

ASSESSING THE RELEVANCE OF DIGITAL COMPETENCES ON BUSINESS GRADUATES' SUITABILITY FOR A JOB¹

Abstract

Purpose

The purpose of this paper is to examine the role of digital competences in relation to the general competences demanded by the job market in the case of Business graduates' future.

Design/methodology/approach

A telephone survey was conducted with 992 team and HR managers from November 15th to December 15th 2016. The selected respondents were chosen from a sampling frame of 4,880 registered members of a professional association of Business and Economics graduates. Only those admitting to have or having had employees under their command were accountable. Thus, the final sample in the analysis comprised a total of 231 respondents. We used Partial Least Squares (PLS) modeling in order to test the hypotheses.

Findings

The study carried out in the professional field of graduates in Business studies shows us that four (out of the five) dimensions analyzed as digital competences have an influence on the candidate's suitability for the job. They are: Communication, Content creation, Safety, and Problem solving. Instead, when it comes to the variables related to Information this relationship is not observed.

Originality/value

In this research we analyze the digital competences from the perspective of the potential employer. The concept of Digital Competence is increasingly important in recent research. There is a pressing need to match the competences demanded by the companies and those developed at the training centers. Also, prior literature on the role of digital competences in the professional activities of graduates in Economics of Business studies in particular is limited.

¹ To cite this document:

Periáñez-Cañadillas, I., Charterina, J. and Pando-García, J. (2019), "Assessing the relevance of digital competences on business graduates' suitability for a job", *Industrial and Commercial Training*, Vol. 51 No. 3, pp. 139-151. <https://doi.org/10.1108/ICT-09-2018-0076>

INTRODUCTION

Information and Communication Technologies (ICTs) play an important role in the paradigm shift in current and future training. An adequate digital training is at the base of professional training throughout life in any activity sector. The globalisation of companies and of society as a whole makes distance and permanent training more necessary and practical. This leads us to consider digital competences as an essential element.

In the field of research, several institutions have undertaken a number of projects to provide citizens with the necessary tools for a correct acquisition of digital skills within today's society (Ferrari, 2012, OECD, 2012). As Ananiadou and Claro (2009) point out, the OECD's approach to new skills and abilities has been developed mainly through two important initiatives: (1) The Competence Definition and Selection Program (DeSeCo), and (2) The program for International Students Assessment, or Student Assessment Program (PISA). Regarding the former, the OECD proposed the DeSeCo Project as a general framework for the identification of key competences in the face of the challenges of the 21st century. DeSeCo defines the basic competences stating that "Key competences involve a mobilisation of cognitive and practical skills, creative abilities and other psychosocial resources such as attitudes, motivation and values ..." (OECD, 2005, 2018). The DeSeCo project seeks to provide a general framework that will serve as a guide for the long-term extension of evaluations in the new competence domains. However, it goes well beyond establishing professional or educational competences as a guide for training and standards of learning outcomes. Rather, DeSeCo defines a series of competences for life in the broadest sense, i.e. the necessary ones for the proper development of a well-educated citizenry. In this regard, these skills are considered as basic for any individual, with digital competence being only one of the realms.

Now, our empirical study seeks to understand more deeply the role of digital competences in relation to the general competences demanded by the job market in the particular case of the graduates in Business Studies. We propose and test a model developed from the DIGCOMP Project, under the auspices of the Institute for Prospective Technological Studies (IPTS) of the European Commission. Thus, the following section discusses the state-of-the-art in the field of digital competencies. The next section presents the model and its main research hypotheses. The empirical study draws on three qualitative data-gathering processes and a survey. It follows the Partial Least Squares (PLS) procedure to assess the adapted measurement scales and validate the variance-based structural equation model. Finally, we close our research summarizing the main conclusions and implications for management, and offering suggestions for future studies.

