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Effect of Digital Literacy on the Use of Digital Technology: Micro-Entrepreneurs in the Creative Industries

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Abstract The present study aimed to analyse the role of digital literacy on the intention to use digital technology by professionals in the creative industries. There is consensus among academic literature and governmental reports that creative activities are essential for economic and socio-cultural development. Therefore, there is a need for ongoing research on these segments of industry, such as how they absorb the impacts of digitalisation and improvements in digital technology in their creative and artistic expression. For this latter research, it is required to go beyond the organisational level since these industries are dynamic segments, mostly composed of micro-entrepreneurs and independent workers. Based on an extensive literature review, relationships between the constructs of digital literacy (DL), subjective norms (SNs), compatibility (CP), self-efficacy (SE), attitude towards use (ATT) and intention to use (INT) digital technology were examined for a sample of 163 European creative workers. Structural equation modelling (SEM) was performed and the results showed that DL significantly affects the intention to use digital technology. Moreover, the SEM results showed that the effects of SNs, SE and CP on the intention to use digital technology are mediated through the ATT. Based on the results, theoretical and practical implications are discussed.

Ključne besede: creative industries, creative economy, digitalization, digital literacy, micro-entrepreneurs.

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1 Introduction

The recognition of the creative industries as a source of social, cultural and economic development is widely acknowledged in the academic and practical fields. Over the last decades, a number of disruptive changes have occurred in these areas driven by digitalisation and ICT improvements, transforming the work processes of many, if not all, segments of industries. For the creative sector, the competencies required of their workforce have shifted drastically from previous generations. Several studies, such as Kamprath and Mietzner, (2015) and van Laar et al. (2020), have pointed out that creative professionals in the 21st century require a mix of technical skills, mostly ICT related, combined with critical thinking, creativity and problem-solving. The creative industries have become a sector in their own right, with a need to search, encounter, identify, access and evaluate relevant information to generate creative and innovative ideas for the digital environment (Martin, 2005); in other words, this sector has a high need for professionals with digital literacy.

It is important to reinforce that these changes do not nullify Florida's (2002) affirmation about the importance of the creative working class as a key factor for economic development, regional clusters and innovative practices. The change is in the set of skills expected from these workers, where creative knowledge-intensive activities are handled as commodities (Heidemann Lassen et al., 2018). This paper contributes to the academic literature by investigating and reporting on the effect of digital literacy on the intention of creative workers to use digital technology. The digital literacy here is related not only with the ability to find and use information in a digital format, but also to the cognitive process of critical thinking and the capacity for knowledge creation (Chan et al., 2015).

Kamprath and Mietzner (2015) reinforce the need for digital skills at the individual level as a requirement for the future work market. In the creative industries, individual capabilities are highly required, not only because these industrial sectors are particularly characterised by the exploitation of individual creativity (Higgs et al., 2008), but also, for the composition of these segments with a large amount of predominantly small-sized-business entrepreneurs and self-employed workers (Oakley, 2009). Creative professionals offer a unique perspective for the studies in digital literacy, whereupon their technological skills are merged with their individual creative expression. Fundamentally the creative sectors are deeply rooted in

innovation development (Müller et al., 2009), but also the creative workforce can be found in other segments of industry too (Cunningham, 2011). Within the European Union, the creative industries employ about 7.5% of the workforce and add around 500 billion euros to gross domestic product (European Commission, 2017).
In order to put this evidence under analysis and in an attempt to measure the effects of the digital literacy of creative workers, this paper examines the engagement and the consistency of use of these professionals with digital technologies, such as software, applications and services used for graphic design, video editing, web development and photography. The research question addressed in this paper is: *How does digital literacy influence the intention to use digital technology in work processes that rely on the expression of individual creativity?*

2 Theoretical Background

In contemporary society, digital technology skills are intrinsically intertwined with all other sets of abilities required in workplaces and in entrepreneurial activities (De Haan, 2010). The interaction with other people, whether in personal or professional terms, is increasingly being arbitrated by the immediatism of digital applications and devices (Mangematin et al., 2014). Future professional activities will require more and more that individuals can demonstrate a range of abilities that cross with ICT skills. Information literacy is a competence that has been crucial for employees in all economic segments over the last few decades. However, never before has information been accessible in the vast quantity that it is today. In the digital age that we live in today, digital technology provides the medium for communication, immensurable information for strategic business decisions and the means for sharing and self-promoting creative and artistic expression (Hoffmann et al., 2016). In addition to information literacy, digital literacy can be defined as "the ability to understand information and – more importantly – to evaluate and integrate information in multiple formats that a [digital device] can deliver" (Gilster as cited in Pool, 1997, p. 6).

