

DIFFERENCES OF EDUCATION LEVEL AND JOB POSITION IN DIGITAL TRANSFORMATION ADOPTION IN VIETNAM'S CREATIVE INDUSTRIES

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ABSTRACT

The aim of this paper is to contribute to understanding the differences in educational level and job titles that affect the adoption of digital transformation in the context of creative industries. The approach is based primarily on the technology-organizational-environment framework, one-way analysis of variance, and multivariate linear regression that were used to test the empirical model. This article describes the difference between the educational level and the job position groups for the adoption of digital transformation in Vietnam's creative industries, as well as an essential difference between them for the predictor variables. Our research has underlined the importance of demographic variables in relation to the adoption of digital transformation. The current study is limited to some fields of creative industries in Vietnam, such as design, creative services, new media, audiovisuals, publishing and printed media, and selected demographic parameters. More research should be done on certain fields in the creative industries and other demographic characteristics.

Keywords: TOE framework, one-way ANOVA, multivariate linear regression, digital transformation, creative industries, educational level, job positions

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INTRODUCTION

The area of digital transformation is attracting considerable interest because of its usefulness and practical application in various fields. Digital transformation is considered an essential element in enterprises (Onețiu, 2020), as it helps to take advantage of new technologies and optimize processes, innovate management systems, digitize products and services, and increase customer experience. Many helpful

studies have significantly showed that the important role of digital transformation, such as the study by Zoppelletto et al. (2020) which showed the combination of digital transformation and business strategy, and the results reported by Alvarenga et al., (2020) who demonstrated the considerable relationship between digital transformation and knowledge management in electronic government. In addition, high technology, such as digital

technology, plays a key role in the decision to undertake digital transformation in any company in the world. Thus, based on the technology-organization-environment (TOE) framework (Tornatzky & Fleischer, 1990) and the technology acceptance model (TAM) (Davis, 1989), previous studies applied them to explore technology acceptance in businesses; demographic variables especially are considered moderating variables and directly affect the adoption of technology (Sharma, 2015). Trawnih et al., (2021) found factors that affect the adoption of social networks in small and medium enterprises (SMEs) during the Covid-19 outbreak. The study by Ghobakhloo and Tang (2013) offered an analysis of the adoption of e-Commerce in small businesses related to innovation and perceived factors. Furthermore, demographic variables, including age and level of education, were found to affect willingness to use electronic government services (Sharma, 2015). A study by Teka (2017), however, showed that age, income, level of education, and occupation status do not influence the use of electronic banking. Given these points, practical studies reveal the significant implication of digital transformation and the particular contribution of demographic characteristics to the acceptance of technology, so the following research question for this article is: How do demographic characteristics impact the adoption of digital transformation in Vietnam's creative industries?

To address the research question, therefore, this analysis is being conducted to explore the differences in educational level groups and job title groups for the factors that influence digital transformation in the circumstances of Vietnam's creative industries. This article is organized as follows: Chapter 1 is an introduction; Chapter 2 reviews the theoretical background; Chapter 3 displays the research methodology; Chapter 4 analyzes the research results; and Chapter 5 discusses and concludes the study.

LITERATURE REVIEW

Digital transformation is the integrated use of digital technologies in all aspects of an enterprise to change the operation, business model, and delivery of new values to clients. It also reforms process, innovation, and corporate culture. Recent findings on the application of digital

transformation have led to a clearer view of the role of digital transformation in enterprises. Regarding these, the study of Zoppelletto et al. (2020) indicated that common business network common is mainly regenerated by digital resources; it comes from combining a digital transformation strategy and the business strategy of the network. In another study by Alvarenga et al., (2020) on digital transformation and knowledge management, the findings showed that the outstanding value of e-government is the result of knowledge management quality in public sector organizations. The results of Onețiu (2020) also revealed that digital transformation plays a crucial role in companies and has a sustainable relationship among social networks, reality management, and sales performance. Liébana-Cabanillas et al. (2020) researched the adoption of mobile payments in the case of Apple pay, in which they emphasized the perceived value, utility perception, and risk awareness that affect the purpose of using a suggested payment system; the perceived value is the most influential. Moreover, Liu et al. (2021) found the useful application of digital technologies for products and services in the gambling industry; that is, the gained value from customers and the collected value for companies.

Furthermore, Karunagaran et al. (2019) investigated the differential adoption of clouds between large companies and SMEs based on the TOE framework. As a result, cloud adoption of large enterprises is more difficult than SMEs, although large firms are the leader of innovation adoption. Likewise, Trawnih et al. (2021) combined the TOE framework and the technology acceptant model (TAM) to explore the effect of factors on the adoption of social media during SMEs in the period of the Covid-19 pandemic crisis, the consequence of which proved that the environmental context affects the adoption of social media. Ghobakhloo and Tang (2013) also developed a study related to the adoption of e-Commerce in small businesses; the results pointed out that factors significantly influence the adoption of e-Commerce, including innovation and perceived elements such as benefits, compatibility, risks, and costs. Berg and Lingen (2019) made a significant contribution to the field through an empirical study on the adoption of mobile enterprise applications where essential factors affect it, namely information technology infrastructure, processes

and systems policies, usefulness of technology, readiness and knowledge of the workforce, organizational materials, and competition pressure. In their carefully designed study, Kim and Olfman (2011) reported that the factors of business benefit drivers, readiness, and trust have a significant impact on corporate web services adoption.