LITERATURE REVIEW

Digital literacy involves several essential abilities. Among them, understanding, meaning, and context should be key issues when aiming to foster a person's quality of life (Gilster 1997,-Travieso and Planiella 2008). For its part, the concept of digital literacy emanates from the field of management of information technology, and converges with that of digital competence. Digital literacy favors the use of e-learning, and its influence on academic performance must be taken into account (Mohammadyari, 2015). The individual's personal factors in relation to their digital knowledge affects the acceptance by employees of the electronic learning system and their adaptation to the new tools in the digital field (Cheng, 2011, Holtkamp et al., 2015)

The International Society for Technology in Education (ISTE) develops through different standards, the so-called National Educational Technology Standards (NETS), a framework of digital competence or use of technology, in this case applied to technology learning in Education. ISTE is a non-profit organisation that works with students, teachers and managers from around the world. It analyzes the digital competence "in learning, teaching and leading" by establishing sets of standards as guidelines for different participants in the education process, namely students, teachers, administrators, coaches and computer science educators (ISTE 2018, via www.iste.org, FAQs section). In 2007, ISTE released its National Education Standards for Students (NETS-S). In 2008 the National Education Technology Standards for Teachers (NETS-T) followed. Technology educators put forward a new framework centered on the acquisition of skills and expertise, instead of tools (ISTE Annual Report 2006-2007). ISTE's NETS-S standards "address creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving and decision making, digital citizenship, and technology operations and concepts" (p.3). Eshet-Alkalai and Chajut (2010) analyzed the results of two studies previously conducted in the field of digital competence. First they address the relationship between usability and experience on technologies in an empirical study running from 2004 through 2009. Their results show that abilities such as finding information or interacting in digital environments do not guarantee an adequate or intelligent use of digital environments. For their part, Dubey and Gunasekaran (2015) try to identify and categorize skills in the area of Big Data and Business Analytics (BDBA). They classify these skills in Hard Skills and Soft Skills. Next they propose a theoretical framework for education and training for adequate knowledge in BDBA.

Most of these studies focus on the digital competences of students for education or of teachers in teaching, but not so much on the professional development of graduates in general. Ferrari, Punie and Redecker (2012) define digital competence as a convergence of several types of literacy, namely: ICT literacy, Internet, Media, and Information literacy (p.81). Digital competence is a new type of competence that goes further and involves new components and greater complexity, at the same pace as society is becoming more digitalized (Ferrari et al., 2012).

Another approach in the assessment of digital competences is that of the ICT Digital Leadership Council of the USA, developed in the California ICT Digital Literacy Framework. This framework defines digital literacy as the ability to use ICT for access, management, integration, evaluation, creation and communication of information, for the proper functioning in a knowledge society. It deals with the creation of a model for the evaluation, diagnosis and improvement of digital literacy of students and citizens. In this regard, Somerville et al. (2008) analyzed aspects such as the ability to use technology, communication tools and networks to solve problems in the university field in the USA.

They found that students trained using this framework experienced headway in the solution of problems, were more self-directed, and communicated ideas more efficiently. A few recent reviews are worth mentioning. Esteve (2015) looks at the main frameworks and models for defining digital skills developed up to the time of his revision. Etymologically, no competence can be detracted from its particular professional context. Competences are complex constructs that change through time, adapting to new contexts and needs (p.89). Liisa Ilomäki et al. (2016) provide a thorough review of the most recent policy papers on the concept of digital competence. These authors define digital competence as a set consisting of: (1) technical competence, (2) the ability to use digital technologies in a meaningful way for work, study and in everyday life, (3) the ability to evaluate the digital technologies critically, and (4) the motivation to participate and engage in the digital culture.

Most recently, LeAnn Brown et al. (2018) develop an analytical model of competences based on a case study in a U.S. public institution. A list of competences is defined and the currently required competences are assessed. According to their review of a selection of digital competence frameworks, they propose the following encompassing definition: “Digital Competence is the set of knowledge, skills, attitudes, abilities, strategies and awareness that is required when using ICT and digital media to perform tasks, solve problems, communicate, manage information, behave in an ethical and responsible way, collaborate, create and share content and knowledge for work, leisure, participation, learning, socializing, empowerment and consumerism.” (p.84).

The current research at the Joint Research Center (JRC) focuses on the analysis of digitally competent organisations (DigCompOrg), the study of digital competence in education (DigCompEdu), the definition of policies for the integration of digital technologies in education (DigEduPol), and the exploration of Learning Analytics. In open education (OE), JRC focuses on the supply side, particularly on institutions of higher education, and also on the demand side, on Massive Open Online Course (MOOC) students.