Professionals from creative industries are one of the most meaningful subjects for this research due to their close relationship with creativity, innovation and digital technologies. Previous studies support the intense fluency in digital literacy and capabilities in the use of digital technology that creative workers have and require (van Laar et al., 2019; Nikou et al., 2020). Creative products and services are complex

and are constantly facing imminent risks from a volatile and trend-dependent market (Caves, 2000; Steiner & Prettenthaler, 2015). It is this scenario that drives the creative economy to adhere to new technologies, where knowledge creation is a requirement for the constant renewal of skills imposed on these segments (Kamprath & Mietzner, 2015). Still, more and more organisations are developing work that can see them included in the range of creative industries, by creating new ideas for their segments, generating knowledge and originating new methods to be used as a product or service. Future jobs tend to require a combination of creative content and digital technologies skills (van Laar, 2020). Digitalisation has extreme importance in providing digital environments that support and promote creative work, thus enforcing the importance of digital literacy skills for creative professionals. The empowerment provided by digital technology development is the driving force propelling the creative workforce to seek and maintain digital literacy skills.

3 Hypotheses Development

To measure the effect of digital literacy on the intention of creative professionals to use digital technology, a conceptual model was developed utilising determinants from the conventional theoretical models and the previous academic literature. This paper starts from the assumption that these constructs may have a direct or indirect impact on the intention to use digital technology that may support somehow the effect inflicted by digital literacy. The construct applied here was identified from precedent studies on the use of digital technologies, especially the Decomposition Theory of Planned Behaviour (DTPB) by Taylor and Todd (1995) and the User Acceptance of Information Technology Towards a Unified View (UTAUT) by Venkatesh et al. (2003). The constructs applied here attempt to expand the understanding of the behavioural patterns of the subject in the adoption and use of technology. The theory-based conceptual model presented in this paper is primarily based on the construct factors of these two models: DTPB and UTAUT. In particular, we applied subjective norms (SNs), self-efficacy (SE), compatibility (CP) and attitude towards use (ATT) in addition to digital literacy (DL). The dependent variable in this paper is the intention to use (INT) digital technology. The aforementioned determinants are considered critical in explaining the intention to use digital technology, but, to the best of the authors' knowledge, there has been no study to date in which all these constructs have been modelled together. The conceptual model of this paper can be seen in Figure 1, and the following

subsections explain each of the assumed relationships in light of previous findings from the literature.

For the digital literacy construct, we used the "Digital Native Assessment Scale" (DNAS) proposed by Teo (2013). DNAS was validated and statistically tested to measure the competence level of digital literacy based on the characteristic of digital natives proposed by Prensky (2001). However, it should be noted that other frameworks, such as the EU Digital Competence Framework (Carretero et al., 2018), could be used as an alternative measurement tool. The use of such a framework relies on the availability of the data collected with the subjects under the analysis.

3.1 Subjective Norms

Subjective norms (SNs) refer to the degree of interference of other individuals in the decision-making of the study subject regarding their intention to use a technology (Taylor & Todd, 1995). Its concepts are similar to the "social norms" construct (Davis et al., 1989; Thompson et al., 1991) and the "social influence" construct (Venkatesh et al., 2003). We assumed here that SNs influence the creative professional's behaviour in how others will see the result of their interaction with technology (Venkatesh et al., 2000). SNs influence decision-making in a complex way and are susceptible to a variety of contingent influences (Venkatesh et al., 2003). Previous academic studies suggest that SNs have a greater influence when others have the power to reward or punish an individual's behaviour (Warshaw, 1980). Such statements are also supported by studies related to technology adoption, assuming that SNs are significant in compulsory contexts (Taylor & Todd, 1995; Venkatesh et al., 2000; Venkatesh et al., 2003). This research assumed that the social pressure exerted by SNs influence the attitude of creative workers towards the use of technology; thus the first hypothesis:

H1. Subjective norms have a significant effect on attitude towards using.

