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Factors Affecting the Level of Digital Transformation Readiness in the Organization of Accounting at Wood Processing Enterprises in Bac Ninh

Phan Thi Thu Mai
University of Labor and Social Affairs, Hanoi, Vietnam

Corresponding Author: **Phan Thi Thu Mai**

Abstract
Digital transformation is now implemented in all activities and sectors of the economy, and accounting is a field that needs to be digitally transformed. In this article, the authors use a mixed-methods research approach to investigate the impact of different factors on the level of readiness for digital transformation in the organization of accounting at wood processing enterprises in Bac Ninh province. The results of the study show that there are three factors that have a positive impact on digital transformation in the organization of accounting at these enterprises: Manager's awareness, the modernity of the information system, and the capacity of accounting staff. Based on the research results, the authors also make a number of recommendations to improve the level of readiness for digital transformation in wood processing enterprises in Bac Ninh province.

Keywords: Digital Transformation, Organization of Accounting, Readiness for Digital Transformation

1. Problem Statement

Digital transformation is a trend and a necessity in today's era, and it is also an opportunity for businesses to make a breakthrough in the fourth industrial revolution. Digital transformation is "a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies" (Gregory Vial, 2019) [3]. Digital transformation affects many areas of business operations, including accounting, which is a heavily affected area. Digital transformation is very important for accounting in businesses in general and for wood processing enterprises in Bac Ninh province in particular. In order to improve the level of readiness for digital transformation in these enterprises, the authors believe that it is necessary and practical to research and find out the factors affecting the level of readiness for digital transformation in the organization of accounting.

2. Overview of the study and theoretical bases

2.1 Organization of accounting in the context of digital transformation

Digital transformation in the accounting and auditing sector can be simply understood as the application of digital technologies to accounting and auditing tasks, helping to implement accounting and auditing tasks more quickly and efficiently while still optimizing, saving manpower, time and costs for businesses (Tran Thi Quyen, 2022) [6]. Digital transformation will change the daily operations in the accounting department through the application of digital technology: Automatic work processes, data collection and processing through the application of artificial intelligence (AI) significantly reduce the workload of accountants; The application of Big Data technology makes the information provided by accountants more objective and timely, as well as more valuable and multi-dimensional; Accounting duties can be done anywhere, securing customer data and tracking suppliers can be done easily through the application of cloud computing; The Internet of Things (IoT) helps the accounting process to be carried out in real time, accounting data is connected to each other to ensure accuracy; In particular, the application of Blockchain technology through the use of distributed ledgers, transactions are carried out safely and reliably.

2.2 Factors affecting the level of readiness for digital transformation in the organization of accounting

***Capacity of accountants*:** To be ready for digital transformation, capacity of the accountants plays an important role. It is not just about professional knowledge, but more importantly, it is about the ability and capacity in information technology. An accountant with good information technology skills will easily access and apply digital technology applications to accounting

duties. According to Busulwa and Evans (2021) [1], accountants play the most important role in helping organizations safely implement digital transformation in accounting duties. Hoang Thu Hien and Nguyen Thu Hang (2021) [4] in a study assessing the impact of the information technology capacity of accountants in the context of digital transformation affirmed that this factor has a positive impact (with β = 0.379).

The modernity of the information system: Speaking of the modernity of the information system, computers, software, and devices that use modern technology applications cannot be ignored. This is extremely important in the digital transformation process. According to Ebert C and Duate (2018) [2], information technology is the key factor in determining digital transformation. The application of information technology in accounting work is inevitable; however, when it comes to digital transformation, the application of information technology does not stop at using accounting software but also applies digital technologies, such as Big Data, AI, etc., to accounting duties. As a result, accounting information will be provided to users timelier and appropriately. Therefore, in order to be ready for digital transformation, the material conditions of the accounting department need to be adequately addressed. Assessing the impact of the information system, Trinh Xuan Hung (2020) [7] in his study showed that information technology has a positive impact and has a great influence on the level of readiness for digital transformation in enterprises (β = 0.947).

Manager's awareness: The manager's awareness is considered the most important factor determining the success of digital transformation in the enterprise in general and digital transformation in the accounting organization in particular. Mc Kinsey (2020) argues that the reason many businesses are not ready for digital transformation often stems from the manager's unwillingness to change; from concerns about the risks of implementing digital transformation in terms of information security as well as investment costs. The manager's awareness of digital transformation determines the policy, action strategy, and short-term and long-term plans of the enterprise; this is an important factor affecting the level of readiness for digital transformation in the organization of accounting. The study by Hoang Thu Hien and Nguyen Thu Hang (2021) [4] selected the factor of management awareness to consider and assess the impact on the digital transformation process in the enterprise. The study also showed that this factor has a positive impact on the digital transformation process in the enterprise (β = 0.05).