The research by Ferrari (2013) gives way to the DIGCOMP proposal for assessing digital competence for all citizens; see Table 1. Specifically, in our paper we adopt this scale for assessing the effect (if any) of the different areas of digital competence on the suitability of graduates in Business Management for a job.

Table 1. DIGCOM models developed by the European Commission

	Source	Authors	Groups or levels of DC
DIGCOMP	IPTS	Ferrari (2013)	Information, communication, content creation, security and problem solving.
DIGCOMP 2.0	Publication Office of the European Union	Vuorikari, R., et al. (2016)	Information and data literacy, Communication and collaboration, Digital content creation, Safety and Problem solving.

DIGCOMP 2.1	Publication Office of the European Union	Carretero et al. (2017)	Eight proficiency levels and examples of use applied to the learning and employment field.
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DigComp provides a common reference for digital competence in Europe. It aims to help citizens and organisations to identify gaps in digital competence and reflect on how to address them. It also helps policymakers to formulate policies and serves as an inspiration for education and training providers to improve the digital competence of various target groups.

The first version of DigComp was developed under the aegis of the European Commission by the Center for Common Research (CCI) in 2013. From then on, some contributions have been made in delimiting the groups of competences through DigComp 2.0 (Vuorikari et al., 2016) and developing eight levels of achievement for each of the defined competences, as released from DigComp 2.1 (Carretero, 2017).

THE STUDY OF DIGITAL COMPETENCES

Definition of factors of the empirical model

Digital competences in higher education and particularly in Economics or Management studies have been analyzed only recently. In this area, Fernandez, Sanchez-Oro and Robina (2016) indicate there are difficulties, both among university professors in the academy, and among companies, to provide adequate training on these required digital competences.

Digital competences "are at the center of the debate, particularly in what has to do with employability and university curricular design" (Murawski and Bick, 2017). Given the changing nature of specific digital competences, universities should emphasize general or basic digital competences, through integrated learning approaches. To this end, the curriculum should be adjusted based on a better understanding of the relevant digital competences. Precisely, a pertinent question they make is: "Which digital competences are required, e.g. for a specific occupation or role?" (Murawski and Bick, 2017). There is no clear definition of what the competences to teach are, and how these should be acquired by students.

This question, together with the limited existence of works that have analyzed digital competence in a specific professional activity, have prompted us to undertake this research. So far, the most specific studies related to new professions have focused on jobs related to big data or data analyst (Debortoli et al., 2014; Dubey and Gunasekaran, 2015), or in the field of digital marketing (Royle and Laing, 2014). Most of the studies for specific positions are of a qualitative and exploratory nature (Debortoli et al., 2014). In the case of digital competences, gaps in digital marketing skills for professionals in communication companies have been studied (Ghotbifar et al., 2017, Carcelén et al 2017). In a study based on interviews and focus groups, Royle and Laing (2014) recognized the need for a greater approximation of digital marketing approaches to real marketing

practices. Specifically, they highlighted a lack of specific technical skills, namely, the need for a guide on evaluation measures and the skills needed for change and technological development. Some studies show the existence of a gap between industry and training in the field of digital marketing skills in the Communication sector. Brady et al. (2008) point out this aspect, raising the need to bridge this gap. In this sense, we understand that communication skills will be valued in a candidate. We analyze the digital competences in the profession of both the economist and the business manager, from the perspective of the potential employer. Our objective is to analyze the influence that digital competences have on candidates' suitability for the post.

For our study we draw on the results of the aforementioned DIGCOM project. Under the auspices of the Institute for Prospective Technological Studies (IPTS) of the European Commission, starting in 2010, the DIGCOM project team presented a draft proposal for a common framework for Digital Competence (Ferrari, 2012). Among the objectives of the DIGCOMP project are the identification of the key components of the Digital Competence in terms of knowledge, skills and attitudes that are needed to be competent in the use of digital media. These digital competences are structured in 5 areas, namely: (1) Information (INF); (2) Communication (COM); (3) Content development (CD); (4) Security (SEC), and (5) Problem solving (PS). Essentially, these are the five antecedent factors of our model (Figure 1)

A total of 21 competences, grouped in these five areas, are shown in a series of organisational descriptors of three levels. They are related to work, learning, and to leisure and participation in society. In some cases, for our adapted model and empirical study, we have restricted only to those competences concerned to professional skills. We have eliminated the competences referring to aspects of the personal life of citizens, namely, aspects of digital citizenship such as Engaging in online citizenship, or Netiquette. Thus, we identify 13 digital skills to be analyzed in the study (Table 2).

