Digital Entrepreneurship and Innovation: A Spanish Analysis Using ESEE[1] Data

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We analyse how digital entrepreneurship influences the innovation activity of Spanish manufacturing firms using an ESEE panel data from 2013 to 2016. Three variables are significant for all kind of innovation: to have their own internet selling system; internet suppliers' buying strategy and firm's sales internet relevance. Additionally, Spanish SMEs' behaviour is different from big firms: meanwhile internet plays a very relevant role for SMEs, it is not so important for bigger ones. The need to emphasize the development and access to digital technologies, especially Spanish SMEs, to compete with success in the global economy is our main conclusion.

Keywords: product innovation, process innovation, commercialization innovation, organizational innovation, digital entrepreneur, probit, panel

INTRODUCTION

Technology trends[2] have changed the way firms manage and organize their resources, substantially modified products' design and even developed alternative methods of matching demand[3]. Such quick development has profoundly transformed the competitive environment and reshaped traditional business strategies[4]. In fact, the economy has moved from the *old analogical business structure*, where traditional firms contended to reach the highest share of their markets, to a *digital one* with business competing in more intelligent and global environments.

This process has been called the *Fourth Industrial Revolution,* described as "a set of new technologies that connect the physical, digital and biological worlds and affect each aspect of life, such as governments, businesses, economy, technology and society as a whole… The Fourth Industrial Revolution, however, has the potential to connect more people to digital networks, dramatically improve the efficiency of organizations and even manage assets in ways that can help regenerate the natural environment, potentially undoing the damage of previous industrial revolutions"[5].

Novel digital technology has been incorporated in various forms as a vital component of firms' business model: digital products or services[6], digital platforms[7], digital tools or infrastructure[8], digital artefacts[9], or Internet-enabled service innovations[10].

Two characteristics define this Industrial Revolution: First, *digital technologies are an innovation that permeates everything*. Digital revolution follows Schumpeter's "creative destruction"[11] who established five innovation procedures: new production or commercialization methods for existing products; the introduction of new products, and the capture of new markets or new raw material sources. All those elements are present in digital technologies implementation.

Technological changes introduce process innovations related to inputs management but also to the production function. No longer is necessary big scale production to benefit from standardized goods; conversely, products are customized and personalized, reaching "production by demand", with quantities not commercially profitable before digital technologies emergence.

Digital technologies are also associated to new products: since firms can produce small amounts for a global market, it is easier "to experiment" and innovate with new products without being conditioned by scale returns.

Finally, marketing and commercialization are also "digital", using technological advances in internet, apps, social media, big data… Digital technology and long tail economy[12] allow to be *small and global* at the same time, something that was impossible in the analogical world.

Secondly, *the blast of digital technologies is at the origin of a new kind of business: digital entrepreneurship*. Digital technologies delineate a new entrepreneurial paradigm with two main features[13]: first, it is strongly focused and/or enabled by the adoption of Internet and digital technologies; second, it is leveraging the innovation potential embedded into large and dispersed groups of individuals. Those entrepreneurs have new values, beliefs and behavioural patterns, oriented not only to personal achievement but also to collective responsibility.[14]

Entrepreneurship can be defined as "the process of identifying business opportunities and exploiting them through the recombination of existing resources or the creation of new ones to develop and commercialize new products and services"[15], and also "the dynamic process of vision, change, and creation through application of energy and passion toward the design and implementation of innovative ideas and solutions"[16]. Digital entrepreneurship can be defined as "a subcategory of entrepreneurship in which some or all of what would be physical in the traditional settings has been digitized based on the use of digital media and technologies"[17], or "creating new ventures and transforming existing businesses by developing novel digital technologies and/or novel usage of such technologies."[18] This is also known as cyber-entrepreneurship since it refers to the use of Internet and technology platforms to manage and execute the business operations with customers, intermediaries, or partners,[19] and sell digital products or services across electronic networks.[20] According to the intensity of digital technologies, digital entrepreneurship can be *mild* (a supplement to more traditional models), *moderate* or *extreme* (the entire venture is digital).[21]

Giones&Brem (2017) propose a conceptualization and characterization of three different phenomena related to technology, entrepreneurship and digitalization: technology entrepreneurship; digital technology entrepreneurship and digital entrepreneurship. These three classifications are summarized in Table 1.