In particular, many empirical studies determined the importance of demographic factors, including gender, age, educational level, income, occupation, marital status, experience, country differences, and residence (Munusamy et al., 2012; Sharma, 2015; Teka, 2017; Aldowah et al., 2017; Naicker & Merwe, 2018; Thiankhao & Kraiwanit, 2019). Regarding these issues, the study by Sharma (2015) showed that age and education level have a significant effect on the readiness to use electronic government services. Sharma's results differ from those obtained by Teka (2017), who found that there is an insignificant relationship between the adoption of electronic banking by users and sociological variables, such as level of education, occupation status, income, and age. Similarly to Teka, Ameme (2015) also found that gender does not affect clients using Internet banking services. However, the work by Thiankhao and Kraiwanit (2019) showed that residence, income, and marital status significantly affect the acceptance of property technology. Aldowah et al. (2017) performed an analysis to find a direct and indirect relationship between demographic variables and the context of e-learning implementation, including gender, age, and experience of teaching, e-learning, and information communication technology. Interestingly, the findings of Sharma (2015) and Aldowah et al. (2017) are in line with those of Naicker and Merwe (2018), who argued that risk factors come from the differential age between two generations for the acceptance of mobile technology. In the same vein, Munusamy et al. (2012) revealed that younger consumers under 25 years of age tend to use internet banking. Furthermore, Eze et al. (2021) showed that the experience, age, gender, and education of top management in SMEs and the firm location have a positive influence on mobile technology adoption. The work by Branca (2008) indicated demographic variables affecting the decision of customer usage in the adoption of bank delivery channels. Awa et al. (2015) also reached the conclusion that demographic characteristics

have a positive effect on the adoption of e-Commerce. In their 2018 study, Cullen and Kabanda (2018) evaluated the demographic factors age, education, and gender, and found that they are statistically significant in the usage activities of mobile commerce.

Taken together, the findings of previous studies are based on digital transformation, digital technologies, and the application of technology acceptance theories, such as the TAM model and TOE framework in various industries, which has contributed to enriching the research areas in this study. More especially, many prior empirical studies have shown the significance of demographic variables that affect technology acceptance; typical variables are age, gender, income, level of education, marital status, and occupation status. Therefore, it is crucial to conduct a practical study of demographic variables, namely, educational level and job title, associated with the adoption of digital transformation in Vietnam's creative industries. This study proposes two key research hypotheses as follows:

H1: There is a significant difference of educational level for digital transformation adoption.

H2: There is a significant difference of job title for digital transformation adoption.

METHODOLOGY

According to Hair et al. (2010) and Watson et al. (2014), an acceptable ratio for sample size is 10:1 between observed variables and survey respondents; therefore, the minimum sample size must be 620 samples for the full research framework of Trieu and Pavelková (2020). Data were collected in the context of Vietnam's creative industries through the designed questionnaire that was sent to the management levels of creative companies for ten months and the completion was in July 2021. The sampling technique based on snowball sampling (Cohen et al., 2007) was used for this survey through surveyed small groups from creative companies mainly located in Hanoi city and Ho Chi Minh city in Vietnam, in which other people were also encouraged to join this research. There were 674 responses in the survey, as detailed in Table 1, and the statistical data showed that the creative industries focus on design, creative services, new media, audiovisuals, and publishing and printed media. The proportion of male participants was

75.2% compared to 24.8% for females, and 64.2% came from Ho Chi Minh City, with the rest from Hanoi city and others. Most of the respondents

were middle managers, 34.7%, and 70.8% held bachelor's degrees.

Table 1: Demographics of survey participants

1. Gender		2. Location of companies	
Male	507 (75.2%)	Hanoi city	154 (22.8%)
Female	167 (24.8%)	Ho Chi Minh city	433 (64.2%)
		Others	87 (12.9%)
3. Educational qualifications		4. Size of companies (people)	
Highschool diploma	27 (4%)	1-50	171 (25.4%)
Bachelor's degree	477 (70.8%)	51-100	159 (23.6%)
Master's degree	151 (22.4%)	101-500	134 (19.9%)
Doctoral degree	19 (2.8%)	501-1000	184 (27.3%)
		1001 and 5000	19 (2.8%)
		5001 and more	7 (1%)
5. Job titles		6. Creative industry fields	
Owner	86 (12.8%)	Design	73 (10.8%)
Chief executive officer (CEO)	88 (13.1%)	Creative services	164 (24.3%)
Chief financial officer (CFO)	44 (6.5%)	New media	141 (20.9%)
Chief technology officer (CTO)	82 (12.2%)	Audiovisuals	211 (31.3%)
Chief digital officer (CDO)	35 (5.2%)	Publishing and printed media	85 (12.6%)
Chief information officer (CIO)	52 (7.7%)		
Middle managers	234 (34.7%)		
Others	53 (7.9%)		

Source: Own study.