Our goal is to explain how these digital competences influence the candidates' suitability in the jobs market. Prior empirical studies focus on detecting the level of use of pedagogical knowledge, interests, attitudes or degree of professional motivation. For example, the study developed by Pérez (2014) focuses on the content analysis of the selection tests of teaching staff in Finland.

In a previous qualitative empirical study (Periañez, Charterina and Pando 2017), our aim was to find out the competencies that employers point to as determinants in the future of professionals of the economics and business disciplines. More specifically, we analyzed the importance of a series of competences on this suitability, among which the digital ones were a specific group. To this end, we operationalized the construct of candidates' suitability during this qualitative data-gathering process. The process was developed from May to September 2017. It consisted of twelve in-depth interviews to company managers and human resource experts. Secondly, from the ideas gathered during the interview process, we conducted a total of three world cafes, each in a different provincial capital city in the Basque Autonomous Community, in Spain (Periañez, Charterina and Pando 2017). In particular, by counting the most commonly mentioned aspects of suitability for the ideal candidate, we created a series of phrases describing each. These are also described in Table 2.

As seen in the literature review, digital competences are considered as increasingly important elements for new professionals. On the other hand, it is shown that there is a gap between training and the practical needs of digital marketing in some areas such as communication companies. This means that the different areas of digital skills should be valued by professionals who select a candidate as a future economist.

Bearing in mind the relevance of the above mentioned competences, as antecedents of graduates in Business studies as candidate's for a job, we pose the following research hypotheses:

H1: Digital Information competences have a positive effect on the candidate's suitability for the job.

H2: Digital Communication competences have a positive effect on the candidate's suitability for the job.

H3: Digital Content development competences have a positive effect on the candidate's suitability for the job.

H4: Digital Security competences have a positive effect on the candidate's suitability for the job.

H5: Digital Problem Solving competences have a positive effect on the candidate's suitability for the job.

Secondly, our model also analyzes the impact of two relevant factors as mediators of the cause-effect relationships posed in hypotheses 1 to 5. Prior studies analyze the characteristics of the decision maker in the selection process on the candidate's suitability, considering the influence of the company size and the diversity of clients on the candidate's suitability, particularly in the case of immigrant candidates (Fernando et al., 2016). Firms need to invest heavily in the selection, appraisal, rewards and development of their human resources (Tichy, Fombrun and Devanna, 1981). Larger firms tend to invest more resources in order to perform these tasks, resulting in a higher preference for internal training and promotion of inexperienced but potentially outstanding candidates. Thus, it is plausible to assume that firm size has a far-reaching conditioning effect on the required competences in a selection process. Besides, there is some evidence that large firms are more competent at attracting and retaining talented people (Hiltrop 1999).