3. Research Methodology

The author uses both qualitative and quantitative research methods. Based on the qualitative research, the author searches for and identifies the factors affecting the level of digital transformation readiness in accounting duties, from which the research model, research hypotheses and influencing factors are proposed. Then, the quantitative research method is used by the author to test the research model and the hypotheses proposed. The proposed research model is as follows:

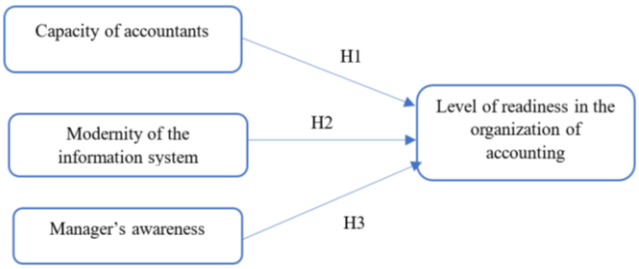

Fig 1: Research model

The proposed research hypotheses include:

Hypothesis H1: The capacity of accountants (NLKT) has a positive impact on the level of digital transformation readiness in the organization of accounting at wood processing enterprises in Bac Ninh province.

Hypothesis H2: The modernity of the information system (HĐTT) has a positive impact on the level of digital transformation readiness in the organization of accounting at wood processing enterprises in Bac Ninh province.

Hypothesis H3: Manager's awareness (NTQL) has a positive impact on the level of digital transformation readiness in the organization of accounting at wood processing enterprises in Bac Ninh province.

Measurement scales for variables are constructed as follow:

Table 1: Measurement scales for variables

Types of variables	Encode	Names of Variables
Independent Variables	**NLKT**	**Capacity of Accountants**
	NLKT1	Have the ability to use accounting softwares
	NLKT2	Have the knowledge and ability to study and improve information technology ability
	NLKT3	Receive training frequently to improve information technology ability
	NLKT4	Have ability to perform and organize tasks in the context of
	HĐTT	**Modernity of the information system**
	HĐTT1	Equipped with computers and strong Internet connnection
	HĐTT2	Have the specialized department in charge of information technology
	HĐTT3	Have information connectivity between departments
	HĐTT4	Ready to adapt to new technology
	NTQL	**Manager's awareness**
	NTQL1	Have clear awareness of the benefits of digital transformation in accounting
	NTQL2	Have clear awareness of the risks in information security while digitally transforming
	NTQL3	Digital transformation was included orientation and development goals of the businesses
	NTQL4	Have plans to recruit well-qualified human resources to serve digital transformation
Dependent Variable	**CDS**	**Level of readiness for digital transformation**

Source: Author's Suggestion

The author uses primary data collected through a survey in 2023. The survey was designed on the Google Forms platform with most questions measured on a Likert 5-point scale (1 = strongly disagree to 5 = strongly agree). The survey was conducted with wood processing enterprises in Bac Ninh province. The collected data was cleaned, encoded, and inserted into SPSS 26 software with 150 observations. With the support of SPSS 26 software, the author performed data analysis using scale validation, descriptive statistics, and regression analysis techniques.

4. Research results and disscussion

4.1 Descriptive sttistics of the variables in the model

Table 2: Descriptive sttistics of the variables in the model

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
NLKT1	150	2.00	5.00	4.1267	.77975
NLKT2	150	2.00	5.00	3.7667	.68949
NLKT3	150	2.00	5.00	3.5333	.69192
NLKT4	150	2.00	4.00	3.1067	.62548
HĐTT1	150	2.00	5.00	4.1133	.78181
HĐTT2	150	2.00	5.00	3.7067	.68097
HĐTT3	150	2.00	5.00	3.4867	.66289
HĐTT4	150	2.00	5.00	3.2200	.67426
NTQL1	150	2.00	5.00	4.0733	.77803
NTQL2	150	2.00	5.00	3.7467	.73445
NTQL3	150	2.00	5.00	3.5400	.67187
NTQL4	150	2.00	5.00	3.2867	.69838
CDS	150	2.00	5.00	3.7000	.73958
Valid N (listwise)	150				

Source: Result from SPSS 26 (2024)

The level of readiness for digital transformation is relatively high, with the mean value of 3.7. Most of the surveyed enterprises are ready for digital transformation, and have made initial preparations and have a foundation for digital transformation. The observed variables of the independent variable all have high values, almost all are greater than 3.4. Only 3 observed variables are at around 3.2. This shows that enterprises have almost met all the necessary conditions for digital transformation in accounting.