3.2 Compatibility

Compatibility (CP) refers to the degree by which the technological tool fits into the individual's reality, adapting to their values, past experiences and current needs (Taylor & Todd, 1995). Compatibility has been proven to be a factor that can influence the attitude towards the use of technology. Such influence is supported by the theoretical DTPB model (Taylor & Todd, 1995). This construct is part of the decomposition of attitudinal beliefs, whereby, according to Taylor and Todd (1995), as attitudinal beliefs tend to increase, the attitude towards the use of technologies tends to be more positive. Thus, the literature supports that compatibility has an effect on how individuals position themselves regarding their intention to use digital technology. Particularly in this paper, we assume that the fit between digital technology and creative professionals' needs and the nature of their work influences the attitude of creative workers towards the use of technology; thus the second hypothesis:

H2. Compatibility has a significant effect on attitude towards using.

3.3 Self-Efficacy

Self-efficacy (SE) refers to an individual's judgment regarding their ability to organise and execute actions in prospective situations (Bandura, 1982). Based on social cognitive theory, in an agentic perspective, Bandura (1982) argues that individual characteristics, such as personality, situation, environment and behaviour, reciprocally affect each other. The author also states that self-efficacy is a facilitator that drives action, considering that it increases motivation, strengthens resilience in the face of adverse experiences and reduces anxiety (Bandura, 2010). Reaffirming Bandura's states, other studies, such as Vijayasarathy's (2004), have assumed that an individual's likelihood of engaging in a particular behaviour is closely related to the expectations of their ability to perform it. Bandura (2012) states that with each new action that takes place, self-efficacy positively reinforces its relationship with the subsequent action, increasing over time. Compeau and Higgins (1995) made use of self-efficacy within the context of digital technology use. This research assumed that the self-efficacy of creative professionals influences their attitude towards technology use; thus the third hypothesis:

H3. Self-efficacy has a significant effect on attitude towards using.

3.4 Attitude Towards Using

Attitude towards using refers to the affective reaction of an individual when using technology (Venkatesh et al., 2003). The attitude towards using is associated with the individual's liking, joy and pleasure when using technology (Venkatesh et al., 2003). For some cases, the construct may represent the strongest predictor of behavioural intent (Nikou et al., 2019; Venkatesh et al., 2003). More detailed analyses have indicated that attitudinal constructs regarding the use of technology are more significant when the theoretical model considers constructions related to the expectation of effort and performance (Venkatesh, 2000). This research assumes that attitude towards using influences the creative workers' intention to use digital technologies; thus the fourth hypothesis:

H4. Attitude towards using has a significant effect on the intention to use digital technology.

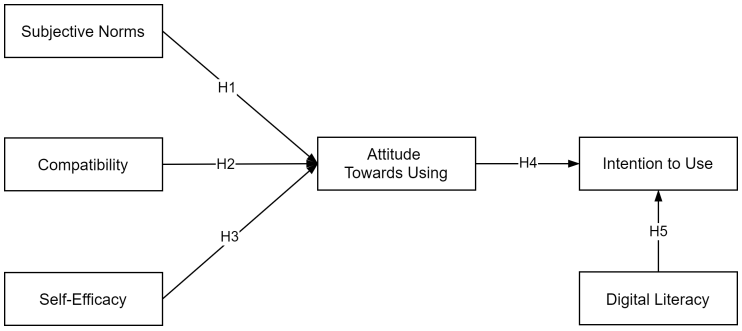

Figure 1: Research model.

3.5 Digital Literacy

Digital literacy refers to the attitude and ability of individuals to appropriately use digital technology to identify, access, generate, integrate and evaluate digital resources, building new knowledge, creating media expressions and communicating with others (Martin, 2005, p. 135). An individual is considered digitally literate when they can demonstrate technical and operational skills to use digital technology in

their daily activities (Ng, 2012). The digitally literate individual should be a critical thinker, who can responsibly make use of the Internet, who can select software appropriate to their needs and use it with the capability to seek and evaluate digital information for learning and performing tasks (Ng, 2012, p. 1068). To better understand the level of digital literacy of the creative worker professionals, this study used the Digital Natives Assessment Scale (DNAS) by Teo (2013). This research assumes that digital literacy directly influences the creative workers' intention to use digital technologies; thus the fifth hypothesis:

H5. Digital literacy has a significant effect on the intention to use digital technology.