TABLE 1
ALTERNATIVE FORMS OF TECHNOLOGY AND DIGITAL ENTREPRENEURSHIP

Tipology	Technology Behind the Opportunity	Key Activities in the Process	Access to Resources and Funding	Examples
Technology entrepreneurship	New products based on breakthroughs in research; science-based advances through specific knowledge in an academic field Example: Graphene	Technology proof of concept; first customer validation; activate a global but niche market (Clarysse et al 2011)	Public research grants and other soft money sources Venture capital attracted by promising intellectual property (Audretsch et al 2012;Giones&Miralles 2015)	Fractus Oryzon Genomics Rust patrol
Digital Technology Entrepreneurship	New products based on ICT technologies but not only; making smart devices using the possibilities of Internet of Things Example: Smartphone	Use of existing technologies; market validation, traction and growth, scalability	Business angels, seed and Venture capital; stock market. Crowdfunding: reward and equity (Gedda et al 2016)	Go Pro Fitbit Tesla
Digital Entrepreneurship	New products and services based on the Internet. Services running only in the cloud; using big data or artificial intelligence Example: Snapchat	Technology as an input factor; high growth ambitions (Wallin et al 2016); stay ahead of competitors; be the dominant player in the category	Business angels, seed and Venture capital; stock market. Equity crowdfunding (Tomczak &Brem 2013)	AirBnb Just Eat Dropbox

Source: Giones&Brem (2017), pages 45 and 46

Innovation is an essential part of digital entrepreneurship. The European Commission defines this last concept as follows: *"Digital entrepreneurship is about putting digital technologies at the heart of business and harnessing their power to generate value and growth,* ***innovate*** *and create jobs. It embraces the digital transformation of businesses from all sectors, as well as the creation of new digitally driven companies, through the use of digital technologies (social technologies, mobile, big data, and cloud solutions)* ***to innovate*** *and improve the performance.*[22]*"*

If we look to the last column of Table 1, we can see that:

- AirBnB is a commercialization innovation, but also a process innovation, since it generates a new housing commercialization process, and a product innovation, introducing into the market a new good: private living places accommodation.
- JustEat is a process and commercialization innovation. Process because it universalizes a way of food distribution using new technologies to take the orders: take away was used by pizza or

burgers but not an alternative to traditional restaurants. Now employing JustEat we can demand food from any restaurant, even those with Michelin stars.

- Dropbox is a paradigmatic process innovation converted in a product innovation.

DATA

Data we use in this study come from the Survey of Strategic Behavior of Firms (ESEE)[23], carried out by *Fundación SEPI* for the Spanish Economics, Industry and Competitiveness Ministry. This is an annual survey from 1990 to present. It analyses Spanish manufacturing firms' variables to reach a deep knowledge about their strategic behavior. To define the sample of firms ESEE employs a double criterium: for big firms -more than 200 employees- it is exhaustive; for small and medium size firms -less than 200 workers- it is a random sample.

In this particular case we use a panel data sample from 2013 to 2016. We work with 1,303 firms with full information. Most of them are small and medium size firms: 1,041 companies, around 80% of the sample; logically, the other 20% is integrated by big firms, 262.

The variables we want to explain are product innovation; process innovation; organization and commercialization methods innovation. All the variables are dichotomic: they assume 1 if there is innovation and 0 if there is not in the period sample. The selection of a four years period is justified because of firms need an extended period to reach innovation results.

Product innovation is defined by ESEE as the inclusion of new components, new intermediate products, new designs or new materials. It is also considered a product innovation if it accomplishes new functions. Process innovation is described as the integration of new equipment, new computer programs linked to industrial processes or new technics and methods of production. Commercialization innovation is referred to significant modifications of products design or packaging and new methods using sales channels, products promotion o prices settings. Finally, organizational innovation is related to new internal practices of work organization or new management methods of the relationships with other firms and public institutions.