This paper is based especially on the research model of Trieu and Pavelková (2020) to examine the research hypotheses that were offered in the

literature review following the proposed research framework, as shown in Figure 1.

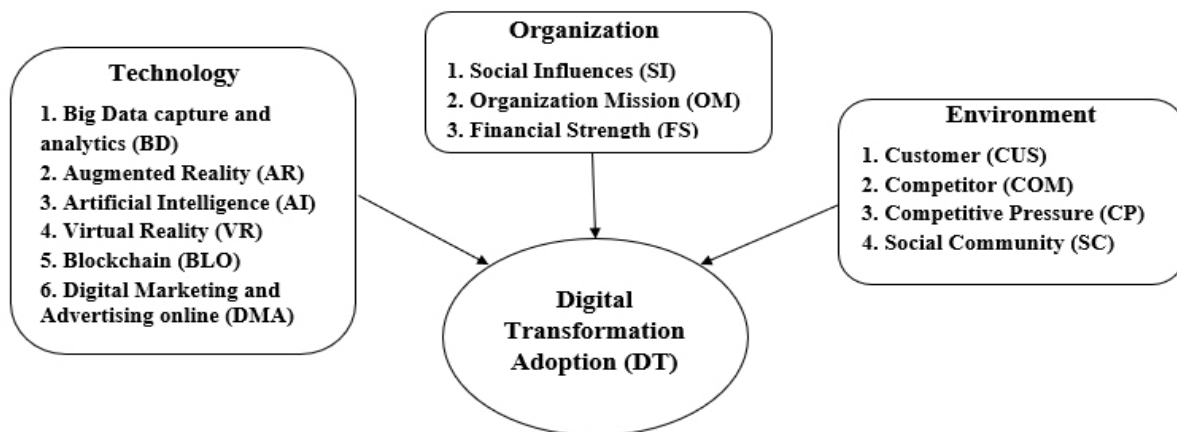


Figure 1. Proposed research framework.

Source: Own study and Trieu and Pavelková (2020).

Derived from the above research hypotheses and the research framework suggested in Figure 1, this study performed the empirical model (1), in which the dependent variable is DT and the

independent variables are BD, AR, AI, VR, BLO, DMA, SI, OM, FS, CUS, COM, CP, and SC as follows:

$$DT = \beta_0 + \beta_1 * BD + \beta_2 * AR + \beta_3 * AI + \beta_4 * VR + \beta_5 * BLO + \beta_6 * DMA + \beta_7 * SI + \beta_8 * OM + \beta_9 * FS + \beta_{10} * CUS + \beta_{11} * COM + \beta_{12} * CP + \beta_{13} * SC + \varepsilon. \quad (1)$$

The multivariate linear regression equation (1) is a background to apply for testing the entire sample, as well as the difference between each group in educational level and job title groups on the determinants of digital transformation adoption. The measure of dependent and independent variables evolved from relevant theories from previous studies (Tripopsakul, 2018; Chandra & Kumar, 2018; Venkatesh et al., 2003; Karatepe & Aga, 2016; Mckinnie, 2016; Hwang et al., 2016). Data procedure analysis includes many steps such as Cronbach's alpha reliability test, exploratory factor analysis (EFA),

the one-way ANOVA test, and multivariate linear regression using SPSS software (version 25).

RESULTS

According to the results of the Cronbach alpha reliability analysis, most of the factors were larger than 0.8; nevertheless, three factors were rejected because the Cronbach alpha coefficients are less than 0.7 (Hair et al., 2010), namely BLO, FS and SC. Table 2 reveals the results of the exploratory factor analysis using the principal components with the varimax rotation method.

Table 2: Results of the exploratory factor analysis

Observed variables	Independent variables - Factor loadings									
	1	2	3	4	5	6	7	8	9	10
CP2	.827									
CP3	.783									
CP1	.749									
CP4	.710									
SI2		.841								
SI1		.799								
SI3		.712								
SI4		.629								
COM1			.885							
COM2			.875							
COM3			.834							
AI2				.842						
AI1				.799						
AI3				.796						
DMA2					.831					
DMA1					.797					
DMA3					.777					
AR2						.840				
AR1						.807				
AR3						.796				
BD2							.836			
BD1							.809			
BD3							.753			
VR2								.834		
VR1								.821		
VR3								.771		

Table 2: Continued

CUS2									.817	
CUS3									.810	
CUS1									.786	
OM2										.849
OM3										.786
OM1										.779
Dependent variable										
Observed variables		DT2		DT4		DT3		DT1		
Factor loadings		.883		.867		.862		.836		

Source: Own study.

The findings of the exploratory factor analysis for independent variables consisted of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's sphericity test (KMO = 0.893, Chi-square = 12920.95, df = 496, p-value = .0000, eigenvalues = 1.096, cumulate = 77.17%) and dependent variable (KMO = 0.829, Chi-

square = 1454.56, df = 6, p-value = 0.000, eigenvalues = 2.973, cumulate = 74.31%). According to Hair et al. (2010), all results are appropriate; for example, ten extracted factors were greater than 0.5. The KMO values and eigenvalues were greater than 0.5 and 1, and the p-values were also significant at 5%.

