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THE IMPACT OF INVESTMENTS AT E-COMMERCE AND R&D ON ECONOMY OF UKRAINE

Abstract

E-commerce is a dynamically developing industry. E-commerce and R&D means innovation and constant dynamic development. Today it is e-commerce and R&D are the key to success for companies and entire countries. The actual issue – how they impact on economy? So this study attempts to examine the impact of e-commerce and R&D on the main macroeconomic indicators (such GDP per capita).

Key words: e-commerce, R&D, Multiple Regression, ICT

Introduction

E-commerce is a dynamically developing part of the economy and has great potential. The growth of Internet penetration affects the development of e-commerce, in addition, entails a change in the structure of the consumer market. An increasing number of businesses are getting involved in e-commerce. The innovative benefits generated are quickly replicated by competitors. This circumstance provokes the need to systematically develop and improve effective solutions for the production of new goods and services in order to maintain competitive advantages.

Literature overview

Rana Deljavan Anvaria and Davoud Norouzib [1] examined the impact of e-commerce, RnD and other variables on economic development in 21 selected countries. This study used a panel data method with a generalized least quadratic regression (GLS) method from 2005 to 2013. The results showed that e-commerce and RnD had a positive and significant impact on GDP per capita. Health care expenditures and the number of members of the government, as well as other dependent variables, also had a positive

effect on GDP per capita. The results obtained can be effective in improving and growing the economy.

Xintian Wang and Hai Wang [2] used empirical analysis to prove the impact of e-commerce on corporate innovation. Compared to previous studies, this study has established a model of the impact of e-commerce on the promotion of corporate innovation, taking into account the factors of e-commerce development, factors of the level of informatization, factors of the system of commercial circulation and economic development. In Measurement Model investigated the influence on e-commerce 2 pathes: E-commerce Development → Regional Informatization → Corporate Technological Innovation and: E-commerce Development → Commercial circulation system → Corporate technological innovation.

The article by Zatonatska T.G. [3] describes the model of the dependence of the unemployment rate on the growing prevalence of the Internet and e-commerce in Ukraine, Poland and Austria. It is determined that it is most relevant for Austria, where the level of Internet penetration is the highest, which means that for Ukraine it will be relevant in the next stages of development, when the level of Internet penetration will be high enough.

Kozlov, V. and Tomashevskaya T. [4] examined the state of the e-commerce market in Ukraine. In their article was given the main economic indicators of e-commerce for latest years. The main goal of the article is to build a model of economic stability. To analyze the level of economic sustainability, it is proposed to use a methodology based on the calculation of ranks (places, positions) of individual regions of Ukraine by purchasing activity. Based on the obtained data, a dynamic personalized matrix is constructed.

Dan Brenner [5], the Chief Growth Officer at SPRIM and SPRIM Ventures, examined the role of e-commerce in product innovation. In the article is analyzed the impact of e-commerce on corporations: the risks associated with e-commerce, spending and introduction and maintenance of e-commerce, the amount of time to introduce, the advantages and disadvantages of e-commerce for business, the experience of early adopters. And of course the main experimentations with e-commers for innovation and the impact of e-commerce on the pace of innovation in a company.

Results

To model the impact of e-commerce and RnD on the economy of Ukraine, you can use the method of panel data with a generalized least quadratic regression method, described in the article by Rana Deljavan Anvaria and Davoud Norouzib [1].

The model looks like:

$$GDPP_t = \alpha + \beta_1 EC_t + \beta_2 R\&D_t + \beta_3 GS_t + \beta_4 HE_t + \varepsilon_t, \text{ де}$$

GDPP – this is GDP per capita,

EC – e-commerce, measured by online purchases by individuals (% of retail sales),

RnD – research and development costs (% of budget),

GS – the size of the government based on the final consumer expenditures of the state budget (in UAH),

and HE – health care costs (% of budget).

After the calculations, the following coefficients of the model were selected:

$$GDPP = 2878.05 + 2227.28 EC + 13579,09 R\&D + 13579,09 GS - 1334,06 HE.$$

Conclusions

This model showed good reliability, despite the fact that not all factors were taken into account. The probability of deviation of the model results is high due to the small sample of data for analysis. The results of the model showed that e-commerce and RnD had a positive impact on GDP per capita. Other dependent variables also had a positive effect on GDP per capita.

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