The selected explicative variables are related to firm's digitalization, depending on their ESEE availability.

Table 2 includes the distribution of firms depending on the results of the four types of innovation, years 2013 to 2016, for the ESEE sample and disaggregated by firm's size. As we can observe, there is a big difference between firms with less and more than 200 employees: The biggest number of innovating firms, for each type, is concentrated in SMEs firms. This is logical since the assume 80% of the sample; nevertheless, the biggest proportion locates in firms with more than 200 workers, as we can see in figures 1 to 4.

TABLE 2
DISTRIBUTION OF FIRMS DEPENDING ON THE INNOVATION ACTIVITY

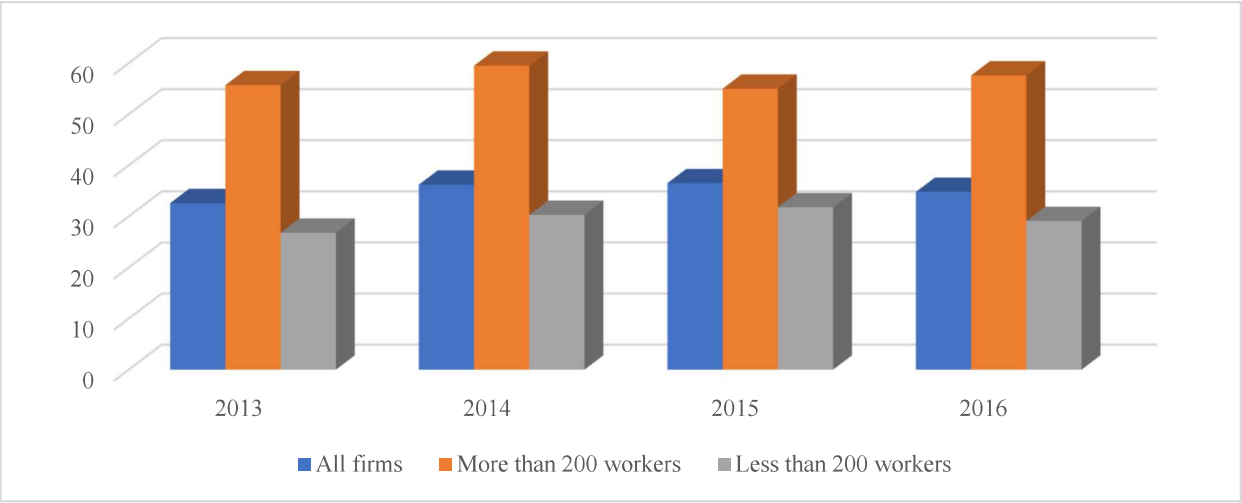
	2013	**2014**	**2015**	**2016**
	Number of firms (share)	Number of firms (share)	Number of firms (share)	Number of firms (share)
ALL FIRMS				
Product innovation	221 (16,9%)	225 (17,2%)	208 (15,9%)	200 (15,3%)
Process Innovation	425 (32,6%)	471 (36,2%)	475 (36,5%)	454 (34,8%)
Commercialization Innovation	263 (20,2%)	259 (19,9%)	223 (17,1%)	229 (17,6%)

Organizational Innovation	275 (21,1%)	272 (20,9%)	260 (20%)	269 (20,6%)
MORE THAN 200 WORKERS				
Product innovation	99 (37,8%)	86 (32,8%)	75 (28,6%)	88 (33,6%)
Process Innovation	146 (55,7%)	156 (59,5%)	144 (55%)	151 (57,6%)
Commercialization Innovation	78 (29,8%)	81 (30,9%)	69 (26,3%)	69 (26,3%)
Organizational Innovation	95 (36,3%)	87 (33,2%)	84 (32,1%)	98 (37,4%)
LESS THAN 200 WORKERS				
Product innovation	122 (11,7%)	139 (13,4%)	133 (12,8%)	112 (10,8%)
Process Innovation	279 (26,8%)	315 (30,3%)	331 (31,8%)	303 (29,1%)
Commercialization Innovation	185 (17,8%)	178 (17,1%)	154 (14,8%)	160 (15,4%)
Organizational Innovation	180 (17,3%)	185 (17,8%)	176 (16,9%)	171 (16,4%)
Source: Own elaboration using ESEE data				