4.2 Scale analysis

Scale analysis was conducted based on Cronbach's Alpha coefficient and exploratory factor analysis (EFA). To test the reliability of the scale for each variable, the author used Cronbach's Alpha test. The test helps to assess the appropriateness of the scale, thereby allowing the elimination of inappropriate observed variables. At the same time, this test also helps to indicate the contribution of the variable in measuring the impact of the variable. According to the test results, the Cronbach's Alpha coefficient is 0.815 for the scale for the variable modernity of the information system (HĐTT); 0.79 for the scale for the variable manager's awareness (NTQL); 0.832 for the scale for the variable capacity of accounting staff (NLKT). These coefficients are all greater than 0.6 and the corrected item – total correlation is greater than 0.3, indicating that the scale is sufficient. In which, all scales are close to or greater than 0.8, showing that all scales are very good.

Exploratory factor analysis (EFA) was conducted in two rounds. Round 1 was performed for the independent variables. The analysis results showed that: The KMO coefficient is 0.797, so the factor analysis is appropriate. Bartlett's test is statistically significant because the Bartlett's sig coefficient is .000 < 0.05, proving that the observed variables are correlated with each other in the factor. The Eigenvalues coefficient is approximately equal to and greater than 1 and 3 factors are extracted with good information summary. The total extracted variance is 65, 773% > 50%, showing that the EFA model is suitable. The result of the first rotation matrix is shown in Table 4. The rotation matrix shows that 12 observed variables are grouped into 3 factors. All observed variables have a Factor Loading greater than 0.5.

Round 2 is the EFA analysis for the dependent variables. 12 independent variables are grouped into 3 dependent variables: Capacity of accounting staff (NLKT); modernity of the information system (HĐTT) and manager's awareness (NTQL). The results are shown as follows: The KMO coefficient is 0.627, so the factor analysis is appropriate. Bartllet test is statistically significant because the Bartlett's sig coefficient is < 0.05, proving that the observed variables are correlated with each other in the factor. The total extracted variance is > 50% (53.673%), showing that the EFA model is suitable.

4.3 Pearson correlation analysis

Pearson correlation analysis was used to test the linear correlation between the dependent variable and the independent variables, and to identify multicollinearity issues early on when the independent variables are strongly correlated with each other. The Pearson correlation coefficient r ranges from -1 to 1 (significant only when sig is less than 0.05; if sig is greater than 0.05, the pair of variables is not linearly correlated). The results of the analysis are shown in the following table:

Table 3: Result of the Pearson correlation analysis

Correlations					
		CDS	NTLD	NLKT	HDTT
CDS	Pearson Correlation	1	.794**	.413**	.395**
	Sig. (2-tailed)		.000	.000	.000
	N	150	150	150	150
NTQL	Pearson Correlation	.794**	1	.314**	.274**
	Sig. (2-tailed)	.000		.000	.001
	N	150	150	150	150
NLKT	Pearson Correlation	.413**	.314**	1	.323**
	Sig. (2-tailed)	.000	.000		.000
	N	150	150	150	150
HĐTT	Pearson Correlation	.395**	.274**	.323**	1
	Sig. (2-tailed)	.000	.001	.000	
	N	150	150	150	150
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Result from SPSS 26 (2024)

The results of the above table show that: The sig coefficients of Pearson correlation are all less than 0.05, indicating that there is a linear relationship between the independent variables NTQL, NLKT, and HĐTT and the dependent variable CDS. Among them, NTQL and CDS have the strongest correlation with r = 0.794; CDS and HĐTT have the weakest correlation with r = 0.395. The independent variables are weakly correlated with each other, so there is a high probability that no multicollinearity occurs. No independent variable was removed from the model.

4.4 Regression analysis

The results of the regression analysis are shown in Tables 4, 5, and 6. $R^2 = 0.681$ indicates that the independent variables included in the regression model explain 68.1% of the variation in the dependent variable. The Durbin-Watson coefficient is close to 1.5, so there is a high probability that no serial-autocorrelation occurs. According to the results of the ANOVA table, the sig coefficient of the F test is 0.00 < 0.05, indicating that the linear regression model is suitable for the dataset and can be used.