3.6 Intention to Use Digital Technology

The intention to use a technology refers to the degree to which an individual would like to use the technology in question in the future (Joo et al., 2018; Nikou et al., 2018). This construct is related to motivational factors, which makes it the most crucial determinant in predicting the decision to take a specific action (Ajzen, 1991). In this research, the intention to use was considered as a dependent variable.

4 Methodology

The methodology employed in this paper focused on developing a better understanding of the influence of digital literacy on the intention of creative workers to use digital technology as part of their work processes. Thereby, a quantitative approach was applied through performing Partial Least Squares Structural Equation Modelling (PLS-SEM) using Smart-PLS software. The PLS-SEM method has been widely applied in academic research focusing on a casual–predictive approach (Hair et al., 2019). It is also considered relevant to perform SEM analysis with forecasting statistical models with the aim of producing casual explanations (Sarstedt et al., 2017). All the constructs used in the present research were used in other academic studies and have been previously tested, thus ensuring the reliability of our data measurement. All our research items used within each construct were also selected from validated measures, undergoing minor wording adjustments by the authors to better fit the context in which this research proposes to perform our analysis, see Appendix 1. Items for measuring subjective norms (n = 5), compatibility (n = 4) and self-efficacy (n = 4) were derived from Taylor and Todd, (1995). The attitude

towards using (n = 5) and intention to use digital technology (n = 5) were derived from Taylor and Todd (1995) and Venkatesh et al. (2003). Lastly, digital literacy (n = 12) was measured with items based on the digital native assessment scale (Teo, 2013). The choice and application of an online questionnaire were based on accessibility and ease of collecting quantitative data, enabling the researchers to perform data measurement efficiently. All the survey items were measured on a 7-point Likert scale from "1 = strongly disagree" to "7 = strongly agree".

4.1 Data Collection

The sample of participants was limited to creative workers who perform their artistic activities through the use of digital technology. Within this group, only micro-entrepreneurs and the self-employed were included. A total of 50 employees in the firm was considered as a delimiting factor for the participation of micro-entrepreneurs in this study, thus representing a small-sized business. This was a strategic decision in order to ensure selecting creative workers that were outside of the reality imposed by large corporations, as the environment imposed by large companies can limit the use of digital technology or it may be dictated by commercial agreements not related to creative professional ability or interest in digital technology. The profiles of these creative workers were found by the exposure of their online portfolio or through online platforms and communities developed for the dissemination of creative work (e.g. Behänce, Dribbble, GitHub, among others). The choice of these professional profiles was random, given the need to include different genres, occupations and national territories within Europe. In July of 2019, a questionnaire was distributed by email invitation to a total of 1486 European creative workers who presented the following characteristics: (i) currently working as a creative worker, positioning oneself as the creator of their own work, (ii) identify oneself as a freelancer, self-employed, start-up, studio or group of independent artists, (iii) the work created by one must be unique, that is, must represent an original perspective that embodies the vision of the creator and (iv) for the cases of micro-entrepreneurs, no signs should be found that the company belongs to or is part of a medium or large business.

5 Data Analysis

A total of 166 questionnaires were returned, resulting in a response rate of approximately 11.5%; however, within that number, 3 participants did not answer the questionnaire properly and were excluded from further analysis. As suggested by Armstrong and Overton (1977), the non-response bias test was performed. The first 25% of respondents were compared with the final 25% of respondents for all survey items using the chi-square test. The result showed that the participants did not differ significantly, thus allowing us to conclude that the answers collected from the sample were not biased. Of the respondents, 66.8% were males, 31.2 % were females, and 1.8% did not mention their gender. Gender unbalances with similar proportions were also reported in recent studies that made use of the same online platforms and communities to showcase creative work as utilised in this study (Hemsley & Tanupabrungsun, 2018; Kim, 2017). The respondents were geographically distributed among 25 countries in Europe, with the majority from Nordic countries. The broad participation of subjects for Nordic countries could be related to the geolocation of the authors. It could be associated with the time zone from where the emails were sent, facilitating their open-rate and consecutively the survey being answered. When we asked whether the respondents had migrated from their original country where they were born, only 30.7% said yes. The majority of the respondents were full-time freelancers (38%), and 32.5% reported that they were full-time employed as an entrepreneur. The majority of the respondents had at least six years or more experience working as an artist or as a creator, see Table 1.

Table 1: Descriptive statistics of the respondents.

