next.

5. E-biobusiness opportunities in rural areas

Survey and analysis of statistics revealed that there are no barriers to develop e-business models in rural areas, but there is a lack of bio-supply or agricultural products. In addition, there are noticeable trends on the Internet-based of the market of such products. The analysis has also uncovered the fact that the changing needs of consumers - the desire for high quality production from the rural areas – can be satisfied by purchasing on-line (i.e. through e-biobusiness).

As it can be seen, e-biobusiness is a promising business area. The following directions for the promotion of e-biobusiness may be recommended: to encourage investment in high value-added activities; to promote the market introduction of new products; to promote sectoral cooperation in innovation and develop high-impact innovation; to promote value networking; to promote business and science cooperation, to transfer knowledge and technology; to promote the development of production clusters and integration into international value creation networks (Lietuvos-santrauka, 2017). The study also demonstrated that it is appropriate to widely examine e-biobusiness in further studies.

6. Conclusion

There is no single unified and universally recognized e-business definition, but e-business and its development-related topics and issues in the context of a rural development are often the subject of study. In this work, electronic business is understood as company activity in the Internet, and the e-business model in rural areas could be applied mostly in commerce or services.

While studying e-business issues and the situation in the regions, it was noticed that there is a growing number of companies that are targeting their business to e-space, but there is a real need for more e-business companies because rural-based e-business activity has a huge development potential, especially in the development of innovative business models and biobusiness.

The survey confirmed the hypothesis that consumers have a need to buy rustic or bio goods and services, and business transfer to e-space encourages business development in the rural areas – 78.4% of all respondents stated that they buy online. The survey also showed that respondents have difficulties with lack of specific goods choice (lack of choice biomass production sectors, fully bio-based or 100% bio-based transformation sectors, partly bio-based transformation sectors – mostly proffering high quality, natural products, high quality raw materials for handicrafts (leather, textile), furniture and wood products, wood or other fuels and

chemical products). Moreover, the study underlines the fact that more than half (51%) of all respondents would consider developing e-businesses.

It can be stated that, barring infrastructure limitations, there are no barriers to developing e-business models in rural regions – consumers have a desire for biobusiness products (high quality production from the regions). Hence, the proposal would be to encourage investment in high value-added e-biobusiness (promote the market introduction of new biobusiness products and sell it online). Over all, it must be affirmed that enterprising rural-based people have the potential to move their business activity to e-space, by offering biobusiness goods.

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