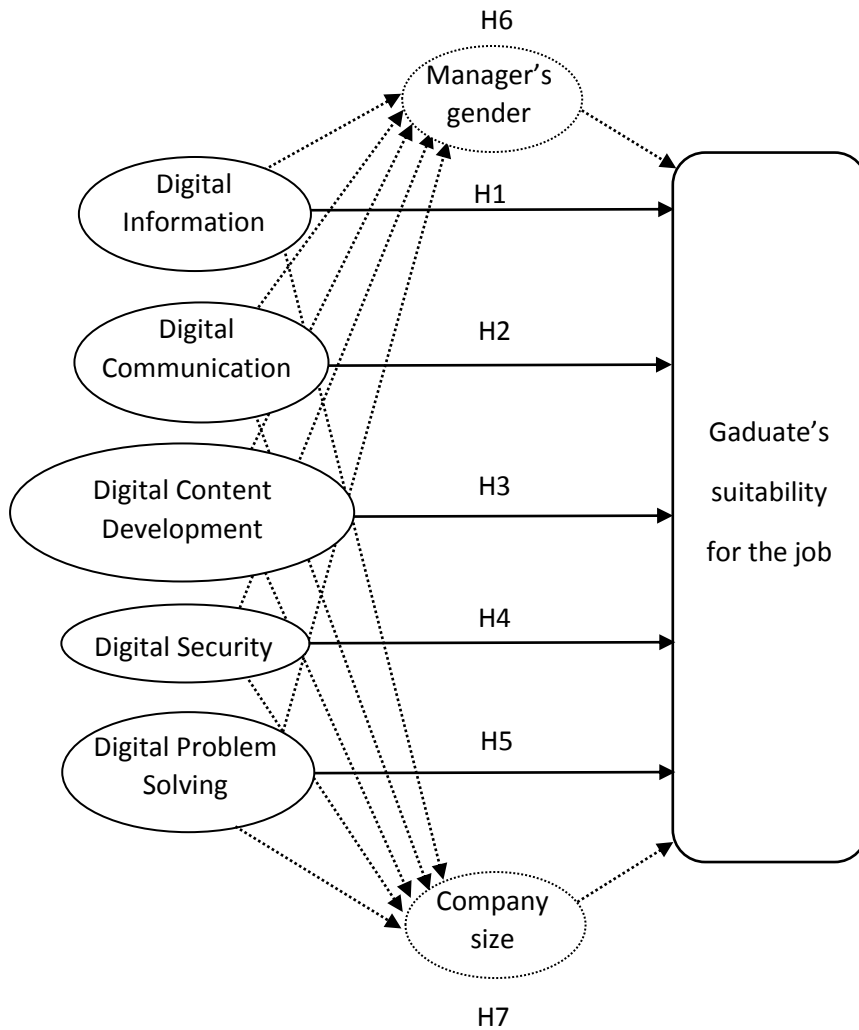
On the other hand, there is past evidence suggesting the conditioning effect of manager's gender on employees' performance or working, and noticeably, their salary (Becker 1971, Hultin and Szulkin 2003, Hultqvist 2014). Bearing these conditioning effects in mind, we pose the following hypotheses:

H6: The manager's gender mediates in the effects of digital competences on the candidate's suitability for the job.

H7: Size of the firm mediates in the effects of digital competences on the candidate's suitability for the job.

Figure 1 below displays these effects. Both the surveyed manager's gender and the company size are taken as control factors, and their mediation effects needs to be assessed.

Figure 1. Proposed model



Note: Dotted lines express mediation effects by Company size or Manager's gender

QUANTITATIVE EMPIRICAL RESEARCH

Preparation of the survey

A telephone survey was conducted with 992 team and HR managers from November 15th to December 15th 2016. The selected respondents were chosen from a sampling frame of 4,880 registered members from a professional association of Business and Economics graduates, all of them having belonged to it for least 7 years. This threshold was taken as a proxy for seniority. The rate of valid, completed interviews was 40.4%, totaling 401 respondents. From these respondents, those admitting to have or having had employees under their command were accountable. Thus, the final sample of the analysis comprised a total of 231 respondents. Their composition is shown in Table 1:

Table 1. Main descriptive values of the sample.

Gender and Company size		Micro-businesses (less than 10 employees)	Small & Mid-sized businesses (10 to 249)	Large businesses (250 or more)
		Males (131) Females (100)	34 (14.7%) 27 (11.7%)	70 (30.3%) 61 (26.4%)
Respondent's job rank	Self-employed	31 (13.4%)		
	Top Manager	107 (46.3%)		
	Mid-level manager	70 (30.3%)		
	Employee	18 (7.8%)		
	No Answer	5 (2.2%)		
Respondent's experience	1 st Quartile	15 years or less		
	Median	21.5 years		
	3 rd Quartile	28.5 years or more		
Company sector	Manufacturing	54 (23.4%)		
	Auditing services	106 (45.9%)		
	Public institutions	17 (7.4%)		
	Education	12 (5.2%)		
	Bank & Insurance	15 (6.5%)		
	Other Services	10 (4.3%)		

Reliability and validity of data

To analyze the scales used for measurement, we calculate the Cronbach's alpha (1951), average variance extracted (AVE) and construct reliability measures. The candidate's suitability construct scores an AVE of less than 0.5 although the rest of reliability measures are acceptable. Also, the Digital security factor shows a Cronbach's alpha value of less than 0.7. However, the rest of reliability measures are correct.