Descriptive Statistics	Pooled Sample	Female (%)	Male (%)	Others (%)
Sample Size	163 (100%)	51 (31.2%)	109 (66.8%)	3 (1.8%)
Median Age	34 years	32 years	35 years	33 years
Migrated from the Place of Origin				
Yes - Reside in a different country	50 (30.7%)	17 (10.4%)	32 (19.6%)	1 (0.6%)
No - Reside in the origin country	113 (69.3%)	34 (20.9%)	77 (47.2%)	2 (1.2%)
Level of Education				
High School Diploma	23 (14.1%)	4 (2.5%)	19 (11.7%)	0 (0%)
Bachelor's degree	81 (49.7%)	25 (15.3%)	55 (33.7%)	1 (0.6%)
Master's degree	44 (27%)	22 (13.5%)	20 (12.3%)	2 (1.2%)
Ph.D.	14 (8.6%)	0 (0%)	14 (8.6%)	0 (0%)
Other	1 (0.6%)	0 (0%)	1 (0.6%)	0 (0%)
Employment Type				
Full-time as a freelancer	62 (38%)	22 (13.5%)	40 (24.5%)	0 (0%)
Full-time as an entrepreneur	53 (32.5%)	15 (9.2%)	37 (22.7%)	1 (0.6%)
Part-time as freelancer and entrepreneur.	13 (8%)	4 (2.5%)	9 (5.5%)	0 (0%)
Part-time as a freelancer.	33 (20.2%)	8 (4.9%)	23 (14.1%)	2 (1.2%)
Part-time as an entrepreneur	2 (1.2%)	2 (1.2%)	0 (0%)	0 (0%)
How long have been working as an artist/creator				
Less than 2 years	12 (7.4%)	7 (4.3%)	5 (3.1%)	0 (0%)
From 2 to 5 years	46 (28.2%)	16 (9.8%)	29 (17.8%)	1 (0.6%)
From 6 to 10 years	48 (29.4%)	17 (10.4%)	30 (18.4%)	1 (0.6%)
From 11 to 15 years	29 (17.8%)	5 (3.1%)	24 (14.7%)	0 (0%)
From 16 to 20 years	19 (11.7%)	4 (2.5%)	15 (9.2%)	0 (0%)
More than 21 years	9 (5.5%)	2 (1.2%)	6 (3.7%)	1 (0.6%)

In Table 2 below, it is possible to analyse the self-perception of the respondents regarding their frequency of use and proficiency with creative digital work tools by gender. Female respondents tended to have a higher score on the DNAS than male respondents. However, regarding the level of expertise in digital applications, male respondents tended to score higher than the female respondents regarding all the applications selected for the questionnaire.

Table 2: Respondents' self-perception of their frequency of use and proficiency of creative digital technology.