FIGURE 1
PRODUCT INNOVATION. SHARE OF FIRMS

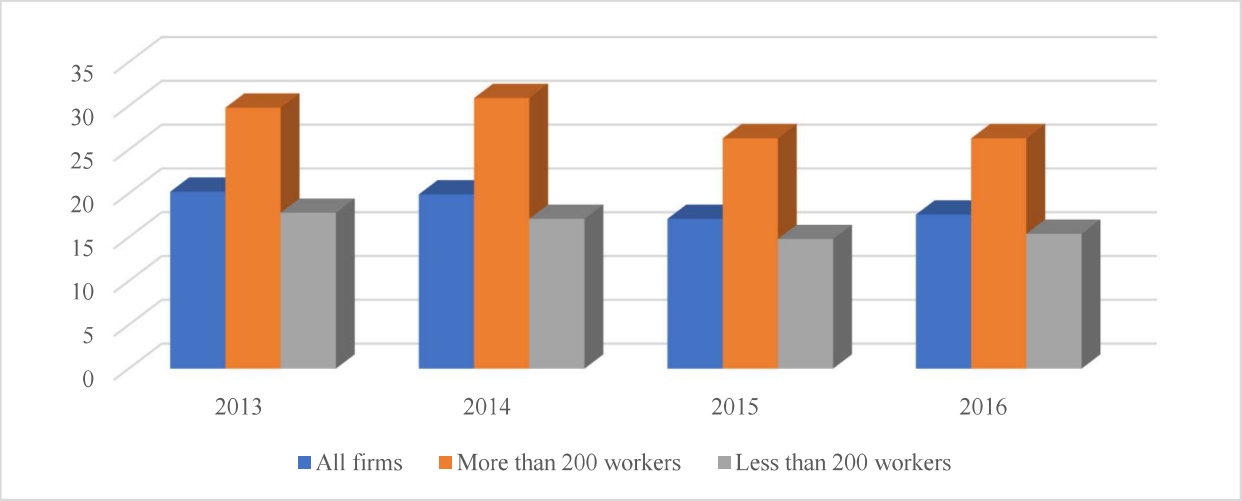
Source: Own elaboration using ESEE data

FIGURE 2
PROCESS INNOVATION: SHARE OF FIRMS



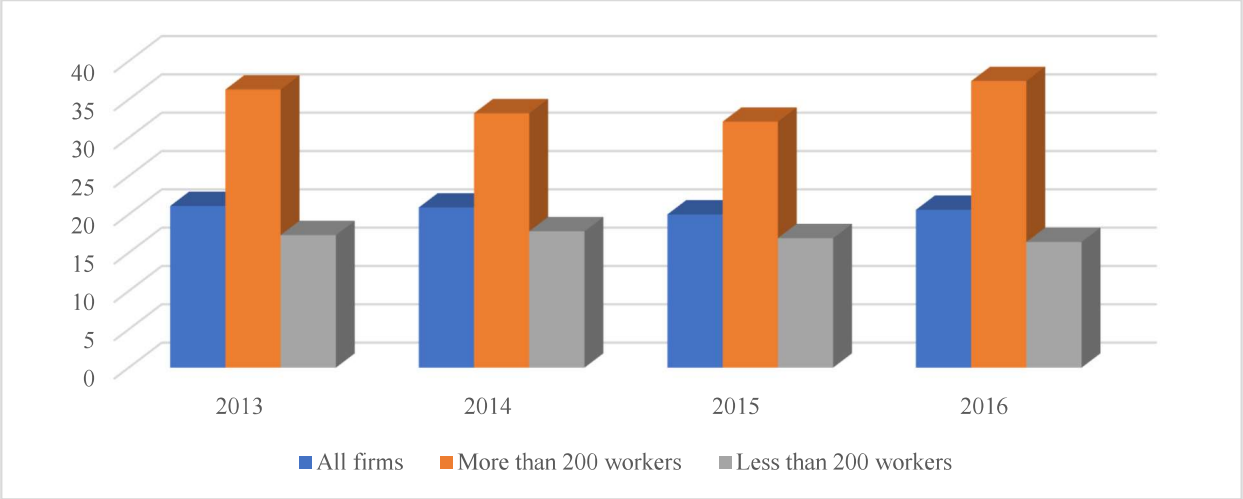
Source: Own elaboration using ESEE data

FIGURE 3
COMMERCIALIZATION INNOVATION. SHARE OF FIRMS.



Source: Own elaboration using ESEE data

FIGURE 4
ORGANIZATIONAL INNOVATION. SHARE OF FIRMS



Source: Own elaboration using ESEE data

ESTIMATION

The model

We estimate a probit model to analyse the influence of digital technologies on innovation activities of Spanish manufacturing firms. The models to estimate the four kinds of innovation are the following:

$$I\_PROD_{it}=\beta_0+ \beta_1 WEBB2B+ \beta_2 WEBB2C+ \beta_3 WEBCOM+ \beta_4 WEBEMP+ \beta_5 WEPRO+ \beta_6 WEBVEN+\mu_{it} \quad (1)$$

$$I\_PROC_{it}=\beta_0+ \beta_1 WEBB2B+ \beta_2 WEBB2C+ \beta_3 WEBCOM+ \beta_4 WEBEMP+ \beta_5 WEPRO+ \beta_6 WEBVEN+\mu_{it} \quad (2)$$

$$I\_CO_{it}=\beta_0+ \beta_1 WEBB2B+ \beta_2 WEBB2C+ \beta_3 WEBCOM+ \beta_4 WEBEMP+ \beta_5 WEPRO+ \beta_6 WEBVEN+\mu_{it} \quad (3)$$

$$I\_MO_{it}=\beta_0+ \beta_1 WEBB2B+ \beta_2 WEBB2C+ \beta_3 WEBCOM+ \beta_4 WEBEMP+ \beta_5 WEPRO+ \beta_6 WEBVEN+\mu_{it} \quad (4)$$

The data come from a panel data for the period 2013 to 2016. To obtain a better knowledge of firm's innovation activities we differentiate by size: a general model; another one for firms with less than 200 employees and, finally, a sample of equations for big firms. β_i are the parameters and μ_{it} are random shocks for each observation i referred to year t. The description of variables and their values are included in the Endnotes.

It is common that the units of a panel have characteristics that affect the endogenous variable not collected by regressors and maintained constant over time for each unit. Panel data are useful to control some effects that influence endogenous variable but not reflected by exogenous variables of the model. By this way panel data models control unobservable individual heterogeneity[24].

Models with panel data have the advantage of providing more information, more variability, less co-linearity between variables and best accuracy. Finally, they also deliver firms valuable information following their evolution over time, having a more complete knowledge of the problem.

The Estimation

The estimation results for each type of innovation are included in tables 3 to 6.