Table 3: One-way ANOVA of the adoption of digital transformation based on the educational level

Part A: Test of homogeneity of variances					
	Levene statistic	df1	df2	P-value	
Based on Mean	4.622	3	670	0.000***	
Part B: Robust tests of equality of means					
	Statistic	df1	df2	P-value	
Welch	25.531	3	60.835	0.000***	
Part C: Post Hoc tests with Tukey method					
	Mean difference	Std. Error	P-value	95% Confidence Interval	
Highschool and Bachelor	0.105	0.199	0.952	-0.408	0.620
Highschool and Master	-0.310	0.210	0.455	-0.853	0.233
Highschool and Doctoral	-0.846	0.302	0.027**	-0.624	-0.069
Bachelor and Master	-0.416	0.094	.000***	-0.659	-0.174
Bachelor and Doctoral	-0.952	0.235	.000***	-1.560	-0.345
Master and Doctoral	-0.536	0.245	0.128	-1.169	0.096

Source: Own study. Notes: Significance is statistical at 10% (*), 5% (**), and 1% (***).

The ANOVA results are then reported in Tables 3 and 4. As highlighted in Table 3, part A indicates that the p-value of the Levene test was less than 0.05, which means uncertain homogeneity of variance and having a difference between educational level groups, and so the Welch test was used for the next step. Part B shows the p-value of the Welch test that was significant at 5%; thus, it can be concluded that there is a mean difference in the adoption of digital transformation between educational qualification groups. These findings are the same

as in Table 4, the mean difference occurs in the adoption of digital transformation between the job title groups. To identify which groups have a mean dissimilarity, the Turkey post hoc test was used. More interestingly, part C reveals that the three groups had a mean variation compared to the others in Table 3. Similarly, part C of Table 4 specifies that the five groups were also different from the others.

Table 4: One-way ANOVA of the adoption of digital transformation based on job titles

Part A: Test of homogeneity of variances					
	Levene statistic	df1	df2	P-value	
Based on Mean	4.579	7	666	0.000***	
Part B: Robust tests of equality of means					
	Statistic	df1	df2	P-value	
Welch	8.478	7	204.316	0.000***	
Part C: Post Hoc tests with Tukey method					
	Mean Difference	Std. Error	P-value	95% Confidence Interval	
Owner and CEO	0.032	0.151	1.000	-0.429	0.494
Owner and CFO	-0.141	0.185	0.995	-0.705	0.423
Owner and CTO	-0.194	0.154	0.914	-0.664	0.276
Owner and CDO	-0.522	0.200	1.000	-0.663	0.558
Owner and CIO	-0.348	0.175	0.494	-0.883	0.186
Owner and Middle managers	0.420	0.126	0.021**	0.036	0.804
Owner and Others	0.229	0.174	0.894	-0.302	0.761
CEO and CFO	-0.173	0.184	0.982	-0.735	0.389
CEO and CTO	-0.226	0.153	0.822	-0.693	0.241
CEO and CDO	-0.084	0.200	1.000	-0.693	0.524
CEO and CIO	-0.380	0.175	0.368	-0.913	0.152
CEO and Middle managers	0.387	0.125	0.042**	0.007	0.768
CEO and Others	0.197	0.174	0.949	-0.332	0.735
CFO and CTO	-0.052	0.187	1.000	-0.622	0.778
CFO and CDO	0.089	0.226	1.000	-0.601	0.778
CFO and CIO	-0.207	0.205	0.973	-0.831	0.416
CFO and Middle managers	0.561	0.164	0.016**	0.061	1.061
CFO and Others	0.370	0.204	0.610	-0.250	0.991
CTO and CDO	0.141	0.202	0.997	-0.473	0.757
CTO and CIO	-0.154	0.177	0.988	-0.694	0.385
CTO and Middle managers	0.614	0.128	0.000***	0.223	1.005
CTO and Others	0.423	0.176	0.243	-0.113	0.960
CDO and CIO	-0.296	0.218	0.877	-0.962	0.369
CDO and Middle managers	0.472	0.181	0.157	-0.080	1.024
CDO and Others	0.281	0.218	0.902	-0.382	0.945
CIO and Middle managers	0.768	0.153	0.000***	0.302	1.235
CIO and Others	0.578	0.195	0.063*	-0.016	1.172
Middle managers and Others	-0.190	0.152	0.916	-0.654	0.272

Source: Own study. Notes: Significance is statistical at 10% (*), 5% (**), and 1% (***).

Table 5 summarizes the results of the multivariate linear regression between the dependent and independent variables in a complete sample. Strong evidence was found that the p-value was statistically significant at 5% and the R-square was 55.1%, which means that the fluctuation of the dependent variable is affected by independent variables on average by 55.1%. Surprisingly, most predictor variables had a positive relationship with the dependent variable. The VIF coefficients were appropriate,

so multicollinearity phenomena do not occur.

Further tests showed that four groups of educational levels were statistically significant at 5% (see Table 6). However, each group has various results related to the independent variables; for example, most of the independent variables with statistical significance belonged to the master's and bachelor's degree groups, which compared to the remaining groups.