Table 4: Model summary

Model Summary[b]					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.826[a]	.681	.675	.42167	1.459
a. Predictors: (Constant), HĐTT, NTQL, NLKT					
b. Dependent Variable: CDS					

Source: Result from SPSS 26 (2024)

Table 5: ANOVA analysis

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	55.540	3	18.513	104.119	.000[b]
	Residual	25.960	146	.178		
	Total	81.500	149			
a. Dependent Variable: CDS						
b. Predictors: (Constant), HĐTT, NTQL, NLKT						

Source: Result from SPSS 26 (2024)

Table 6: Regression model

Coefficients[a]								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	-.990	.306		-3.236	.001		
	NTQL	.889	.063	.707	14.111	.000	.868	1.152
	HĐTT	.211	.068	.157	3.114	.003	.863	1.159
	NLKT	.185	.067	.140	2.747	.002	.841	1.189
a. Dependent Variable: CDS								

Source: Result from SPSS 26 (2024)

The VIF coefficients are all less than 2, proving that there is no multicollinearity. The sig coefficients of the t test for all variables are < 0.05, so no variable is excluded from the model. All regression coefficients are greater than 0, so all variables included in the analysis are positively correlated with the dependent variable. The above table shows that the variance inflation factor of all variables is less than 10 (VIF < 10), therefore, no multicollinearity is detected. The factors affecting the level of readiness for digital transformation in the organization of accounting in wood processing enterprises in Bac Ninh province are shown through the standardized linear regression equation as follows:

Level of digital transformation readiness = 0,77*NTQL + 0,157 * HĐTT+ 0,140 * NLKT

5. Conclusion and Recommendations

From the results of the standardized regression model, the author identified 3 factors that have an impact on the level of readiness for digital transformation in the organization of accounting in wood processing enterprises in Bac Ninh province, arranged in order of decreasing βeta coefficient as: Impacts of manager's awareness (NTQL); modernity of the information system (HĐTT), and capacity of accountants (NLKT).

The research results show that the βeta coefficient of the factor manager's awareness (NTQL) is ***0.77***. With this result, the NTQL factor positively affects the level of readiness for digital transformation in wood processing enterprises in Bac Ninh. This is the factor with the greatest influence with a βeta coefficient of ***0.157*** according to the research results; the modernization level of the information system (HĐTT) also has a positive impact on the level of readiness for digital transformation, the result confirms that the information system has an impact in the same direction as the level of readiness for digital transformation.

As one of the factors directly related to the accounting department, it is not surprising that the capacity factor of accounting staff (NLKT) also shows a positive impact on the level of readiness for digital transformation with a beta coefficient of ***0.140***, this further confirms the important role of accountants in the digital transformation process.

Thus, through the tests and analyzes that have been carried out with SPSS 26 software, the results show that all the hypotheses proposed in the study are accepted, namely:

Hypotheses H1: The capacity of accounting staff (NLKT) has a positive impact on the level of readiness for digital transformation in the organization of accounting in wood processing enterprises in Bac Ninh province.

Hypotheses H2: The modernity of the information system (HĐTT) has a positive impact on the level of readiness for digital transformation in the organization of accounting in wood processing enterprises in Bac Ninh province

Hypotheses H3: Manager's awareness (NTQL) has a positive impact on the level of readiness for digital transformation in the organization of accounting in wood processing enterprises in Bac Ninh province.

Based on the research results, to improve the level of readiness for digital transformation in the organization of accounting of these enterprises, it is necessary to focus on the following issues:

Firstly, it is necessary to further raise the awareness of management about digital transformation. Understanding digital transformation is not enough, managers need to integrate digital transformation plans into specific work programs, make financial plans and have a recruitment plan for personnel to serve digital transformation.

Secondly, it is necessary to increase investment in the information system of the enterprise, focusing on investing in modern digital technologies to serve the accounting duties. Strengthen the connection between the accounting department and other departments in the enterprise; standardize the team of specialized personnel in charge of managing the information system.

Thirdly, it is necessary to have a plan to train and improve the capacity of accounting staff, including both professional capacity and information technology level. Set strict requirements for learning to improve the qualifications and ability to access and apply digital technology of accounting staff.

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