Descriptive Statistics	Pooled Sample	Female (%)	Male (%)	Others (%)
Sample Size	163 (100%)	51 (31.2%)	109 (66.8%)	3 (1.8%)
Digital Native Assessment Scale (DNAS) 12-Items				
(7-point Likert scale from "1 = strongly disagree" to "7 = strongly agree")				
Grow up with Technology	M = 6.49	M = 6.54	M = 6.46	M = 7.00
Comfortable with Multitasking	M = 6.27	M = 6.31	M = 6.25	M = 6.11
Reliant on Graphics for Communication	M = 4.36	M = 4.66	M = 4.19	M = 5.44
Thrive on Instant Gratifications	M = 4.84	M = 4.99	M = 4.74	M = 5.78
Please indicate how often do you use the following digital technologies (hardware)				
5-point Likert scale from 1 = "I do not use it" to 5 = "several times a day"				
Smartphone	M = 3.94	M = 3.96	M = 3.94	M = 4.00
Smartwatch	M = 1.42	M = 1.41	M = 1.40	M = 2.00
Desktop Computer	M = 3.09	M = 2.75	M = 3.25	M = 3.00
Laptop Computer	M = 3.25	M = 3.51	M = 3.13	M = 3.33
Tablet Computer	M = 2.13	M = 1.92	M = 2.20	M = 3.00
Laptop Tablet Hybrid (e.g., Surface Pro)	M = 1.25	M = 1.10	M = 1.33	M = 1.00
Graphics Tablet (e.g., Wacom Intuos)	M = 2.69	M = 2.61	M = 2.74	M = 2.33
Professional Camera	M = 1.95	M = 1.98	M = 1.95	M = 1.33
Please indicate how often do you use the following digital technologies (software)				
(5-point Likert scale from "1 = I do not use it" to "5 = several times a day")				
Raster Graphics Editor (e.g., Photoshop)	M = 3.60	M = 3.57	M = 3.61	M = 3.67
Vector Graphics Editor (e.g., Illustrator)	M = 2.70	M = 2.90	M = 2.61	M = 2.67
Motion Graphics Editor (e.g., After Effects)	M = 1.71	M = 1.61	M = 1.75	M = 2.00
Video Editor (e.g., Premiere)	M = 1.54	M = 1.33	M = 1.63	M = 1.67
3D Modelling Editor (e.g., Cinema 4D)	M = 1.69	M = 1.47	M = 1.80	M = 1.33
Code Editor (e.g., Visual Studio)	M = 1.33	M = 1.22	M = 1.39	M = 1.00
Team Collaboration App (e.g., Slack)	M = 2.08	M = 2.14	M = 2.06	M = 2.00
Task Management App (e.g., Asana)	M = 1.61	M = 1.65	M = 1.59	M = 2.00
Version Control App (e.g., GitHub)	M = 1.40	M = 1.31	M = 1.46	M = 1.00
Please indicate your expertise level using the following digital technologies (software)				
5-point Likert scale from 1 = "novice" to 5 = "expert"				
Raster Graphics Editor (e.g., Photoshop)	M = 4.31	M = 4.04	M = 4.43	M = 4.67
Vector Graphics Editor (e.g., Illustrator)	M = 3.41	M = 3.35	M = 3.43	M = 3.67
Motion Graphics Editor (e.g., After Effects)	M = 2.09	M = 1.75	M = 2.23	M = 3.00
Video Editor (e.g., Premiere)	M = 2.12	M = 1.73	M = 2.29	M = 2.67
3D Modelling Editor (e.g., Cinema 4D)	M = 2.04	M = 1.69	M = 2.19	M = 2.67
Code Editor (e.g., Visual Studio)	M = 1.45	M = 1.24	M = 1.57	M = 1.00
Team Collaboration App (e.g., Slack)	M = 2.29	M = 2.25	M = 2.32	M = 2.00
Task Management App (e.g., Asana)	M = 1.71	M = 1.71	M = 1.71	M = 2.00
Version Control App (e.g., GitHub)	M = 1.39	M = 1.24	M = 1.48	M = 1.00

5.1 Measurement Analysis

The research model was analysed in two different stages: (a) measurement model assessment and (b) structural model assessment. The assessment of the reliability and validity was achieved through the outer loadings, composite reliability (CR) and average variance extracted (AVE). According to Hulland (1999), the values of the outer loadings should be above .70, here most indicators loaded above, with a few

exceptions under this value. For the CR values, which is the assessment of the internal consistency, only SNs (.68) displayed a value below .70, while the other constructs showed values above. The AVE values for all constructs were above the recommended value of .50 (Bagozzi & Yi, 1988), see Table 3.

Table 3: Reliability and validity.

	Factor Loadings (lowest-highest)	Cronbach's α	CR	AVE
Attitude Toward Using	.74-.89	.84	.90	.68
Compatibility	.74-.88	.79	.87	.70
Digital Literacy	.69-.81	.71	.82	.53
Intention to Use	.68-.83	.78	.86	.60
Self-Efficacy	.80-.85	.85	.90	.70
Subjective Norms	.68-.84	.68	.81	.59

Note: CR = Composite reliability; AVE = Average variance extracted.

For the discriminant validity, we used the square root of AVE for each latent variable to establish the discriminant validity (Fornell & Larcker, 1981). All the values were higher than the other correlation values among the latent variables, with the values shown in bold on the diagonal in Table 4.

Table 4: Discriminant validity.

	ATT	CP	DL	INT	SE	SN
Attitude Toward Using	**.83**					
Compatibility	.66	**.84**				
Digital Literacy	.42	.52	**.73**			
Intention to Use	.77	.60	.51	**.78**		
Self-Efficacy	.62	.71	.56	.57	**.83**	
Subjective Norms	.51	.37	.26	.43	.35	**.77**