At the same time, according to Fornell and Larcker's (1981) criterion, discriminant validity results give values that are good, as the square root of AVEs (along the principal diagonal of Table 3) are greater than the covariance measures (off-diagonal values in the same row and column) in all cases.

Table 2. Construct Reliability and Validity

	Standard loadings	t values	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Communication COM1: Interact through new technologies COM2: Be able to exchange information and content COM3: Use correctly digital channels (blogs, social networks ...) respecting the interests of the company	0.853 0.860 0.763	37.296* 37.251* 18.762*	0.766	0.769	0.866	0.683
Content Development CD1: Develop digital content in the workplace (presentations, texts, spreadsheets, tables, etc.) CD2: Capture information already prepared by other people and integrate it as a working material with new content CD3: Knowledge about the intellectual property of digital content	0.825 0.828 0.798	32.118* 28.763* 25.115*	0.751	0.751	0.858	0.668
Information: INF1: Search and filter information on the Internet INF2: Be able to assess the interest of information INF3: Know how to store and retrieve information	0.859 0.822 0.750	36.239* 27.827* 15.791*	0.740	0.751	0.852	0.659
Security SEC1: Knowledge about protection devices (antivirus, data encryption, safe internet use, etc.) SEC2: Be careful in the use of personal data, both from clients and from other people in the company	0.955 0.563	50.270* 6.386*	0.452	0.772	0.749	0.614
Problem Solving PS1: Identify deficiencies and know how to solve technical problems in the digital platforms of the company PS2: Detect the needs and the appropriate technological response	0.898 0.908	49.323* 48.243*	0.773	0.774	0.898	0.815
Candidate's suitability CS1: Being an entrepreneur, working autonomously and on a project-basis CS2: Knowledge of web digitalisation and the Internet CS3: Capacity for continuous learning by themselves CS4: International mobility and global vision CS5: Knowledge of big data and data analysis CS6: Knowledge of the new economy, ethical banking, collaborative economy, etc.	0.574 0.701 0.598 0.532 0.759 0.802	9.804* 15.417* 9.512* 7.580* 18.038* 27.565*	0.747	0.770	0.826	0.447

Notes: * $p < 0.001$; $\chi^2 = 288.771$; degrees of freedom = 137; Probability Level < 0.001 ; Standardized Root Mean Squares Residual (SRMR) = 0.077 ; Goodness of Fit index (GFI) = 0.886 ; Adjusted Goodness of Fit index (AGFI) = 0.842 ; Root Mean Squares Residual (RMR) = 0.043; Normed Fit Index (NFI) = 0.840; Relative Fit Index (RFI) = 0.800; Incremental Fit Index = 0.909 ; Tucker-Lewis Coefficient (TLI) = 0.884 ; Comparative Fit Index (CFI) = 0.907

Table 3. Discriminant validity results

	(1)	(2)	(3)	(4)	(5)	(6)
1. Communication	0.827					
2. Content Development	0.559	0.817				
3. Information	0.675	0.539	0.812			
4. Security	0.458	0.521	0.498	0.784		
5. Problem Solving	0.417	0.474	0.360	0.528	0.903	
6. Candidate's suitability	0.551	0.633	0.516	0.548	0.520	0.668

Results

We used partial least squares modeling (Vinzi et al., 2010) in order to test the hypotheses outlined in Figure 1. Regarding the hypothesized direct relationships, our results confirm the effects of communication, content development, security, and problem solving on graduates' suitability, as proposed in hypotheses H2, H3, H4 and H5, respectively (Table 4). However, digital information development competence (H1) is not confirmed. In particular, lines describing the direct link as posed from these hypotheses result in significant regression coefficients within the structural equation model, except for H1 (information) for which the coefficient's t value is only equal to 1.399. The sizes of the effects represented in the path coefficients were obtained using a bootstrapping procedure with 10.000 subsamples, a measure that is above the minimum recommended size (Hair et al. 2017). In view of the sizes of significant effects, we claim that the largest direct effect is determined by digital content developmental competences, followed by digital problem solving, digital security and digital communication (Table 4).