TABLE 3
PRODUCT INNOVATION PROBIT MODEL

	ALL FIRMS	*+200 workers*	*-200 employees*
WEBB2B	**0,443249****	0,3279012	0,3515895
	(0,1686119)	(0,2808564)	(0,2067165)
WEBB2C	0,179723	0,0634545	0,3117096
	(0,1684552)	(0,3007486)	(0,1989942)
WEBCOM	**0,4469346*****	0,2569104	**0,5175392*****
	(0,1018471)	(0,1998042)	(0,1171881)
WEBEMP	-0,0303905	-0,2295956	-0,1510599
	(0,1095444)	(0,2107486)	(0,1285721)
WEBPRO	0,5605063	0,0800616	0,4385269
	(0,3278523)	(0,6104659)	(0,3954148)
WEBVEN	**0,0971151***	0,0219459	**0,1344198***
	(0,0466078)	(0,0845097)	(0,0546031)
constant	**-5,203579*****	-1,904619	**-5,391015*****
	(0,7817119)	(1,437872)	(0,9356889)
Likelihood Ratio test (u_{it}=0)	1.050,31	285,56	626,73
Probability (u_{it}=0)	0	0	0
Nº of observations	5.212	1.048	4.164
Nº of groups	1.303	262	1.041
Wald test	71,07	0,2980	65,81
*Significant at 95%; ** Significant at 99 %; *** Significant at 99,9% Standard error between parenthesis			
Source: own elaboration			

TABLE 4
PROCESS INNOVATION PROBIT MODEL

	ALL FIRMS	*+200 workers*	*-200 employees*
WEBB2B	**0,2693053***	0,2795897	0,1926261
	(0,134993)	(0,2578445)	(0,1577662)
WEBB2C	-0,011953	0,1151536	-0,0232084
	(0,1358745)	(0,2774248)	(0,1539019)
WEBCOM	**0,3596623*****	0,1574346	0,405284***
	(0,0798964)	(0,185343)	(0,0873973)
WEBEMP	0,097134	-0,2746468	0,0684753
	(0,0834346)	(0,1887021)	(0,0928968)
WEBPRO	**0,5658789***	0,8301997	0,3054902
	(0,24543)	(0,5396382)	(0,2754609)
WEBVEN	**0,118001*****	**0,2106162****	0,0943898*
	(0,0358576)	(0,0779842)	(0,0399466)
constant	**-3,158394*****	-1,528155	-2,905358***
	(0,607204)	(1,281614)	(0,6864111)

Likelihood Ratio test (u_{it}=0)	1.327,06	302,94	877,59
Probability (u_{it}=0)	0	0	0
Nº of observations	5.212	1.048	4.164
Nº of groups	1.303	262	1.041
Wald test	70,65	12,38	65,92
*Significant at 95%; ** Significant at 99 %; *** Significant at 99,9% Standard error between parenthesis			
Source: own elaboration			

TABLE 5
COMMERCIALIZATION INNOVATION PROBIT MODEL

	ALL FIRMS	***+200 workers***	***-200 employees***
WEBB2B	0,3036102*	-0,0548984	0,3265202
	(0,1475811)	(0,3070635)	(0,1719485)
WEBB2C	0,2613661	0,1501432	0,3240883
	(0,146777)	(0,3107471)	(0,1663208)
WEBCOM	**0,4428012*** **	**0,5311462***	**0,4166259*** **
	(0,0907079)	(0,2169525)	(0,0997543)
WEBEMP	-0,1693301	-0,2555171	**-0,2346218***
	(0,0956961)	(0,2250187)	(0,1075101)
WEBPRO	-0,0636091	-1,29096	0.0576775
	(0,304486)	(0,7842532)	(0,3334243)
WEBVEN	**0,0958177***	0,0994121	**0,0989646***
	(0,041526)	(0,0945808)	(0,0462539)
constant	**-3,686558*** **	-1,022034	**-3,855954*** **
	(0,7024555)	(1,680857)	(0,785659)
Likelihood Ratio test (u_{it}=0)	981,04	314,80	642,38
Probability (u_{it}=0)	0	0	0
Nº of observations	5.212	1.048	4.164
Nº of groups	1.303	262	1.041
Wald test	107,46	25,52	83,56
*Significant at 95%; ** Significant at 99 %; *** Significant at 99,9% Standard error between parenthesis			
Source: own elaboration			