Table 5: Multivariate linear regression between dependent and independent variables

Dependent variable (DT)	Standardized Coefficients	P-value	VIF
Const. (β_0)		0.522	
BD (β_1)	0.102	0.002***	1.633
AR (β_2)	0.072	0.027**	1.576
AI (β_3)	0.129	0.000***	1.480
VR (β_4)	0.090	0.005***	1.528
DMA (β_5)	0.093	0.006***	1.692
SI (β_6)	0.099	0.003***	1.595
OM (β_7)	0.186	0.000***	1.503
CUS (β_8)	0.100	0.001***	1.451
COM (β_9)	0.210	0.000***	1.148
CP (β_{10})	0.092	0.006***	1.655
Obs.	674		
R square	0.551		
P-value	0.000***		

Source: Own study. Notes: Significance is statistical at 10% (*), 5% (**), and 1% (***). Const.: Constant. SC: Standardized coefficients. Obs.: Observations.

There was a positive significant relationship between DMA and DT in groups such as bachelor's and master's degrees, and it was opposite to the high school diploma and doctoral degree groups. Most predictor variables had a significance of 5%, except for SI in the bachelor's degree group; similarly, four independent variables, namely, BD, AR, VR, and CP, did not

affect DT in the master's degree group. Additionally, the three independent variables are AI, DMA, and CP that influence DT in the high school diploma group, and it was similar to the doctoral degree group, including VR, DMA, and SI.

Table 6: Multivariate linear regression based on the influence of education qualification on the determinants of digital transformation adoption.

Dependent Variable (DT)	High school diploma		Bachelor's degree		Master's degree		Doctoral degree	
	SC	P-value	SC	P-value	SC	P-value	SC	P-value
Const. (β_0)		0.774		0.248		0.045**		0.00***
BD (β_1)	-0.072	0.683	0.136	0.00***	0.027	0.722	0.234	0.128
AR (β_2)	-0.005	0.977	0.098	0.00***	-0.049	0.551	-0.211	0.212
AI (β_3)	0.334	0.017**	0.093	0.014**	0.186	0.013**	0.129	0.181
VR (β_4)	0.135	0.387	0.091	0.016**	0.072	0.329	0.887	0.00***
DMA (β_5)	-0.393	0.015**	0.088	0.025**	0.192	0.023**	-0.846	0.00***
SI (β_6)	0.032	0.867	0.070	0.077*	0.162	0.023**	0.728	0.00***
OM (β_7)	0.077	0.571	0.171	0.00***	0.211	0.00***	0.118	0.292
CUS (β_8)	-0.042	0.818	0.095	0.014**	0.151	0.039**	-0.186	0.128
COM (β_9)	-0.207	0.216	0.218	0.00***	0.206	0.00***	-0.175	0.134
CP (β_{10})	1.019	0.00***	0.105	0.012**	-0.032	0.636	0.092	0.378
Obs.	27		477		151		19	
R square	0.844		0.564		0.485		0.976	
P-value	0.000***		0.000***		0.000***		0.000***	

Source: Own study. Notes: Significance is statistical at 10% (*), 5% (**), and 1% (***). Const.: Constant. SC: Standardized coefficients. Obs.: Observations.

In the same way, Table 7 also provides an overview of the results based on the job title

groups. Surprisingly, eight groups were statistically significant at 5%, although the results

of the predictor variables were not identical between the groups. More specifically, there were two to four factors that influence DT in each group consisting of Owner (BD, AI, CUS and COM), CEO (BD, AI, and OM), CFO (AI, CUS), CTO (BD, DMA and SI), CDO (AR, OM and CUS), CIO

(AR, DMA and CP), middle managers (AR, VR, OM and COM) and Others (BD, DMA and OM). Furthermore, most DTs were positively affected, but three factors were negative, such as CDO (CUS), CIO (AR), and Others (DMA).

Table 7: Multivariate linear regression based on the influence of job title on the determinants of digital transformation adoption.