5.2 Structural Analysis

The SmartPLS software was used to assess the significance of the relationships between the constructs in the model. The SEM results showed that the intention to use digital technology was explained by a variance of almost 63%. The construct attitude towards using digital technology was explained by a variance of 54.5%. The PLS-SEM analysis showed that the attitude towards using (ATT) digital technology had a strong effect on the intention to use digital technology ($\beta = .67$, $t = 10.13$, $p < .001$). The impact of digital literacy (DL) on the intention of creative workers to use digital technology was significant ($\beta = .21$, $t = 2.74$, $p < .010$). Therefore, hypotheses **H4** and **H5** were supported by the model. The relationships between social norms

(SNs) (β = .27, t = 3.91, p < .001), compatibility (CP) (β = .24, t = 4.18, p < .001), and self-efficacy (SE) (β = .26, t = 2.84, p < .05) on the attitude towards using digital technology were found to be significant. Respectively, **H1**, **H2** and **H3** were supported by the model. The results can be seen in Figure 2.

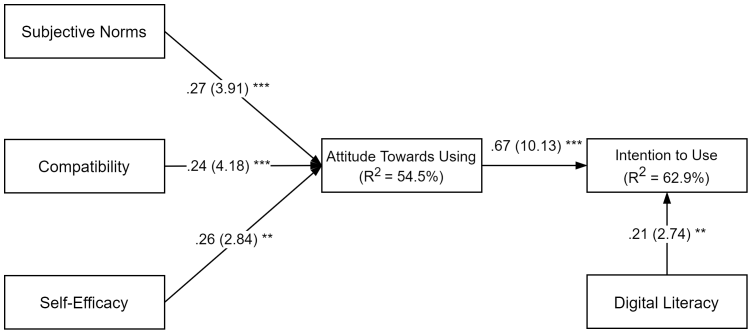

Figure 2: Structural model results.

5.3 Multigroup Analysis (MGA)

The scores on the Digital Native Assessment Scale (DNAS) (Teo, 2013) were used to classify the respondents into two groups: high score and low score. Due to the high average score found among the respondents, we performed the DNAS analysis in a mean-split of the registered score, the high score group (above the mean; n = 93) and the low score group (below the mean; n = 70). The MGA results showed that the main difference between these groups was the path relationship between the SE (β = .19, t = 1.49, p > .001) and the attitude towards using digital technology, such that this path was not significant for the high score group. It can be presumed that SE had a decreasing effect on ATT for those with higher digital literacy level. In the MGA for groups divided by gender, the female participants showed many distinguished path relationship differences. The most meaningful was the path between digital literacy and the intention to use digital technology, which was not significant for females, but it was for males. The significant difference between females and males regarding the digital literacy path requires an in-depth investigation, which unfortunately, the analysis of these constructs alone cannot fully explain. Another interesting group that was possible to explore was that related to the Nordic countries' citizens (n = 73) in comparison with non-Nordic countries citizens (n = 90). For Nordic countries citizens, the path between CP to the attitude

towards using digital technology was not significant. While for those respondents that were not Nordic countries citizens, the SE effects on their attitude towards using digital technology were not significant. Similar results were found on the high score group as classified by DNAS.

5.4 Mediation Analysis

A mediation analysis was performed to better understand if the construct attitude towards using digital technology mediated the path relationship between subjective norms, compatibility, and self-efficacy with the intention to use digital technology. The results of the specific indirect effects showed that the effects of SNs ($\beta = .18$, $t = 3.40$, $p < .05$, CP ($\beta = .24$, $t = 3.83$, $p < .001$) and SE ($\beta = .17$, $t = 2.80$, $p < .05$) on the intention to use digital technology were mediated by the attitude towards using digital technology.

6 Discussion

In this paper, we examined the role of digital literacy on the intention to use digital technology for creative professionals. An integrated conceptual model was developed composed of six constructs. The path between digital literacy and the intention to use digital technology was proven to be significant for the study sample of 163 European creative professionals. The SEM results showed that subjective norms, self-efficacy and compatibility all have a direct and positive impact on the attitude towards using digital technology. The use of the Digital Native Assessment Scale (DNAS) measurement tool from Teo (2013) was valuable in the classification of the respondents in groups with a lower score above the mean and higher score above the mean. It is relevant to highlight here that the mean score for the participants was 66 points in the DNAS, which in this study represents a total of 79% of the maximum score possible. Overall, the creative professionals that participated in this research demonstrated a meaningful level of digital literacy, and it was shown that their perception of digital literacy had a direct effect on their intention to use digital technology. The multigroup analysis results showed that the path between digital literacy to the intention to use digital technology was not significant for the female participants. In this case, the results could be inconclusive due to the low number of female respondents, however, a more accurate analysis is required for better comprehension of the causes of these results. In a general matter,

the skills in digital literacy proved to be essential for the group of creative workers in the analysis. The results found in this paper complement the findings of previous studies (e.g. Müller et al., 2009; Mangematin et al., 2014; Kamprath & Mietzner, 2015; Nikou et al., 2019; Nikou et al., 2020; van Laar et al., 2019; van Laar et al., 2020), which also indicate the close relationship of creative activities with innovation and ICT-related skills.