TABLE 6
ORGANIZATIONAL INNOVATION PROBIT MODEL

	ALL FIRMS	***+200 workers***	***-200 employees***
WEBB2B	**0,4181479****	0,1565745	**0,4202643***
	(0,1429343)	(0,2662335)	(0,1695556)
WEBB2C	-0,1131045	0,0348006	-0,126406
	(0,1506347)	(0,2842334)	(0,1754561)
WEBCOM	**0,3357587*****	**0,4247757***	**0,3097771****
	(0,865709)	(0,1947633)	(0,0957808)
WEBEMP	0,509039	-0,0591811	-0,0138977
	(0,0901972)	(0,1924432)	(0,1025837)
WEBPRO	0,1632665	0,5738699	-0,1081054
	(0,2758279)	(0,5731557)	(0,3174278)
WEBVEN	0,0035443	-0,0841911	0,0362982
	(0,0396681)	(0,0803922)	(0,0451802)
constant	**-3,283985*****	-2,511042	**-2,975434*****
	(0,6728876)	(1,361749)	(0,7768272)
Likelihood Ratio test (u_{it}=0)	1.024,38	293,34	655,11
Probability (u_{it}=0)	0	0	0
Nº of observations	5.212	1.048	4.164
Nº of groups	1.303	262	1.041
Wald test	56,31	7,26	52,65
*Significant at 95%; ** Significant at 99 %; *** Significant at 99,9% Standard error between parenthesis			
Source: own elaboration			

Product Innovation

For all firms' sample there are three significant variables: to have their own internet selling system to other firms; internet supplier's buying strategy and direct and indirect effect of internet over firm's sales. Those two last variables are also significant for SMEs' sample, while no one is significant for bigger firms.

To have an internet selling structure to other firms or simply to be present in internet increases the probability to introduce a product innovation, since the inevitability to differentiate and cope with concurrence. In fact, online sells are a very competitive market and, at the same time, a big opportunity for many firms to augment market share without incurring in high costs, especially for small and medium size enterprises. Moreover, the bigger the influence of internet on sales the bigger the probability of product innovation.

On the other side, internet strategy of buying products or services to providers also increases the probability of product innovation. Internet can improve the fluency of the relationships with suppliers, who can adapt their components and materials included in the product leading to innovations or even new products.

On the other side, it seems strange the no significance of the relationship between consumers' commercialization via internet and product innovation. Nevertheless, we must remember that ESEE sample concentrates on Spanish manufacturing firms, and most of them don't have any direct relation with consumers.

Process Innovation

For all firms' sample there are four significant variables: to have their own internet selling channels; internet supplier's buying strategy of products or services, to have their own website and direct and indirect relevance of internet over firm's sales. For SMEs the significant variables are the same as for innovation product; for big firms the last variable is significant.

To have their own internet channels to sell products to other firms also increases the probability of process innovation. Equally, buying via internet raises this kind of innovation. Either way, it looks like the firm modifies its productive process to adapt to those purchase/sale internet systems. At the same time, the bigger the relevance of internet on sales the bigger the probability of process innovation. Finally, to have its own website raises the probability of process innovation for all firms, but it is not significant when we differentiate by size. This can be since this variable is related to brand identification, business prestige and other marketing characteristics not so important for the production process.

Commercialization Innovation

For all firms' sample there are three significant variables: to have their own internet structure to sell to other firms; internet supplier's buying strategy of products or services and direct and indirect significance of internet on firm's sales. The last two variables are also significant for SMEs' sample. Additionally, the variable related to have its own web hostage is significant for this group of firms. Internet supplier's buying strategy of products or services is significant for bigger firms.

Internet supplier's buying strategy of products or services increases the probability to commercialization innovation in all three samples. Commercial relationships with providers improve some aspects related to product commercialization. At the same time, the probability of commercialization innovation increases when the firm has an internet selling system to other firms and with the relevance of internet on firm's sales. Internet is an opportunity to reach different markets, which means, at the same time, to compete with a bigger number of enterprises. Commercialization innovations facilitate the accommodation to different markets and product differentiation to cope with concurrence in a global market.

Finally, in SMEs firms the probability of commercial innovation increases when the firm hostsits website in external servers. To have its own web hosting implies an elevated cost due to periodic maintenance and security. A specialized server could be more secure and cheap, increasing the capacity to improve firm's products commercialization.