Dependent Variable (DT)	Owner		CEO		CFO		CTO	
	SC	P-value	SC	P-value	SC	P-value	SC	P-value
Const. (β_0)		0.080*		0.384		0.959		0.181
BD (β_1)	0.150	0.020**	0.251	0.016**	0.293	0.184	0.192	0.028**
AR (β_2)	-0.030	0.682	-0.167	0.074*	0.259	0.166	-0.030	0.746
AI (β_3)	0.251	0.00***	0.252	0.00***	0.399	0.020**	0.034	0.679
VR (β_4)	0.129	0.113	-0.107	0.319	0.139	0.382	-0.096	0.258
DMA (β_5)	0.063	0.411	0.142	0.203	-0.217	0.372	0.295	0.00***
SI (β_6)	0.104	0.248	0.112	0.190	0.162	0.290	0.358	0.00***
OM (β_7)	-0.017	0.807	0.309	0.00***	-0.145	0.373	0.142	0.074*
CUS (β_8)	0.300	0.00***	0.091	0.289	0.397	0.00***	0.115	0.134
COM (β_9)	0.191	0.00***	0.166	0.052*	-0.161	0.314	0.052	0.490
CP (β_{10})	0.109	0.105	0.073	0.400	0.021	0.897	0.116	0.208
Obs.	86		88		44		82	
R square	0.826		0.541		.469		.654	
P-value	0.000***		0.000***		0.010***		0.000***	
Dependent Variable (DT)	CDO		CIO		Middle managers		Others	
	SC	P-value	SC	P-value	SC	P-value	SC	P-value
Const. (β_0)		0.033**		0.008***		0.256		0.362
BD (β_1)	0.220	0.198	-0.024	0.843	0.083	0.168	0.312	0.020**
AR (β_2)	0.476	0.046**	-0.273	0.040**	0.102	0.046**	0.205	0.084*
AI (β_3)	-0.211	0.272	0.093	0.497	0.072	0.206	0.217	0.056*
VR (β_4)	-0.247	0.237	-0.105	0.388	0.148	0.00***	0.129	0.298
DMA (β_5)	0.169	0.349	0.538	0.00***	0.073	0.181	-0.314	0.034**
SI (β_6)	-0.034	0.839	-0.035	0.801	0.039	0.519	0.470	0.677
OM (β_7)	0.461	0.017**	0.041	0.754	0.185	0.00***	0.714	0.00***
CUS (β_8)	-0.410	0.022**	0.182	0.201	0.021	0.711	-0.136	0.247
COM (β_9)	0.316	0.062*	-0.035	0.767	0.329	0.00***	0.151	0.200
CP (β_{10})	0.290	0.060*	0.322	0.013**	0.111	0.115	0.168	0.139
Obs.	35		52		234		53	
R square	0.569		0.533		0.582		0.575	
P-value	0.010***		0.000***		0.000***		0.000***	

Source: Own study. Notes: Significance is statistical at 10% (*), 5% (**), and 1% (***). Const.: Constant. SC: Standardized coefficients. Obs.: Observations.

DISCUSSION

According to the one-way ANOVA test, the findings specified the mean difference between the educational level groups for the adoption of digital transformation, so H1 is accepted. This

consequence is consistent with Sharma (2015), who investigated the adoption of electronic government services, but is not in agreement with the study by Teka (2017), which identified the adoption of electronic banking. Similarly, H2

is also accepted due to the mean difference between the job title groups; however, the result differs considerably from that reported by Teka (2017). Furthermore, the result of the multivariate linear regression also indicates an essential difference between the education level and the job title groups for the determinants of digital transformation. As can be seen in Tables 6 and 7, especially, the positive results are consistent with the study by Chandra and Kumar (2018) related to the relative advantage of technology in the adoption of augmented reality in groups such as High School (AI, DMA), Bachelor (BD, AR, AI, VR, DMA), Master (AI, DMA), Doctoral (VR, DMA), Owner (BD, AI), CEO (BD, AI), CFO (AI), CTO (BD, DMA), CDO (AR), CIO (AR, DMA), Middle managers (AR, VR) and Others (BD, DMA). However, the positive outcomes of SI in the Master, Doctoral, and CTO groups do not confirm previous research by Venkatesh et al. (2003) on social influence affecting user behavior of information technology. The positive effect of OM in groups including Bachelors, Master, CEO, Middle Manager, and Others is similar to the study by Karatepe and Aga (2016) of the organization's mission on job performance. Moreover, the positive findings of CUS in groups such as Bachelor, Master, Owner, CFO, CDO, and CP with groups, namely High School, Bachelor, CIO, support the study by Tripopsakul (2018) on competitive pressure and customers in social media adoption. Contrary to what has been reported by Mckinnie (2016) and Oliveira et al. (2014) about competitive pressure and cloud computing adoption, the positive impact of COM and CP in this study indicates groups such as Bachelor, Master, Owner, Middle Manager for COM, and High School, Bachelor, CIO for CP. The result especially of factors (big data capture and analytics, augmented reality, artificial intelligence, virtual reality, digital marketing and advertising online) was found for the first time, and it enriches the research area. Furthermore, from the outcome shown above, knowledge especially plays an important role in the decision on digital transformation adoption, which is demonstrated by a considerable consensus among the bachelor and master degree groups on the determinants of digital transformation in Vietnam's creative industries. Nevertheless, the results of the analysis demonstrated various determinants of digital transformation in creative companies from the management level with different job positions; this proves that

their awareness of internal and external factors, and the trend of high-tech adoption such as digital technology in creative industries, is still not identical. From this practical study, as a result, the management level should consider adopting the current technology trends in creative industries referred by UNCTAD (2018), consisting of big data capture and analytics, augmented reality, artificial intelligence, virtual reality, digital marketing and online advertising, to improve products and services, reduce operating costs, reach new customers, optimize work performance, and increase competitiveness in the market.