Table 4. Direct and Specified Indirect effects

	Direct and Specified Indirect effects	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)
H1	Information -> Candidate's Suitability	0.096	0.069	1.399
H2	Communication -> Candidate's Suitability	0.173	0.076	2.215*
H3	Content Development -> Candidate's Suitability	0.297	0.072	4.095***
H4	Security -> Candidate's Suitability	0.159	0.066	2.416*
H5	Problem Solving -> Candidate's Suitability	0.197	0.058	3.425**
H6	Information -> Gender -> Candidate's Suitability	-0.002	0.010	0.197
	Communication -> Gender -> Candidate's Suitability	-0.008	0.010	0.801
	Content Development -> Gender -> Candidate's Suitability	0.029	0.016	1.820
	Security -> Gender -> Candidate's Suitability	0.016	0.011	1.438

	Problem Solving -> Gender -> Candidate's Suitability	-0.009	0.009	1.000
H7	Information -> Company Size -> Candidate's Suitability	-0.012	0.012	0.986
	Communication -> Company Size -> Candidate's Suitability	-0.002	0.011	0.216
	Content development -> Company Size -> Candidate's Suitability	0.003	0.011	0.352
	Security -> Company Size -> Candidate's Suitability	-0.011	0.011	1.072
	Problem Solving -> Company Size -> Candidate's Suitability	-0.007	0.010	0.667
	Information -> Gender	-0.017	0.092	0.216
	Communication -> Gender	-0.086	0.090	0.938
	Content development -> Gender	0.304	0.078	3.862***
	Security -> Gender	0.168	0.080	2.103*
	Problem Solving -> Gender	-0.092	0.075	1.209
	Information -> Company Size	-0.113	0.094	1.195
	Communication -> Company Size	-0.020	0.094	0.232
	Content development -> Company Size	0.034	0.093	0.374
	Security -> Company Size	-0.108	0.089	1.234
	Problem Solving -> Company Size	-0.066	0.084	0.760
	Gender -> Candidate's Suitability	0.096	0.045	2.189*
	Company Size -> Candidate's Suitability	0.108	0.047	2.300*

*p < 0.1; **p < 0.01; ***p < 0.001; ⁽¹⁾ Mediation effect from Size, as hypothesized in H6; ⁽²⁾ Mediation effect from Gender, as hypothesized in H7.

Regarding the mediation effects of size of the firm or the manager's gender, following the procedure outlined in Baron and Kenny (1986) we obtain that there is no change in significance resulting from the comparison of direct effects with total effects (including the direct and indirect paths). In particular, for the case of the only non-significant effect, namely that from information on candidate's suitability, none of the indirect effects of information involving gender or company size as mediators results significant.

For its part, no indirect path defined in hypotheses H6 or H7 results significant (Table 4). This means there are no mediation effects of gender or company size affecting significantly the causal relationships of the defined antecedents on candidate's suitability. In sum, hypotheses H6 and H7 are not confirmed in any of the above mentioned digital competences.

In spite of these results, it is worth mentioning that both size of firm and manager's gender exert a direct influence on candidates' suitability for the job, as it is shown within the last two lines from Table 4. The particular study of each of these effects is not within the scope of our study, and the obtained results are included here for the only purpose of showing completely the sizes of the direct and indirect effects. However, it is worth mentioning that only gender is supposedly affected in a significant way from content development and security. Also, both the surveyed respondent's gender and the company show to have a significant direct link with candidate's suitability. Individually, each of

these two direct effects on candidate's suitability is significant and strong, but not as much as to magnify the indirect causal effects of any of the studied competences, and make these become significant. Hence the non-significant results in any of the paths contained in hypotheses H6 or H7.

DISCUSSION AND CONCLUSIONS

Digital competences are a new concept that includes both generic digital skills and those specific to each occupation, as in the case of the competences for economists and business graduates. Our study shows that four (out of the five) dimensions analyzed as digital competences have an impact on the candidate's suitability for the job. They are: content development, problem solving, security, and communication (ranked in decreasing effect size). However, in the case of digital information, this relationship is not observed. This lack of significance may perhaps be due to the fact that, although the administration of data and information is a necessary competence for every individual in her/his personal life, in a professional environment these tasks are mostly under the responsibility of IT managers or employees. Being this an activity professionally subject to public regulation about data protection in Spain (as in most of the EU countries), it is well beyond the graduates' reach.