Organizational Innovation

There are two significant variables for the whole sample and for SMEs: to use own internet channels to sell to other firms and internet supplier's buying strategy of products or services. This last variable is also significant for firms bigger than 200 workers.

External relationships via internet with other firms, providers and clients can be associated to firm's organizational improvements due to better knowledge management and reaching higher efficiency.

CONCLUSIONS

In this article we have analysed how digital entrepreneurship influences the innovation activity of Spanish manufacturing firms. Three variables have shown to be significant in product and process innovation as well as in commercialization innovation and organizational methods for all firms and the SMEs' sample: to use own internet channels to sell to other firms; internet supplier buying strategy and direct and indirect relevance of internet on firm's sales.

On the other side, we have verified that Spanish small and medium size firms -firms with less than 200 employees- and big firms -more than 200 workers- behaviour is very different related to digital tools: meanwhile internet plays a very relevant role for SMEs, it is not so important for bigger ones.

Finally, a variable that should be very important in the relationship between innovation and digitalization, at least theoretically, to have an internet organisation to sell to final consumers is not

significant in any estimation. The fact that the ESEE firms' sample is concentrated in specific Spanish manufacturing sectors not directly related to consumers could be an explanation.

The article shows that digital entrepreneurship is a relevant explaining factor of all kinds of innovation. Therefore, Spanish firms need to emphasize the development and access to digital technologies, especially SMEs, if they want to obtain competitive advantages, adapting to the Fourth Industrial Revolution context and competing with success in the global economy.

ENDNOTES

1. Survey of Strategic Behavior of Firms
2. Mobile services, social media, cloud computing, Internet of things, big data, etc.
3. Markus and Loebecke (2013), Elia et al (2020)
4. Bharadwaj et al. (2013)
5. Schwab (2016), Garvanova (2019)
6. Lyytinen et al. (2016)
7. Tiwana et al. (2010)
8. Aldrich (2014)
9. Ekbia (2009)
10. Kuester et al. (2018)
11. Schumpeter (1042)
12. Anderson (2006)
13. Elia et al (2020)
14. Garvanova, Shishkov& Janssen (2018); Garvanova&Shishkov (2019) and Garvanova (2019)
15. Hitt et al (2001)
16. Kuratko (2016)
17. Davidson and Vaast (2010)
18. European Commission (2015), page 1; Zhao and Collier (2016); Shen et al (2018)
19. Shabbir et al. (2016); Ismail et al. (2012)
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22. EuropeanCommision (2015), page 14. Emphasisadded
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APPENDIX

Variables of the model
I_PROD$_{it}$ – Product Innovation. Takes value 1 if the firm has introduced product innovation during the period; it values 0 on the contrary. ***I_PROC$_{it}$*** - Process Innovation. Takes value 1 if the firm has introduced product innovation during the period; it values 0 if it has not. ***I_ICO$_{it}$*** - Commercialization Innovation. Takes value 1 if the firm has introduced product innovation during the period; it values 0 on the contrary. ***I_IMO$_{it}$***–Organizational Innovation. Takes value 1 if the firm has introduced product innovation during the period; it values 0 if it has not. ***WEBB2B*** –Categorical variable indicating if the firm has its own internet structure to sell to other firms. It takes value 1 if not applicable; value 2 if it has not and value 3 if it has. ***WEBB2C*** Categorical variable indicating if the firm has its own internet organization to sell to consumers. It takes value 1 if not applicable; value 2 if it has not and value 3 if it has. ***WEBCOM*** –Categorical variable to show if the firm has its own internet supplier's buying system of products or services. Values are: 1 if not applicable; 2 if not and 3 if it has it. ***WEBEMP*** –If the firm has its own web hosting it takes value 3; if the servers are external values 2; if not applicable values 1. ***WEBPRO*** –It shows if the firm has a website. It takes value 1 if it has and 2 if it has not. ***WEBVEN*** – Direct and indirect relevance internet has on firm's sales. It takes values 0, 1, 2, 3 y 4 from least to greatest significance.