CONCLUSION

The findings show that there is a considerable difference in perception of the management level based on educational level and job position. Furthermore, the result of multivariate linear regression revealed a key difference between the education level and job title groups for the determinants of digital transformation. As a result, the study has addressed the research question of how demographic variables affect the adoption of digital transformation in Vietnam's creative industries; nevertheless, the different sample sizes are between groups and lead to various results compared to the entire sample size. The contribution of this article provides new information to clarify the current situation of digital transformation adoption in Vietnam's creative industries based on demographic variables, including qualification levels and job positions. Although there is a difference between groups, the general trend is still the adoption of digital transformation, which is taking place strongly in the industry, and creative firms can identify the key factors needed for digital transformation. One possible application of the study result would be a background for other scientists who want to better understand the importance of demographic variables in the decision on the adoption of digital transformation in any country's industries. To succeed in digital transformation in creative industries, the government must promote the role of state management with many favorable policies for innovation, investment in digital technology, digital human resources, digital finance, digital data, and digital infrastructure development. These findings, however, may not be typical of all fields in the creative industries in

Vietnam, and other demographic parameters such as gender and occupation status have not yet been investigated. More research is required to examine other demographic characteristics or a definite field in the creative industries.

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REFERENCES

- Aldowah, H., Ghazal, S., Umar, I. N., & Muniandy, B. (2017). The Impacts of Demographic Variables on Technological and Contextual Challenges of E-learning Implementation. *Journal of Physics: Conference Series*, 892(1), 1–13. <https://doi.org/10.1088/1742-6596/892/1/012013>
- Alvarenga, A., Matos, F., Godina, R., & Matias, J. C. O. (2020). Digital Transformation and Knowledge Management in the Public Sector. *Sustainability*, 12(14), 1–24. <https://doi.org/10.3390/su12145824>
- Ameme, B. K. (2015). The Impact of Customer Demographic Variables on the Adoption and Use of Internet Banking in Developing Economies. *Journal of Internet Banking and Commerce*, 20(2), 1–31. <https://doi.org/10.4172/1204-5357.1000114>
- Awa, H. O., Baridam, D. M., & Nwibere, B. M. (2015). Demographic determinants of electronic commerce (EC) adoption by SMEs: A twist by location factors. *Journal of Enterprise Information Management*, 28(3), 326–345. <https://doi.org/10.1108/JEIM-10-2013-0073>
- Berg, J. van den, & Lingen, E. van der. (2019). An empirical study of the factors affecting the adoption of mobile enterprise applications. *South African Journal of Industrial Engineering*, 30(1), 124–146. <https://doi.org/10.7166/30-1-1992>
- Branca, A. S. (2008). Demographic influences on behaviour: An update to the adoption of bank delivery channels. *International Journal of Bank Marketing*, 26(4), 237–259. <https://doi.org/10.1108/02652320810884786>
- Chandra, S., & Kumar, K. N. (2018). Exploring factors influencing organizational adoption of augmented reality in e-commerce: Empirical analysis using technology-organization-environment model. *Journal of Electronic Commerce Research*, 19(3), 237–265. Retrieved from: http://www.jecr.org/sites/default/files/2018vol19no3_paper3.pdf
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education* (sixth). Routledge/Taylor & Francis Group.
- Cullen, M., & Kabanda, S. K. (2018). The role of demographic and motivational factors on mobile commerce usage activities in South Africa. *South African Journal of Information Management*, 20(1), 1–9. <https://doi.org/10.4102/sajim.v20i1.817>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–339. <https://doi.org/10.2307/249008>
- Eze, S. C., Awa, H. O., Chinedu-eze, V. C. A., & Bello, A. O. (2021). Demographic determinants of mobile marketing technology adoption by small and medium enterprises (SMEs) in Ekiti State, Nigeria. *Humanities and Social Sciences Communications*, 8(1), 1–12. <https://doi.org/10.1057/s41599-021-00762-5>
- Ghobakhloo, M., & Tang, S. H. (2013). The role of owner/manager in adoption of electronic commerce in small businesses: The case of developing countries. *Journal of Small Business and Enterprise Development*, 20(4), 754–787. <https://doi.org/10.1108/JSBED-12-2011-0037>
- Hair, J. F., Black, J. W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis*. In *Pearson Prentice Hall* (Vol. 7). <https://doi.org/10.1111/j.1467-9574.1962.tb01184.x>
- Hwang, B. N., Huang, C. Y., & Wu, C. H. (2016). A TOE Approach to Establish a Green Supply Chain Adoption Decision Model in the