7 Conclusion and Future Work

The dynamic integration of digitalisation and digital skills with creative activities has resulted in a need for constant adaptations in creative professionals' level of digital literacy. These segments of industries are strongly related to knowledge-intensive activities, where innovation in technological developments can influence and modify the way these workers practice their work processes. Digital information processes, critical thinking and problem-solving are essential skills (referred to as digital literacy) for the exploitation of their creative expression. This paper proposes a modelling analysis of the effects of digital literacy on the intention to use digital technology. The outcomes support previous results reported in the academic literature (Nikou et al., 2020). Future work should explore in depth the subgroups found here, building on the analysis presented in this paper. There is also a need to encourage test experiences to validate these observations, where creative professionals not only self-report but also demonstrate the digital literacy skills evidenced in this study. Future works should also take into consideration that more and more industrials segments are tending to rely on the exploitation of individual creativity using ICT-related skills that require a high level of digital literacy. There is a necessity to encourage an environment where workers can embrace and learn new digital technologies as a requirement for the future of our global socio-economic growth.

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Appendix 1: Measurement instrument

Subjective Norms	SN1	Most professionals from my field use digital tools.	Taylor et al. (1995)
	SN2	Professionals that I admire use digital tools.	
	SN3	I have to use digital tools because my clients require it.	
	SN4	Professionals that use digital tools have more prestige than those who do not.	
	SN5	In my field, those who use digital tools have a high profile.	
Compatibility	CP1	Using digital tools fit well with my work routine.	Taylor et al. (1995)
	CP2	Using digital tools fit into my artistic style.	
	CP3	The setup of digital tools is compatible with my work processes.	
	CP4	Digital tools are not always compatible with the equipment that I use.	
Self-Efficacy	SE1	I feel comfortable using digital tools on my own.	Taylor et al. (1995)
	SE2	I am able to use digital tools even if there is no one to show me how to use it.	
	SE3	I am certain that I can deal with challenging tasks using digital tools.	
	SE4	I can perform effectively many different tasks by using digital tools.	
Attitude Toward Using	ATT1	The actual process of using digital tools is pleasant.	Venkatesh et al. (2003)
	ATT2	Digital tools make my work more interesting.	
	ATT3	I work better using digital tools.	
	ATT4	Digital tools enable me to be a self-directed and independent worker.	
	ATT5	Once I started working with digital tools, I find it difficult to avoid.	
Intention to Use Digital Tools	INT1	I do not hesitate to use new digital tools in my work processes.	Venkatesh et al. (2003)
	INT2	I plan to continue using digital tools in my work processes for years to come.	
	INT3	I intend to use the next versions of digital tools in my work processes.	
	INT4	I am very likely to use digital tools to create my work digitally.	
	INT5	I would recommend to other professionals in my field to use digital tools.	
Digital Literacy	**Grow up with technology**		Teo (2013) *Digital Natives Assessment Scale* (DNAS)
	DNAS1	I use the Internet for work and leisure every day.	
	DNAS2	When I need to know something, I search first online.	
	DNAS3	I keep in touch through devices with friends and online communities every day.	
	Comfortable with multitasking		
	DNAS4	I can check email and chat online at the same time.	
	DNAS5	When using the Internet for my work, I am able to listen to music as well.	
	DNAS6	I am able to use more than one application on the computer at a time.	
	Reliant on graphics for communication		
	DNAS7	I use pictures and figures more than words when I wish to explain something.	
	DNAS8	I use a lot of graphics and icons when I send messages.	
	DNAS9	I use pictures to express my feelings and ideas better.	
	Thrive on instant gratifications and rewards		
	DNAS10	I wish to be rewarded for everything I do.	
	DNAS11	I expect the websites that I regularly visit to be constantly updated.	
	DNAS12	When learning something new, I prefer to learn those that I can use quickly first.	