Overall, regarding the competences developed at the university there are differences in the opinions of graduates and employers in different fields (Jato et al., 2016). There is also a gap between the perception of students and that from employers on the proficiency of students' skills (Torres-Coronas and Vidal-Blasco, 2015). These results make it necessary to empirically study these competences on a long-sectional basis. This also suggests to us that some of the studied digital competences are clearly beyond the individual handling of data in firms, whereas others may concern more directly the tasks and duties of each employee in his or her work. Such is the case of following basic security measures, or being able to create contents, particularly if these refer to the job.

Digital information development competences have been analyzed in a number of studies, considering their different importance depending on the type of company or sector. For example, Hussain et al. (2010) address the importance of the employability skills of engineering graduates from the perspective of employers. Using a sample of 180 employers in various fields of engineering in Malaysia, their research showed significant differences between the information skills and technological skills acquired by the graduates. These authors conclude that both Information skills and Technological skills show significant differences depending on the type of company, contrary to what happens with basic skills, thinking skills, resource skills, interpersonal skills and personal qualities. They found that the elements of information and technology skills are not demanded by civil engineers, for example, when developing work in the field. Judging from our results and previous literature, overall, we see that the importance of the use of digital information varies depending on the type of sector or the kind of professional.

However, in other studies, the results have been different, as in the field of education and in the digital competence of students. For example, Hatlevik et al. (2015) analyze the factors that explain the difference between the digital competences in high school students

in Norway. Specifically, cultural capital, the integration of languages at home, self-efficacy, the strategic use of information and the average grades of students, all together positively influence the digital competence score of students.

Delving into specialties among graduates in Business studies, our empirical results also show that the new positions in the field of digital marketing are identified with the job position of a graduate in Business. We can see this in relation to the competences of communication and content creation with respect to the candidate's suitability. It is not the same, however, in the case of information competence, which does not seem to relate to the case of Business graduates, in data management or big data, to mention a few tasks. Maybe this is another reason explaining the lack of significance of Digital information handling on candidates' suitability. This is one of the aspects that must be confirmed in future research.

This study gives rise to some practical implications. On the one hand, knowledge of the type of digital competences with which the newly graduates are linked to should lead universities to consider the former as priorities in their curricula. On the other hand, this also poses a challenge for training centers in Business Administration, in order to associate the figure of the economist with that of a professional capable of managing information. This may be important given that, as shown in different studies (Jato et al., 2016), the management of data and information will be a field of future jobs in many companies. Moreover, academic studies on digital competences are being replicated on different professional fields (Colomer et al., 2018).

To finish our conclusions, managers' gender and company size do not appear to give way to significant differences across groups as to establish a variation in the importance of each studied competence on a candidate's suitability. This is an evidence of how universal the defined competences from the DIGCOM scale are. In other words, although both the manager's gender or the size of the company they work for, have some degree of influence on candidates' suitability, this influence is not as big as to alter significantly the antecedent effects of candidates' digital competences on their suitability..

LIMITATIONS AND FUTURE STUDIES

Like any other empirical study, this research is not free of limitations or problems. Firstly, the study is circumscribed to Business and Economics graduates. Comparison with other professions seems required in order to determine the effects or relevance of digital competences on candidates' suitability for a job. Secondly, the used scales were not absolutely reliable. Very particularly, the candidate's suitability construct needs further refinement. In this case, we must admit that the relevance of its constituent items was taken in full in order not to alter the content validity or meaning as ascertained by participant managers in the (exploratory) qualitative phase of our analysis.

Finally, as previously mentioned, in the current business world, digital skills are highly valued, although their measures are subject to changes over time. Future studies should be aimed at a continuous analysis of these items, to achieve a better fit between the digital skills acquired in higher education and those demanded by employers. The differences

spotted in the literature varying by sector, size of companies and the types of profession, make these fields of study of great future interest.

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