- Semiconductor Industry. *Sustainability*, 8(168), 1–30.
<https://doi.org/10.3390/su8020168>
- Karatepe, O. M., & Aga, M. (2016). The effects of organization mission fulfillment and perceived organizational support on job performance: The mediating role of work engagement. *International Journal of Bank Marketing*, 34(3), 368–387.
<https://doi.org/10.1108/IJBM-12-2014-0171>
- Karunagaran, S., Mathew, S. K., & Lehner, F. (2019). Differential cloud adoption: A comparative case study of large enterprises and SMEs in Germany. *Information Systems Frontiers*, 21(4), 861–875.
<https://doi.org/10.1007/s10796-017-9781-z>
- Kim, D., & Olfman, L. (2011). Determinants of Corporate Web Services Adoption : A Survey of Companies in Korea. *Communications of the Association for Information Systems*, 29(1), 1–24.
<https://doi.org/10.17705/1CAIS.02901>
- Liébana-Cabanillas, F., García-Maroto, I., Muñoz-Leiva, F., & Ramos-de-Luna, I. (2020). Mobile Payment Adoption in the Age of Digital Transformation: The Case of Apple Pay. *Sustainability*, 12(13), 1–16.
<https://doi.org/10.3390/su12135443>
- Liu, M. T., Dong, S., & Zhu, M. (2021). The application of digital technology in gambling industry. *Asia Pacific Journal of Marketing and Logistics*, 33(7), 1685–1705.
<https://doi.org/10.1108/APJML-11-2020-0778>
- Mckinnie, M. (2016). *Cloud Computing: TOE Adoption Factors By Service Model In Manufacturing* (Doctoral dissertation). Georgia State University, Georgia.
 Retrieved from:
http://scholarworks.gsu.edu/bus_admin_diss/68
- Munusamy, J., Run, E. C. De, Chelliah, S., & Annamalah, S. (2012). Adoption of Retail Internet Banking: A Study of Demographic Factors. *Journal of Internet Banking and Commerce*, 17(3), 1–14. Retrieved from:
https://www.researchgate.net/publication/256051102_Adoption_of_Retail_Internet_Banking_A_Study_of_Demographic_Factors
- Naicker, V., & Merwe, D. B. Van Der. (2018). Managers' perception of mobile technology adoption in the Life Insurance industry. *Information Technology & People*, 31(2), 507–526. <https://doi.org/10.1108/ITP-09-2016-0212>
- Onețiu, D. D. (2020). The Impact of Social Media Adoption by Companies. Digital Transformation. *Studia Universitatis — Vasile Goldiș Arad. Economics Series*, 30(2), 83–96. <https://doi.org/10.2478/sues-2020-0014>
- Sharma, S. K. (2015). Adoption of e-government services: The role of service quality dimensions and demographic variables. *Transforming Government: People, Process and Policy*, 9(2), 207–222.
<https://doi.org/10.1108/TG-10-2014-0046>
- Teka, B. M. (2017). Influence of Demographic Factors on User's Adoption of Electronic Banking in Ethiopia. *Journal of Internet Banking and Commerce*, 22(S7), 1–17.
 Retrieved from:
<https://www.icommercentral.com/open-access/influence-of-demographic-factors-on-users-adoption-of-electronic-banking-in-ethiopia.pdf>
- Thiankhaio, N., & Kraiwanit, T. (2019). Acceptance of Property Technology in Thailand in The 4.0 Era. *AU EJournal of Interdisciplinary Research*, 4(2), 112–121.
 Retrieved from:
<https://www.proquest.com/docview/2384090615?pq-origsite=gscholar&fromopenview=true>
- Tornatzky, L.G., & Fleischer, M. (1990). The processes of technological innovation. *Lexington books, Lexington, MA*.
<https://doi.org/10.1007/BF02371446>
- Trawnih, A., Yaseen, H., Al-Adwan, A. S., Alsoud, A. R., & Jaber, O. A. (2021). Factors influencing social media adoption among smes during COVID-19 crisis. *Journal of Management Information and Decision Sciences*, 24(6), 1–18. Retrieved from:
https://www.researchgate.net/publication/352546308_Factors_Influencing_Social_Media_Adoption_Among_SMEs_During_Covid-19_Crisis
- Trieu, T. V. H., & Pavelková, D. (2020). Digital transformation and its influence on performance of creative industry companies. *ICFE 2020 - The 6th*

International Conference on Finance and Economics, 83–98. Retrieved from: https://www.researchgate.net/profile/ThierryTartarin/publication/349339689_COVID_19_IMPACT_ON_BUSINESS_MODELS_AND_BUSINESS_PRACTICES_RESULTS_FROM_AN_INTERNATIONAL_ONLINE_SURVEY/links/602bb7984585158939a99995/COVID-19-IMPACT-ON-BUSINESS-MODELS-AND-BUSINESS-PRACTICES-RESULTS-FROM-AN-INTERNATIONAL-ONLINE-SURVEY.pdf#page=99

Tripopsakul, S. (2018). Social media adoption as a business platform: An integrated tam-toe framework. *Polish Journal of Management Studies*, 18(2), 350–362. <https://doi.org/10.17512/pjms.2018.18.2.28>

UNCTAD. (2018). Creative Economy Outlook: Trends in international trade in creative industries 2002–2015. Country Profiles: 2005–2014. *United Nations*. Retrieved from: <https://unctad.org/webflyer/creative-economy-outlook-trends-international-trade-creative-industries>

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3), 425–478. <https://doi.org/10.2307/30036540>

Watson, P. B., Seaton, P., Sims, D., Jamieson, I., Mountier, J., Whittle, R., & Saarikoski, M. (2014). Exploratory Factor Analysis of the Clinical Learning Environment, Supervision and Nurse Teacher Scale (CLES+T). *Journal of Nursing Measurement*, 22(1), 164–180. <https://doi.org/10.1891/1061-3749.22.1.164>

Zoppelletto, A., Bullini Orlandi, L., & Rossignoli, C. (2020). Adopting a digital transformation strategy to enhance business network commons regeneration: an explorative case study. *The TQM Journal*, 32(4), 561–585. <https://doi.org/10.1108/TQM-04-2020-0077>

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